Report to the Mississippi Legislature

A Review of the Wireless Communication Commission

#635
October 29, 2019

PEER MISSISSIPPI
Joint Legislative Committee on Performance Evaluation and Expenditure Review

PEER: The Mississippi Legislature's Oversight Agency

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A joint committee, the PEER Committee is composed of seven members of the House of Representatives appointed by the Speaker and seven members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms, with one Senator and one Representative appointed from each of the U.S. Congressional Districts and three at-large members appointed from each house. Committee officers are elected by the membership, with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of four Representatives and four Senators voting in the affirmative.

Mississippi's constitution gives the Legislature broad power to conduct examinations and investigations. PEER is authorized by law to review any public entity, including contractors supported in whole or in part by public funds, and to address any issues that may require legislative action. PEER has statutory access to all state and local records and has subpoena power to compel testimony or the production of documents.

PEER provides a variety of services to the Legislature, including program evaluations, economy and efficiency reviews, financial audits, limited scope evaluations, fiscal notes, special investigations, briefings to individual legislators, testimony, and other governmental research and assistance. The Committee identifies inefficiency or ineffectiveness or a failure to accomplish legislative objectives, and makes recommendations for redefinition, redirection, redistribution and/or restructuring of Mississippi government. As directed by and subject to the prior approval of the PEER Committee, the Committee's professional staff executes audit and evaluation projects obtaining information and developing options for consideration by the Committee. The PEER Committee releases reports to the Legislature, Governor, Lieutenant Governor, and the agency examined.

The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

PEER Committee
Post Office Box 1204
Jackson, MS 39215-1204

(Tel.) 601-359-1226
(Fax) 601-359-1420
(Website) www.peer.ms.gov

The Mississippi Legislature

Joint Committee on Performance Evaluation and Expenditure Review

PEER Committee

SENATORS
LYDIA CHASSANIOL
Vice Chair
KEVIN BLACKWELL
Secretary
TERRY C. BURTON
GARY JACKSON
SAMPSON JACKSON II
CHARLES YOUNGER

REPRESENTATIVES
BECKY CURRIE
Chair
RICHARD BENNETT
STEVE HORNE
TIMMY LADNER
MARGARET ELLIS ROGERS
RAY ROGERS
PERCY W. WATSON

TELEPHONE:
(601) 359-1226

FAX:
(601) 359-1420

Post Office Box 1204
Jackson, Mississippi 39215-1204

James A. Barber
Executive Director

www.peer.ms.gov

OFFICES:
Woolfolk Building, Suite 301-A
501 North West Street
Jackson, Mississippi 39201

October 29, 2019

Honorable Phil Bryant, Governor
Honorable Tate Reeves, Lieutenant Governor
Honorable Philip Gunn, Speaker of the House
Members of the Mississippi State Legislature

On October 29, 2019, the PEER Committee authorized release of the report titled ***A Review of the Wireless Communication Commission.***

Representative Becky Currie, Chair

This report does not recommend increased funding or additional staff.

Table of Contents

List of Exhibits

PEER MISSISSIPPI
Joint Legislative Committee on Performance Evaluation and Expenditure Review

Joint Legislative Committee on Performance Evaluation and Expenditure Review
Report Highlights
October 29, 2019

A Review of the Wireless Communication Commission

CONCLUSION: The Wireless Communication Commission has successfully created and operates a durable, interoperable, emergency communications network with 97% statewide mobile radio coverage. The biggest threat to WCC's efficiency is its current statutorily required organizational relationship with the Mississippi Department of Information Technology Services, which has resulted in confusion over responsibility and duplication of efforts costing ITS at least $168,966 annually in staffing resources that could be put to other use by the Department.

Background:

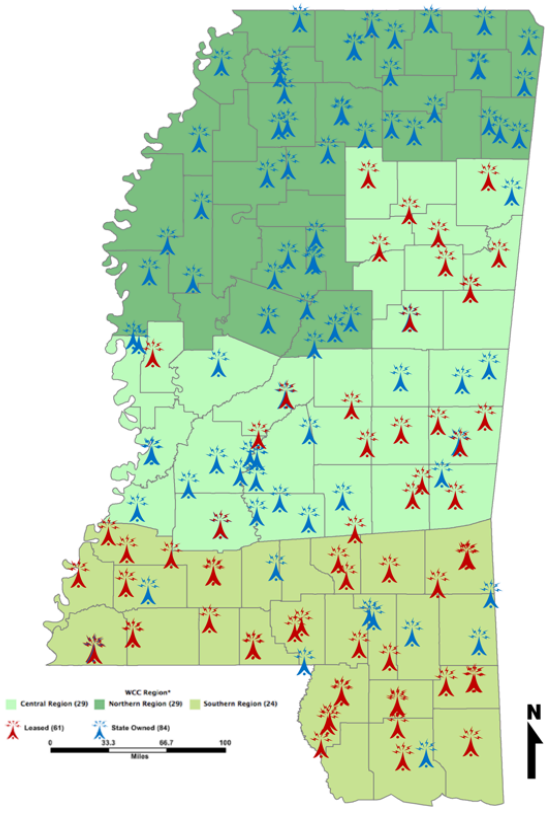
MISS. CODE ANN. Section 25-53-171 (1972) created the 16-member Wireless Communication Commission (WCC) to efficiently implement and maintain a statewide wireless communication system to ensure law enforcement and essential health and safety personnel can effectively communicate during emergencies.

Furthermore, state law grants the Commission, in conjunction with the Department of Information Technology Services (ITS), the sole authority to promulgate rules and regulations governing the operations of the system, as well as all legal authority necessary and proper to operate, plan, manage, and administer the system.

WCC's Effectiveness in Creating and Operating a Statewide Wireless Emergency Communications System

The Mississippi Wireless Information Network (MSWIN) is a land mobile radio trunked public safety communications network with 97% statewide mobile radio outdoor coverage and indoor coverage in critical buildings, such as courthouses. Due to its high cost and technical issues, the network does not provide statewide in-building coverage, which can pose a problem for emergency responders who typically work indoors, e.g., firefighters.

As shown in the map, as of July 1, 2019, there were 145 MSWIN towers located throughout the state, including 84 state-owned towers and 61 towers leased from private and governmental owners.



SOURCE: PEER analysis of data provided by WCC.

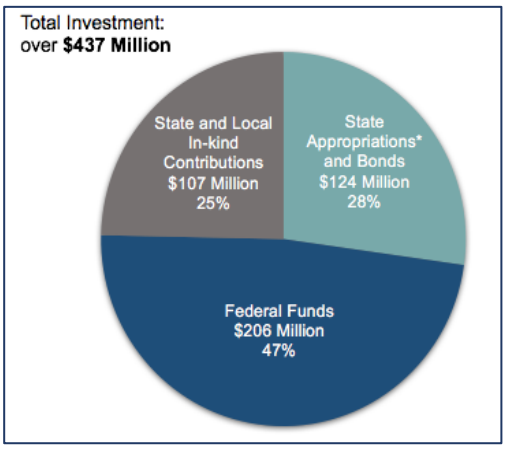
As of July 1, 2019, there were 574 state, local, federal, and private entities participating in MSWIN using approximately 41,357 emergency communication devices, and making an average of over 7.6 million push-to-talk calls per month.

Because MSWIN user membership is voluntary, over 100 local government entities do not use MSWIN as their primary means of emergency communications, which negatively impacts the network's statewide interoperability. In addition, the network's interoperability is impacted by WCC's deficiency in training users in the effective use of the network.

Recommendations to Improve WCC's Effectiveness in Operating MSWIN:

- In conjunction with its MSWIN users, WCC should continue to expand the coverage of the network as needed and justified in relation to its cost and the number of users who would be served.
- WCC should monitor the percentage of busies by individual tower.
- WCC staff should continue to expand and develop training, maintain an accurate list of and contact information for all MSWIN users, and conduct an annual user survey.
- WCC staff should develop a formal strategy to explain the benefits of user membership to entities not currently members of MSWIN so that the network would become their primary method for emergency communications.
- Through additional funding sources or vendor assistance, WCC staff should continue to explore options to make P25-compliant push-to-talk radios more affordable to entities with limited financial resources that have prevented them from joining the network.

WCC's Efficiency in its Expenditure of Public Resources



Source: PEER analysis of documentation provided by WCC.

Revenues and Expenditures

As shown in the chart, from inception in 2005 through July 1, 2019, $437 million in public resources has been invested in the implementation, maintenance, operation, and administration of MSWIN.

WCC's expenditures for the period of FY 2015 through FY 2019 totaled approximately $80.98 million.

WCC's Control over State Agency and Local Government Expenditures on Wireless Communications Systems

While WCC has implemented policies and procedures requiring all state agencies and local government entities to obtain approval from WCC's Procurement Review Committee for all wireless communications purchases greater than $100,000, Jackson County recently entered into a $5.8 million contract to build its own emergency communications system without first seeking approval from WCC.

WCC has statutory sign-off approval authority on all wireless communications systems within the state that are owned or operated by any state or local government entity, agency, or department.

Inefficiencies in the Organizational Relationship between WCC and ITS

In 2005, the Legislature authorized Commission members to provide all of WCC's staff support in order to maximize funds available for MSWIN buildout. ITS was directed to administer WCC's operating fund as well as collaborate and consult with the Commission in carrying out its responsibilities. This statutory collaborative role between ITS and WCC became problematic when WCC began hiring its own staff in 2008. Now, there is confusion over authority and responsibility as well as duplication of effort.

Because WCC staff does not have access to MAGIC, SPAHRS, or MSPB's online employee recruitment system, WCC must send all of the procurement, payroll, and other information that they would otherwise directly enter into the appropriate state system to ITS staff for processing. This arrangement results in unnecessary steps that both waste time and delay processing.

Recommendations to improve WCC's Efficiency in its Expenditure of Public Resources:

- The Legislature should consider the options identified by PEER for organizational placement of WCC (i.e., stand-alone agency with current responsibilities; stand-alone agency with responsibility for all emergency communications in the state; stand-alone agency with physical co-location at MEMA; or assign a different state agency such as MEMA or MDOT to provide administrative support and office space to WCC). The Legislature should then amend the law to reflect the selected option. However, if the law is not changed regarding organizational placement of WCC, then WCC and ITS should jointly request an Attorney General's opinion to opine on the responsibilities of each entity.

- In order to clarify WCC's authority over procurement, the Legislature should amend MISS. CODE ANN. Section 25-53-171 (4)(i) (1972) to replace "sign-off approval" with "prior-authorization."

- WCC should refer Jackson County's procurement of its own emergency communications system to the Mississippi Office of the State Auditor for possible investigation and action.

A Review of the Wireless Communication Commission

Introduction

Authority

Pursuant to the authority granted in MISS. CODE ANN. Sections 5-3-57 et seq. (1972), the PEER Committee reviewed Mississippi's Wireless Communication Commission (WCC).

Scope and Purpose

The purpose of this review is to determine whether WCC is efficiently fulfilling its statutory responsibility to implement a statewide wireless communications system that enables **interoperability**[1] between various wireless communications technologies. The purpose of the system is to provide state and local law enforcement and essential public health and safety personnel with effective communications services in emergency situations. The review covers the nineteen-year period of 2001 through 2019.

Method

PEER reviewed:

- applicable state and federal laws and regulations;
- documents describing the history of the development of Mississippi's statewide emergency **communications system**;
- WCC administrative and financial records;
- appropriation bills for the Mississippi Department of Information Technology Services (WCC is a line-item in the ITS bill) for fiscal years 2005 through 2019; and,
- performance evaluations of interoperable land mobile radio systems in other states.

[1] This term is defined in Appendix A, beginning on page 55, as are all other terms indicated in bold blue text.

PEER also:

- interviewed WCC staff and ITS staff;
- surveyed local entities on the Mississippi Statewide Wireless Information Network (**MSWIN**) as well as entities choosing to not participate in MSWIN for their opinions on WCC's effectiveness in carrying out its responsibilities; and,
- surveyed entities responsible for operating emergency land mobile radio systems in other states to determine their organizational location.

Background

During its 2005 Regular Session, the Legislature created the Wireless Communication Commission to efficiently implement and maintain a statewide wireless communications system to ensure law enforcement and essential health and safety personnel can communicate during emergencies.

This chapter includes discussions of:

- events leading up to the creation of Mississippi's Wireless Communication Commission (WCC) in 2005;
- statutory duties and responsibilities of WCC; and,
- Mississippi's emergency communications landscape.

Events Leading up to the Creation of Mississippi's Wireless Communication Commission

The development of Mississippi's statewide wireless emergency communications system began with the hiring of a consulting firm in 2001 to identify opportunities for better meeting the two-way radio communication needs of state agencies involved in the delivery of essential services. The consultant's report and the work of the Mississippi Statewide Interoperability Executive Committee (SIEC), established through Executive Order, led to the statutory establishment of the Wireless Communication Commission in 2005.

2001-2003: RCC Consultants Assess Problems with Public Safety Two-way Radio Communications in Mississippi

In 2001, the Mississippi Department of Transportation (MDOT) contracted with RCC Consultants, Inc. (RCC), to conduct:

- technological assessment of MDOT's two-way radio system, which, at the time, needed updates and improvements; and,
- needs analysis of the two-way radio and mobile data requirements of MDOT and other state agencies and local entities participating in the study.[2]

In May of 2003, RCC issued an assessment report that noted that Mississippi, like most other states, relies heavily on two-way radio communications to facilitate the timely delivery of public safety

[2] The following state agencies and local entities participated in the RCC study: Mississippi departments of: Transportation; Public Safety; Corrections; Mental Health; Marine Resources; Wildlife, Fisheries and Parks; Environmental Quality; Information Technology Services; Finance and Administration; Health; Human Services. Also, the Mississippi Educational Network, Public Service Commission, Office of Attorney General, Army National Guard, Mississippi Emergency Management Agency, Tax Commission, Forestry Commission, Gaming Commission, Mississippi Municipal League, and Mississippi Sheriff's Association.

and local government services that protect the lives and property of its citizens.

RCC's assessment found that the state agencies and local entities participating in the study operated a wide array of two-way radio communications systems that evolved independently over time, utilizing different system technologies and a variety of radio **frequency bands**. The study identified the following major problems with these independent systems:

- serious radio **coverage** problems within service areas;
- inadequate interoperability (ability to communicate between systems);
- overloaded and crowded radio **channels**, hampering communications access in an emergency;
- harmful external source interference with public safety radio communication;
- outdated equipment in need of replacement; and,
- unnecessary duplication of both equipment, including expensive radio towers, and maintenance efforts across the state.

To address these problems, RCC proposed three alternatives. Total cost estimates for each alternative are shown in parentheses:

Alternative 1 – An MDOT-only wireless voice and mobile data solution. This alternative would not be easily expandable to other agencies ($58.6 million).

Alternative 2 – MDOT-only initially, but built-in ability to expand to other agencies over time. This alternative would provide wireless voice and data capability on a per district basis, with limited connectivity to Jackson MDOT offices ($100.4 million).

Alternative 3 – An integrated statewide system for all state agencies included in the RCC assessment. This alternative would provide the highest level of performance and functionality. Local government entities could be served by the system through the purchase of radio field units. The extent of participation in the statewide system could require additional **radio channels** and/or radio sites ($262.5 million).

2003: Executive Order 874 Establishes a Committee to Make Recommendations for Shared Public Safety Wireless Communications System Development

In order to improve the state's ability to respond to emergencies, on February 5, 2003 Governor Ronnie Musgrove signed Executive

Order 874 establishing the Mississippi Statewide Interoperability Executive Committee (SIEC). The Order directed the SIEC to provide recommendations on public safety wireless communications interoperability and **shared systems** development. While the SIEC met to carry out its responsibilities under the Order, the Committee did not issue a formal written report.

2004: Executive Order 920 Restructures the SIEC

On August 4, 2004 Governor Haley Barbour signed Executive Order 920 which restructured the SIEC by adding additional members from various agencies in the state to provide more input regarding public safety wireless communications interoperability and shared system development.

2005: Legislature Creates the Wireless Communication Commission

During its 2005 Regular Session, the Mississippi Legislature passed S.B. 2514, codified as MISS. CODE ANN. Section 25-53-171 (1972), creating the Wireless Communication Commission.

Four months after the creation of WCC and before work had begun on creating a statewide interoperable communications system, on August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast. The serious communication failures experienced during and after the storm reinforced the urgency of creating a highly durable statewide emergency communications system.

Duties and Responsibilities of WCC

MISS. CODE ANN. Section 25-53-171 (1972) directs the Wireless Communication Commission to efficiently implement and maintain a statewide wireless communications system to ensure law enforcement and essential health and safety personnel can communicate during emergencies.

Statutory Duties and Responsibilities of WCC

MISS. CODE ANN. Section 25-53-171(1) (1972) created the Wireless Communication Commission and made it responsible for:

> *"promoting the efficient use of public resources to ensure that law enforcement personnel and essential public health and safety personnel[3] have effective communications services available in emergency situations, and to ensure the rapid restoration of such communications services in the event of disruption caused by natural disaster, terrorist attack or other public emergency."*

[3] In addition to state agencies that provide law enforcement and other essential public health and safety services, at the local level essential public health and safety personnel include, but are not limited to, those employed by fire and police departments, sheriff's offices, 9-1-1 dispatch stations, and emergency operations centers, as well as providers of emergency medical services, health care, and public utility services.

Exhibit 1 below lists the sixteen ex-officio members of the Commission specified in MISS. CODE ANN. Section 25-53-171(2) (1972) as well as the eight members of the Wireless Communication Advisory Board specified in MISS. CODE ANN. Section 25-53-171(9) (1972). By law, all members of the Commission serve a term of not less than four years.

Exhibit 1: Ex-officio Members of the Wireless Communication Commission and Advisory Board

Members of the Wireless Communication Commission	
	Executive Director of the Department of Transportation (or designee);
	Commissioner of Public Safety (or designee);
	Executive Director of the Department of Public Health (or designee);
	Executive Director of the Department of Information Technology Services (or designee);
	Executive Director of the Mississippi Emergency Management Agency (or designee);
	Executive Director of the Mississippi Office Homeland Security (or designee);
	President of the Mississippi Sheriffs' Association (or designee);
	President of the Mississippi Association of Supervisors (or designee);
	President of the Mississippi Municipal Association (or designee);
	President of the Mississippi Association of Fire Chiefs (or designee);
	President of the Mississippi Association of Police Chiefs (or designee);
	Chief of the Mississippi Highway Safety Patrol (or designee);
	Commissioner of the Department of Corrections (or designee);
	Adjutant General of the Mississippi National Guard (or designee);
	Executive Director of the Mississippi Department of Environmental Quality (or designee)
	Executive Director of Wildlife, Fisheries and Parks (or designee)
Members of the Wireless Communication Advisory Board	
	Chairman and Vice Chairman of the Senate Public Utilities Committee (or designees);
	Chairman and Vice Chairman of the House of Representative Public Utilities Committee (or designees);
	Chairman of the Senate Appropriations Committee (or designees);
	Chairman of the House of Representatives Appropriations Committee (or designees);
	Chairman of the Senate Finance Committee (or designees)
	Chairman of the House of Representatives Ways and Means Committee (or designees)

SOURCE: MISS. CODE ANN. Section 25-53-171(2) and (9) (1972).

MISS. CODE ANN. Section 25-53-171(4) (1972) grants the Commission, in conjunction with the Department of Information Technology Services (ITS), the sole authority to promulgate rules and regulations governing the operations of the wireless communications system that they establish pursuant to paragraph (a). This paragraph describes the implementation, through

purchase, lease, acquisition, or other method, of a statewide wireless communications system that enables interoperability between various wireless communications technologies. Paragraph (a) also states that the system will serve wireless users in state and local governments and private entities that enter into a partnership with the Commission.

The law further grants the Commission, in conjunction with ITS, all legal authority necessary and proper to operate, plan, manage, and administer the wireless communications system including, but not limited to other specific authorities listed in statute.

In addition, state law authorizes Commission members to provide to the commission "on a full-time or part-time basis, personnel and technical support necessary and sufficient to effectively and efficiently carry out the requirements" of the law. Because WCC's organizational relationship with ITS is a particular concern and focus of this review, it is discussed in detail beginning on page 44.

Operating Rules and Regulations Established in WCC's Bylaws

MISS. CODE ANN. Section 25-53-171 (3) (1972) requires the Commission to meet at least monthly and to adopt rules governing the time and place for meetings, as well as the manner in which the Commission conducts its business. The Commission elects a chairperson and vice chairperson to serve a two-year term. The current Chairman of the Commission is the Director of the Department of Transportation's Law Enforcement Division, that Department's named designee to the Commission.

The Commission bylaws updated on January 3, 2019, identify rules governing functions of the officers of the Commission; meetings; committee structure; personnel; expenditures; and public records. As shown in Exhibit 2 on page 8, WCC created three standing committees to carry out its primary responsibilities. WCC's Chairperson appoints the members of each standing committee. No member may serve on more than two standing committees and the Executive Officer of WCC does not serve on any standing committee.

Exhibit 2: Primary Responsibilities of WCC's Standing Committees

Committee	Responsibilities
Personnel	• serve as liaison between the Commission and its staff • ensure the establishment of proper personnel practices and management

Interoperability/ Governance	• research and recommend system operational guidelines, rules, and regulations to the Commission for adoption
	• review:
	  ○ Memorandums of Understanding for access to the statewide wireless communications system
	  ○ new system designs for interoperability capabilities
	  ○ technological innovations that may enhance the statewide communications system

Procurement	• administer the established regulations for the acquisition and use of wireless communication (voice and data) devices including, but not limited to two-way radios, cellular telephones, pagers, personal digital assistant devices, and point-to-point high-speed data communication across physical locations using wireless access points as presented to the Commission by governing authorities, state agencies, and institutions of higher learning

SOURCE: Committees are established in the Wireless Communication Commission Bylaws and responsibilities are listed on WCC's website.

Mississippi's Emergency Communications Landscape

Land-mobile radio systems and 9-1-1 emergency response systems are critical components of the state's emergency communications landscape. Also, the recently established federal emergency communications system using broadband technology, known as FirstNet, is emerging as an important component of this landscape.

Role of 9-1-1 in an Emergency Response

A timely response to an emergency situation is facilitated through the national emergency number, 9-1-1, and the rapid routing of the call to the appropriate emergency responders.

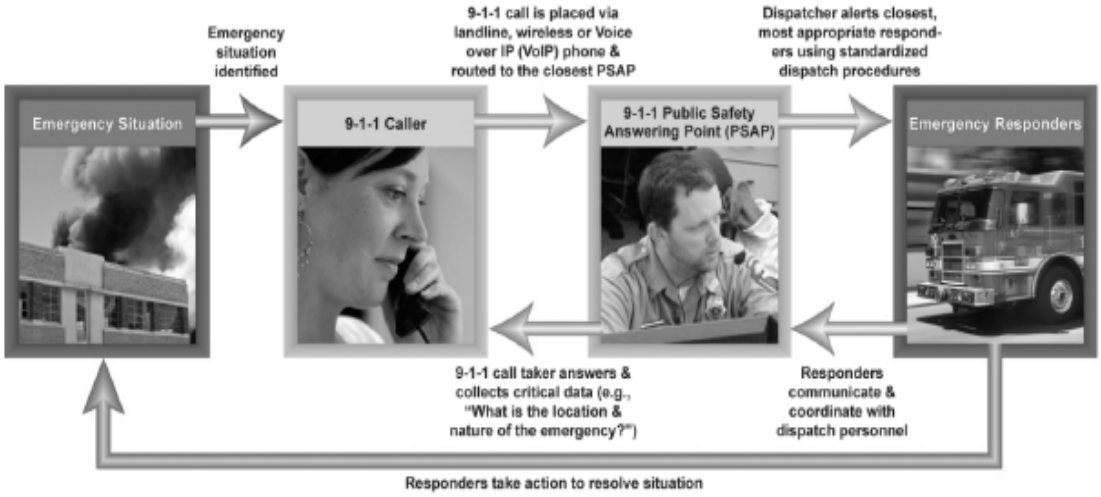
As shown in Exhibit 3 on page 9, emergency voice communication begins with an emergency situation being identified and someone calling 9-1-1. The 9-1-1 call goes to the closest Public Safety Answering Point (PSAP) where a dispatch operator alerts the closest, most appropriate emergency responders to handle the situation.

Emergency responders receive the communication from the 9-1-1 dispatcher through their mobile and/or portable (hand-held) push-to-talk radios. Push-to-talk radios allow emergency responders to

quickly communicate with the dispatch operator and other emergency responders while the dispatch operator remains on the phone with the 9-1-1 caller to obtain important information regarding the nature of the emergency and the location of the caller. NextGen 9-1-1 (NG911) technology automatically pinpoints the emergency caller's location; however, incorporation of this technology into the **emergency communications** system is still in the developmental phase in Mississippi.

According to the U.S. Department of Homeland Security, because a single emergency situation involves multiple response agencies, effective communications among all agencies is key to ensuring public safety.

Exhibit 3: Flow of Communications During an Emergency Response



SOURCE: The U.S. Department of Homeland Security Cybersecurity and Infrastructure Security Agency (CISA).

Role of Land Mobile Radio Systems (LMRs) in an Emergency Response

Land Mobile Radio systems (LMRs) are the primary means for transmitting voice communications between emergency responders.

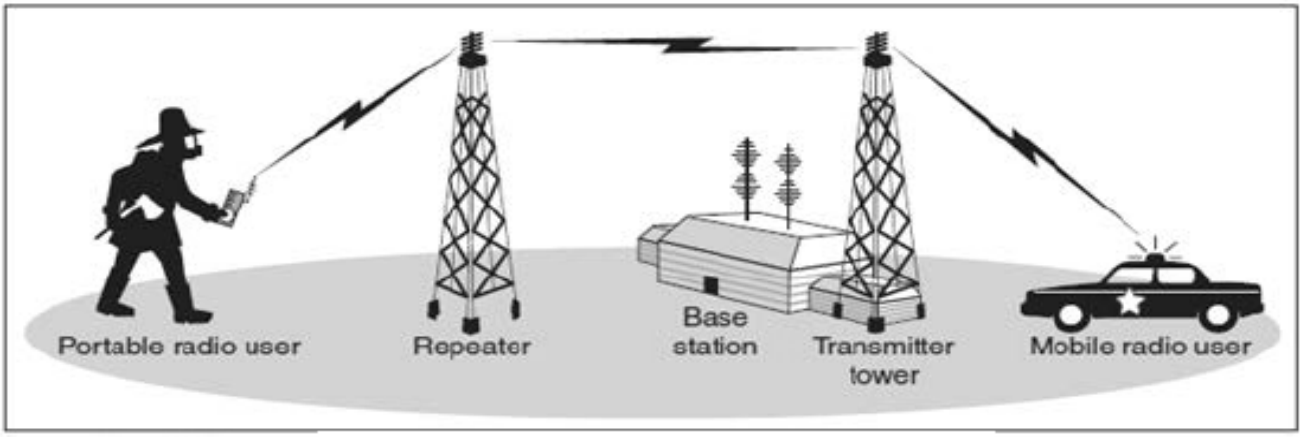
A Land Mobile Radio system (LMR) is a terrestrially-based, wireless communications system used by state, local, federal, and tribal entities/agencies during emergencies to support voice and low-speed data (e.g., GPS tracking) communications. LMRs are designed to include rapid voice call-setup, group calling capabilities, high-quality audio, and guaranteed priority access to end-users. LMRs achieve high levels of **reliability, redundancy**, coverage, and capacity, and are designed to continue operating in harsh natural and human-made disasters. Because of these characteristics, public safety agencies rely on LMRs as the primary means for transmitting emergency voice communications between emergency responders.

As shown in Exhibit 4 below, an LMR system consists of:

- **portable radios**: carried by emergency responders;
- **mobile radios**: located in emergency response vehicles. Because mobile radios use the vehicle's power supply and have a larger antenna, they provide a greater transmission range than portable radios.;
- **base station radios**: located in a fixed position, such as a public safety answering point (dispatch center), and have the most powerful transmitters;
- a **network**: required to connect the different base stations to the same communications system; and,
- **repeaters**: radio towers that increase the effective communication range of portable, mobile, and base station radios by retransmitting received radio **signals.**

LMR systems have push-to-talk functionality, which allows users to push a button and easily and quickly communicate a voice message to other radios in a pre-arranged **talk group**.

Exhibit 4: Basic Components of a Land Mobile Radio System



SOURCE: The U.S. Department of Homeland Security.

Modern LMR systems are **trunked radio systems** that provide increased system capacity and interoperability by allowing for the sharing of channels among a large group of users. Other advantages of trunked systems include:

- security; i.e., outside radios are unable to gain access;
- reduced congestion on the system; and,
- the more efficient use of communication channels.

Role of the Emerging Nationwide Public Safety Broadband Network (FirstNet) in an Emergency Response

When fully functional, FirstNet will allow public safety personnel to augment their voice capabilities on LMRs with mobile data services and information-sharing applications transferred through cellular broadband networks.

Title VI of the Middle-Class Tax Relief and Job Creation Act of 2012 requires FirstNet[4] to establish a nationwide, interoperable broadband network that prioritizes public safety communications. Examples of public safety broadband applications include:

- video streaming;
- mapping/location-based services;
- large data file transfers; and,
- telemetry.

In their current form, emergency LMR systems and emerging public safety broadband systems are complementary rather than duplicative. Exhibit 5 on page 12 compares technological and operational differences between Mississippi's Land Mobile Radio Systems and FirstNet.

[4] Signed into law on February 22, 2012 by the United States Congress, this Act created the First Responder Network Authority, known as FirstNet, within the National Telecommunications and Information Administration (NTIA) of the U.S. Department of Commerce.

Exhibit 5: Technological and Operational Differences between Mississippi's Land Mobile Radio System and FirstNet

	Mississippi's LMR	FirstNet
Technological Differences		
Primary Function	Push-to-talk voice communications and limited data communications	High speed data transfer
Equipment	Land mobile radios	Cell phones, tablets, laptops, and other devices with data transfer capabilities
Infrastructure	700 MHz voice and data network that utilizes trunked technology maintained by the Wireless Communication Commission through a contract with Motorola	An open system utilizing the cellular broadband network operated by AT&T
Operational Differences		
Oversight and planning	The Wireless Communication Commission in conjunction with the Department of Information Technology	The First Responder Network Authority of the United States Department of Commerce
Management	The Wireless Communication Commission in conjunction with the Department of Information Technology Services	FirstNet/AT&T
Primary vendor	Motorola	AT&T
Funding sources	State appropriations, federal funds, and in-kind contributions from local governments	Federal funds, user fees, commercialization of unused capacity
Requires users to pay a fee (yes or no)	No, with the exception of NGOs	Yes

SOURCE: Based on information provided in the North Carolina General Assembly Program Evaluation Division's report on *VIPER and FirstNET are Vital for Public Safety Interoperability, but VIPER Requires Upgrades* and PEER analysis of documentation provided by the Wireless Communication Commission.

In March 2017, FirstNet entered into a 25-year public-private partnership with AT&T to build and operate the wireless broadband network using federal funds and revenues that AT&T will generate by charging its public safety users fees for system usage and by commercializing unused broadband capacity.

The Governor of each state had 90 days after receiving its FirstNet state plan from AT&T to either "opt-in" or opt-out." States choosing to "opt-out" would still be responsible for creating, maintaining, and funding their own **Federal Communication Commission** (FCC)-approved wireless broadband public safety network, but would receive no federal funding.

The Governor of Mississippi officially opted in to FirstNet at the end of December in 2017. As of January 2018, all 50 states, 5 territories, and the District of Columbia have opted in to the FirstNet network.

Analysis of WCC's Effectiveness in Creating and Operating a Statewide Wireless Emergency Communications System

WCC has successfully created and operates a durable, interoperable, wireless emergency communications system with 97% statewide mobile radio coverage that is used by 574 state, local, federal and private entities. Challenges to the system's effectiveness include geographic areas of inadequate indoor radio coverage, the threat of two coastal counties to build their own independent emergency communications systems rather than join MSWIN, and known deficiencies in MSWIN user training.

This chapter includes discussions of:

- characteristics of an effective statewide wireless emergency communications system;
- Strengths and weaknesses in MSWIN:
    - coverage,
    - interoperability,
    - durability,
    - usage; and,
- the results of PEER's MSWIN user satisfaction survey.

Characteristics of an Effective Statewide Wireless Emergency Communications System

WCC's enabling legislation specifies the following characteristics of an effective wireless emergency communications system: statewide coverage, durability (ability to withstand a disaster), interoperability, and usage by both state and local law enforcement and essential public health and safety personnel.

MISS. CODE ANN. Section 25-53-171 (1972) authorizes WCC, in conjunction with ITS, to implement a statewide wireless emergency communications system with the following characteristics:

- statewide emergency radio coverage;
- durability in the face of natural disaster, terrorist attack, or some other public emergency;
- statewide interoperability (ability to communicate between users on different, but compatible, devices); and,
- usage of the system by law enforcement and essential public health and safety personnel in state and local governments and private entities that partner with the commission.

The following report sections discuss WCC's effectiveness in meeting each of these emergency communications system objectives.

System Coverage

By December 2012, WCC had succeeded in deploying a land mobile radio trunked public safety communications network with 97% statewide mobile radio outdoor coverage and indoor coverage in critical buildings such as courthouses. Due to its high cost and technical issues, the network does not provide statewide in-building coverage, which can pose a problem for emergency responders who typically work indoors, e.g., firefighters.

Statutory Requirements for System Coverage

MISS. CODE ANN. Section 25-53-171(4)(a) (1972) grants the commission, in conjunction with ITS, the authority to implement, through purchase, lease, acquisition, or other method, a statewide wireless emergency communications system.

Request for Proposals and Contract Award

In February of 2006, the Mississippi Department of Information Technology Services (ITS) issued a Request for Proposals (RFP) for the:

> *"Deployment of a statewide digital trunked land mobile radio system to coordinate the delivery of services to the citizens of Mississippi and enable immediate interoperability among public safety resources in routine and emergency situations."*

The RFP further stated:

> *"The Mississippi Wireless Integrated Network (MSWIN)[5] project will deploy a wireless voice and data capable **infrastructure**, which will provide all users a public-safety grade, statewide, interoperable, seamless roaming radio system. This 700-Megahertz **(MHz)** Public Safety System is intended to provide highly reliable, fast access, private (within groups and individuals) communications to a wide variety of users within the State."*

Article 3, Section 3.1 of the RFP called for proposals that would provide WCC with "a turnkey System consisting of equipment, software, engineering and installation services, technical support, maintenance and training for the implementation of the MSWIN System." Section 9.1.3.1.2 of the RFP specified 97% mobile Area Coverage Reliability for the public safety radio service delivered through MSWIN.

In June 2007, ITS and WCC entered into a contract with the winning bidder Motorola Solutions, Inc. ("Motorola") to deploy MSWIN and

[5] MSWIN stands for the Mississippi Wireless Information Network.

provide the related equipment, services, and network coverage described in the RFP.[6]

Three-phase Deployment of MSWIN

Motorola designed and implemented MSWIN in a three-phase approach based on the geographic districts already in use by the Mississippi Highway Patrol (MHP):

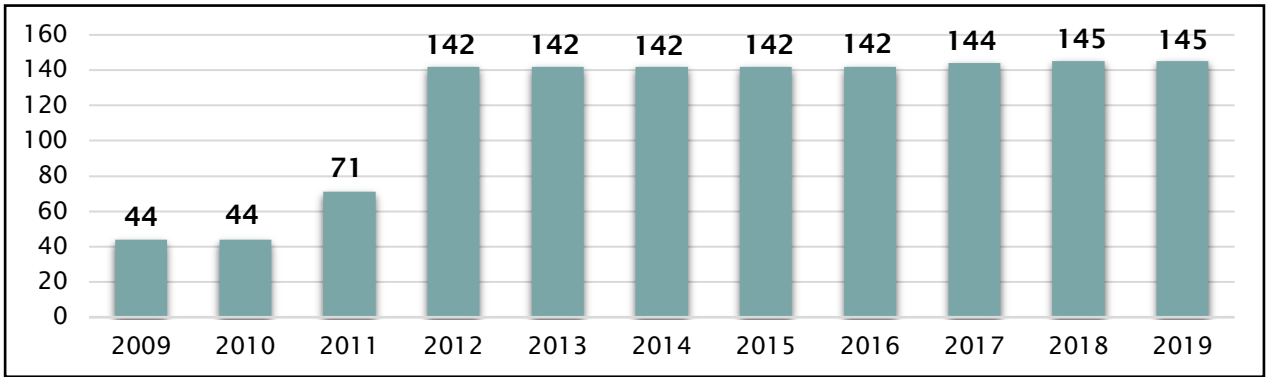
- Phase 1, WCC southern region: MHP Districts 7, 8, and 9;
- Phase 2, WCC central region: MHP Districts 1, 5, and 6; and,
- Phase 3, WCC northern region: MHP Districts 2, 3, and 4.

Motorola estimated that the initial deployment of MSWIN would take four years from initial tower acquisition in 2009.

Exhibit 6 below, shows the total number of radio towers on MSWIN, by year. During the deployment of MSWIN, WCC utilized its own staff, as well as staff of the Departments of Transportation and Public Safety (including the State Highway Patrol) to travel around the state, test mobile radio coverage, and document any gaps. Motorola took corrective action to eliminate the gaps. By December 2012, the system had 142 towers providing the 97% mobile (outdoor) coverage agreed upon in WCC's contract with Motorola. WCC installed three additional towers between 2016 and 2018 to increase coverage in specific areas of the state experiencing coverage problems.

See Exhibit 7 on page 17 for a map of all MSWIN tower locations by WCC region.

Exhibit 6: Total Number of Radio Towers on MSWIN, by Calendar Year



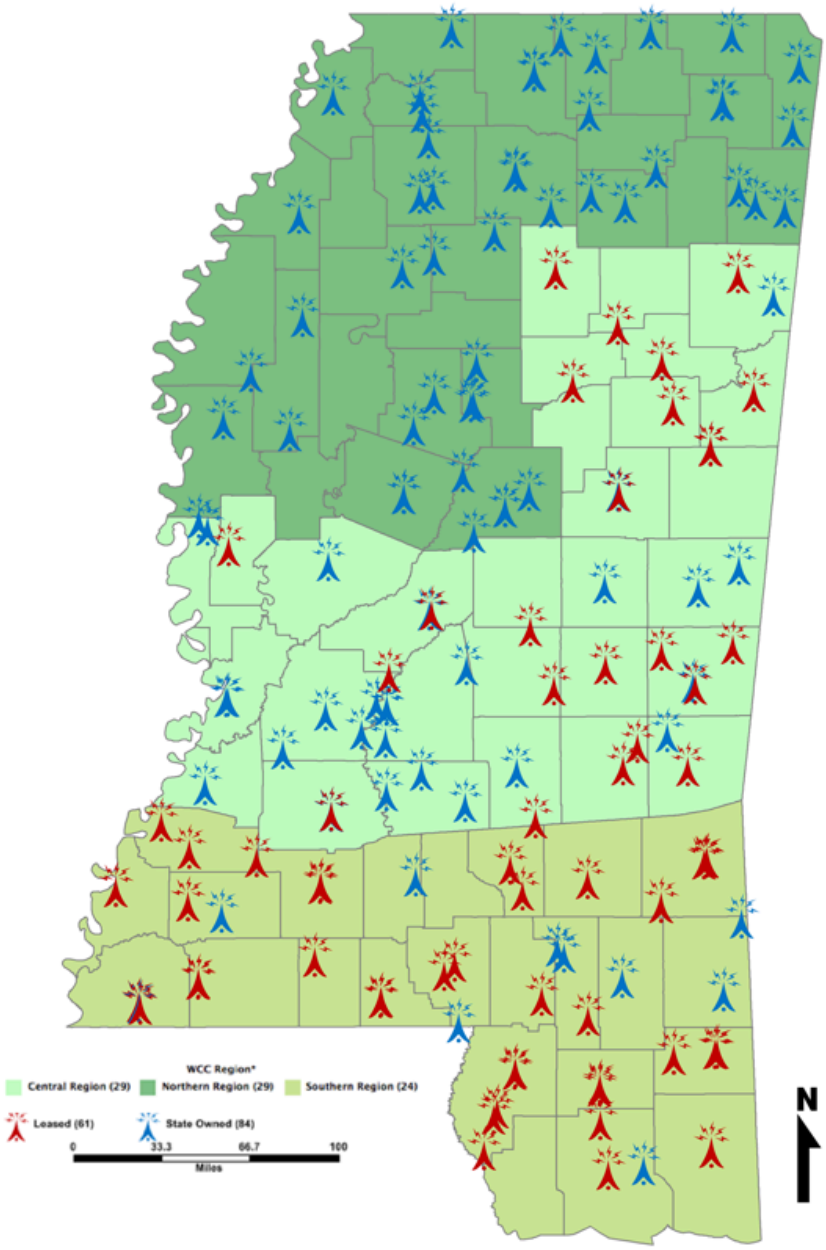
SOURCE: PEER analysis of data provided by WCC.

[6] The current contract with Motorola, which expires on June 30, 2021, can be extended upon written agreement between the two parties. WCC staff anticipates extension of the contract, within the previously approved authority, given the ongoing expansion and improvement of MSWIN.

MSWIN Includes both Leased and State-owned Radio Towers

MSWIN includes radio towers that WCC leases from private and governmental owners and radio towers that the state owns. WCC contracted for the construction of most of the towers that the state owns, but some were built by MSWIN users. According to WCC staff, in order to expedite MSWIN deployment within its budget, the WCC opted to primarily lease radio towers during the initial phase. As federal funds available for tower construction increased, WCC expanded MSWIN with a heavier reliance on state-owned versus leased radio towers. Of the 145 total towers on MSWIN as of July 1, 2019, the state owns 84 and leases 61. See Exhibit 7 on page 17 for a map of leased and state-owned tower locations by WCC region.

Exhibit 7: Map of Leased and State-Owned Radio Towers on MSWIN as of July 1, 2019[7]

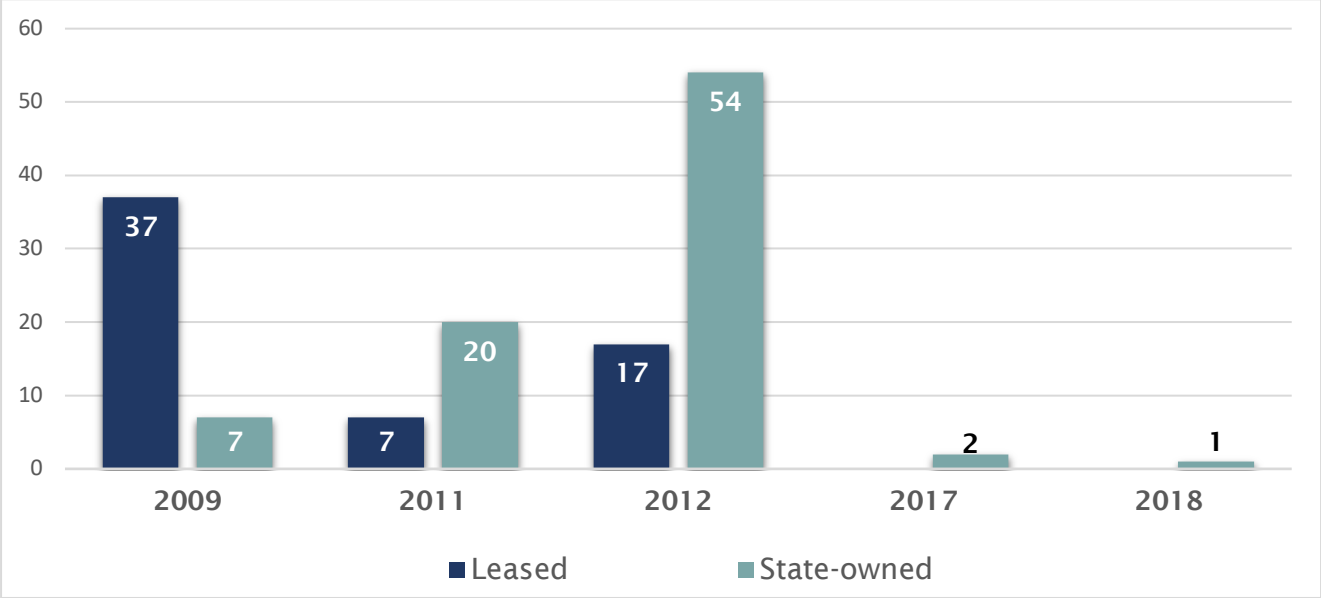


*Based on the Mississippi Highway Patrol districts (MHP). WCC's central region includes MHP districts 1, 5, and 6. WCC's Northern region includes MHP districts 2, 3, and 4. WCC's Southern region includes districts 7, 8, and 9.
SOURCE: PEER analysis of data provided by WCC.

[7] This map does not include towers where WCC co-locates equipment on existing infrastructure to expand coverage.

Exhibit 8 below shows the number of state-owned versus leased MSWIN towers by year.

Exhibit 8: Number of Leased and State-Owned MSWIN Radio Towers, by Year of Original Lease or State Ownership



Source: PEER analysis of data provided by WCC.

Percentage of Busies as a Measure of Network Capacity

The percentage of "busies" across the network is calculated by dividing the number of calls on MSWIN resulting in a busy signal by the total number of push-to-talk calls attempted. A busy call results when a user presses the push-to-talk button on a radio but is unable to initiate a voice transmission because all channels assigned to the tower site are being utilized by other users. According to a recent report issued by North Carolina's Joint Legislative Program Evaluation Oversight Committee, its statewide wireless communications system, known as VIPER, had an overall percentage of busies of .03%.

From December 2017 to November 2018, MSWIN had a total of 1,301 busies. For that same time period, push-to-talk calls on the network totaled over 77.2 million, making MSWIN's overall percentage of busies .002%, less than the overall percentage reported by North Carolina's system.

Because WCC does not monitor the percentage of busies by individual tower, PEER was unable to analyze the percentage of busies at this level of detail. The collection and analysis of this information would help the Commission to identify any network performance problems at the local level and implement appropriate solutions.

Limitations to MSWIN Indoor Portable Radio Coverage

While WCC tested and ensured adequate statewide indoor portable radio coverage in critical buildings, e.g., courthouses, achieving a 97% level of portable radio coverage in all buildings would be technically challenging and costly. PEER's satisfaction survey of local government MSWIN users showed that at least fourteen of the survey respondents think that in-building coverage is inadequate in their counties and is one reason counties are hesitant to use MSWIN as their primary network.

From a technical standpoint, some materials used in building construction (e.g., concrete, metal) can make it difficult to impossible for radio waves to penetrate.

WCC considers requests for improved coverage on a case by case basis. When WCC receives a complaint about coverage, its staff first conducts an on-site inspection to determine whether there is a way to improve coverage with existing towers and equipment. Once the use of existing equipment has been maximized to improve portable coverage, WCC attempts to address any remaining indoor coverage gaps by identifying the least costly solution to the coverage issue and working with the concerned entity to identify funding sources for remedial action such as the construction of additional towers. WCC staff also takes into consideration whether the cost of the proposed solution is justified by the number of emergency responders whose communications would be improved. From FY 2016 through FY 2018, WCC constructed three additional towers to increase coverage: two sites near Camp Shelby and one site near the Mississippi State Penitentiary at Parchman. During FY 2020, WCC plans to add a tower near Canton that will increase coverage in Madison County, including portable indoor coverage. WCC will continue to determine where additional coverage is needed and financially feasible.

MSWIN Durability

MSWIN is a highly durable network designed and built to ensure continuous emergency communication capability and rapid restoration in the event of a disaster.

Statutory Requirements for Durability

MISS. CODE ANN. Section 25-53-171 (1972) makes WCC responsible for ensuring that "law enforcement and essential public health and safety personnel have effective communications services available in emergency situations," and ensuring "the rapid restoration of such communications services in the event of disruption caused by natural disaster, terrorist attack or other public emergency."
The RFP issued for MSWIN noted that network users may be working under life threatening conditions during emergency situations making network durability of critical importance:

"Flooding, lightning, tornadoes, and other natural or man-made catastrophes often require effective wide-area, interoperable communications. Thus, communications within the State of Mississippi are most critical when they are most susceptible to failure. Consequently, a high degree of redundancy and fail-safe design is essential to the success of this project."

MSWIN Designed and Maintained to Ensure Durability

MSWIN includes many elements designed to make the network durable in emergency situations. From a design standpoint, MSWIN achieves durability through:

- redundancy;
- geographic resiliency; and,
- looping.

MSWIN has built-in redundancy in that each region has a radio communication sub-system that can operate as part of the statewide network or independently in an emergency. Regional control center master sites are located in Hattiesburg, Rankin County, and Batesville.[8]

MSWIN was also designed with geographic resiliency; i.e., the pairing of a master site located in one part of the state with an emergency backup master site located in another part of the state. For example, in the event that a hurricane destroys the Hattiesburg master site, emergency responders in the affected area will be able to communicate seamlessly through their designated master site in Batesville.

Bi-directional microwave looping is a system design feature that was built into MSWIN to help ensure that an operative tower will not be disabled by an adjoining inoperative tower. In a one-directional system, a functioning tower at the end of the line can be cut off by an adjacent tower that is not working. By configuring the towers in a series of loops, each tower can communicate in either direction with an adjacent tower, which improves the likelihood of uninterrupted service.

In addition to these durable design features, each tower site is "hardened" to help ensure uninterrupted emergency communication capacity in the event of a disaster. Current tower standards have a criteria design wind speed of 140 miles per hour. Each tower site is equipped with an emergency power system (backup generators), an equipment shelter, and redundant site controllers. The system's microwave radios are supported by battery-powered backups.

To further ensure the durability of the system, WCC staffs a Network Operations Center (NOC) in Jackson and contracts with Motorola to monitor MSWIN 24 hours a day, 365 days per year.

[8] As of 2015, DeSoto County provided a fourth master site located near Nesbit, Mississippi.

Under the contract, Motorola ensures that all network software is up-to-date and that all network equipment is routinely inspected and properly maintained. Network monitoring and operations provided by Motorola includes an on-site Jackson-based Customer Support Manager and three regional Field Service Technicians, as well as an out-of-state System Support Center that remotely monitors the network's statewide alarm system.

Under a contract with Motorola, WCC staff provides routine and preventive maintenance, restoration services, and repairs/replacements to the network during warranty and post warranty periods. WCC's operation and maintenance of MSWIN relieves local users from the burden of having to maintain and upgrade their own emergency communications systems, thereby increasing the time and resources available for providing public safety to the state.

MSWIN Emergency Back-up Sites on Wheels

As an additional measure of network protection, WCC has two types of portable towers that it can bring into an area affected by a disaster. WCC's master site on wheels (MSOW) can be used as fully functional backup to MSWIN's three regional control master sites. According to WCC staff, the MSOW is rapidly deployable and has the same functionality and redundancy as a permanent regional control center master site. WCC also has three radio repeater sites on wheels (SOWs) (shown in the picture to the left) that can be used to restore the wide area functionality of the network infrastructure anywhere in the state when it is damaged or destroyed. These transportable sites have the same functionality as a permanent radio repeater site. WCC also maintains a cache of 1,000 portable radios with battery backups that can be deployed in the event of an emergency.

Examples of MSWIN Durability During Natural Disasters

Examples of MSWIN's continuous functioning during natural disasters include the following:

- In 2014, a tornado hit Louisville, Mississippi, severely impairing cell service and knocking down a locally owned land mobile radio tower. MSWIN's continued functioning in the affected area was instrumental in allowing first responders to provide critically needed assistance.

- The Executive Director of MEMA reported that MSWIN was the only consistent means of communications when 17 tornados hit 21 counties one weekend in April of 2019. While cellular service was disrupted by the severe weather, MSWIN provided continuous emergency communication coverage.

Examples of WCC's usage of back-up coverage:

- In April 2010, a large tornado destroyed parts of Yazoo City and the surrounding county. The county's land mobile radio system at the time would not support the number of responders needed to assist with rescue and recovery. Because MSWIN had not been deployed in that area of the state yet, WCC was able to bring in and utilize a Site on Wheels (SOW) to augment coverage.

- During the 2011 Mississippi River flood, interoperable communications were non-existent in counties that border the river. The MSWIN towers in northwest Mississippi had not been built so WCC installed five sites on existing tower infrastructure and provided communications to DeSoto, Tunica, Bolivar, and Washington counties during this time. WCC connected these sites to MSWIN at the Zone 2 Master site in Pearl, Mississippi.

MSWIN Interoperability

WCC ensures the interoperability of MSWIN by ensuring that devices on the network are Project 25 (P25) compliant and by adhering to interoperability standards developed by the Department of Homeland Security. One area of deficiency noted by WCC staff is in the training of users in the effective use of the network, which has the potential to negatively impact the network's interoperability.

Definition of Interoperability

Interoperability is the ability of different public safety communication devices to connect, in a coordinated manner, within and across organizational boundaries in order to access, exchange and cooperatively use the voice and data information transmitted through the devices. The ability to communicate directly reduces response time, which is critical in addressing an emergency.

Statutory Requirements for Interoperability

MISS. CODE ANN. Section 25-53-171 (4)(a) (1972) states with regard to MSWIN:

> *"This system shall enable interoperability between various wireless communications technologies."*

WCC Requirement for P25 Compliance of all Devices on the Network to Ensure Interoperability of Devices

WCC ensures the interoperability of devices on MSWIN by requiring adherence to the Project 25 (P25) suite of standards.[9] P25 was developed to address the need for common digital public safety radio communications standards for first-responders and

[9] These standards were produced through the joint efforts of the Association of Public Safety Communications Officials (APCO), the National Association of State Telecommunications Directors (NASTD), selected federal agencies, and the National Communications System (NCS).

homeland security/emergency response professionals. The goal of P25 is to enable public safety responders to communicate with each other and thereby achieve enhanced coordination, timely response, and efficient and effective use of communications equipment.

WCC reviews all requests for the purchase of emergency radio devices and equipment and denies those requests that don't meet its specifications for P25 compliance. A major threat to MSWIN's interoperability is Jackson County's recent $5.8 million contract for a turnkey project to provide the county with a new radio network independent of MSWIN, as discussed on page 33.

Deficiencies in Training on MSWIN Usage may Negatively Impact the Network's Interoperability

Implementing effective training and exercise programs to practice communications interoperability is essential for ensuring that the technology works and emergency public safety personnel are able to effectively communicate during emergencies.

While Motorola and other MSWIN-compatible radio vendors train users on how to use their radios after purchase, they do not provide training on MSWIN-specific uses such as how to access special event **talkgroups**. WCC has one employee assigned to user training, along with his day-to-day obligations of managing MSWIN.

While WCC and its train-the-trainer staff (discussed in the next paragraph) have trained multiple MSWIN users on the proper operation of the network, more users need to be trained in order to fully realize the network's full capabilities. Often, entities converting from their current communications systems to MSWIN are not familiar with the more robust radios needed to operate on the network. Further, it is a challenge for WCC staff to educate MSWIN users on the numerous technological upgrades and expansions to the network that are continuously occurring. Motorola, as required by the contract, provides WCC staff technical training on any network changes or expansions before WCC staff can train MSWIN users.

To address its training challenges, WCC staff worked with the U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency's Emergency Communications Division (CISA-ECD) to create a train-the-trainer program for all local, state, federal, and tribal entities operating on MSWIN. As of July 1, 2019, WCC staff trained 107 train-the-trainers who have in turn trained 2,146 end users. According to WCC staff, more users need to be trained in order to fully realize the advantages of the network. WCC's training goal is to ensure that each entity operating on MSWIN has a designated trainer who will be responsible for training the entity's end-users at least once a year. WCC plans to further improve its end-user training by:

- hiring an individual to oversee WCC's training program, using one of its funded vacant positions;

- establishing a uniform training curriculum;
- creating a Communications Unit[10] (COMU) program to support the state's efforts to train, manage, and deploy personnel and equipment when needed;
- ensuring all users will have access to exercise-based communications training; and,
- increasing the opportunities for MSWIN communications training in multi-agency, multi-discipline training environments.

MSWIN System Usage

As of July 1, 2019, there were 574 state, local, federal and private entities participating in MSWIN using approximately 41,357 emergency communication devices, and making an average of over 7.6 million push-to-talk calls per month. Over 100 local government entities do not use MSWIN as their primary means of emergency communications, which negatively impacts the network's statewide interoperability.

Statutory Requirements for Usage

MISS. CODE ANN. Section 25-53-171 (1972) requires that WCC, in conjunction with ITS, develop a statewide communications system that meets the emergency communication needs of law enforcement and essential public health and safety personnel, and serves users in state and local governments as well as private entities that enter into a partnership with the commission.

Contractual Requirements for Subscriber Capacity

Section 9.1.3.2.4 of the RFP for MSWIN required the system to support 64,000 unique subscriber IDs (i.e., devices) and 16,000 talk-groups. The MSWIN contract also required the system to support 150% future growth in unique subscribers; i.e., 160,000 total unique subscribers. MSWIN capacity increased from 160,000 to 250,000 unique subscriber IDs due to a recent software upgrade.

Process for Joining MSWIN

Participation in MSWIN is voluntary. Entities desiring to join MSWIN must, in conjunction with WCC's Governance Committee, develop and submit a wireless communication plan to WCC for its consideration and approval. Once the Commission has approved an entity's plan, the entity must sign a Memorandum of Understanding (MOU) with WCC. The MOU specifies that the purpose of entering into the agreement is to allow public safety and emergency response agencies to use MSWIN for public safety purposes. The MOU requires the party entering into the agreement with WCC to:

[10] Communications Unit (COMU) personnel plan and manage the technical and operational aspects of the communications function during an incident or event. The COMU program trains emergency responders on practices and procedures common to radio communications during all-hazards emergency operations.

"Operate all PTT (Push-to-talk) Devices only for purposes of public safety and in compliance with Federal Communications Commission and Wireless Communication Commission statutes, rules and regulations."

WCC maintains two standard MOUs for entities joining the system, one for permanent use and one for special events (temporary) use. WCC maintains forty special event talk groups for communication during specific activities such as the State Fair or a time-limited training exercise. Special event talk groups are not to be used for day-to-day communications within an agency. While an entity can choose to participate in MSWIN only through the special events MOU, permanent system users are required to sign both MOUs. WCC requires the special event talk groups to be programmed into every radio which utilizes MSWIN in order to ensure all responders have access to the same information at the same time.

Following the signing of an MOU, WCC issues the entity a MSWIN identification number (unit ID) and assists their staff with programming their push-to-talk radios to operate on MSWIN.

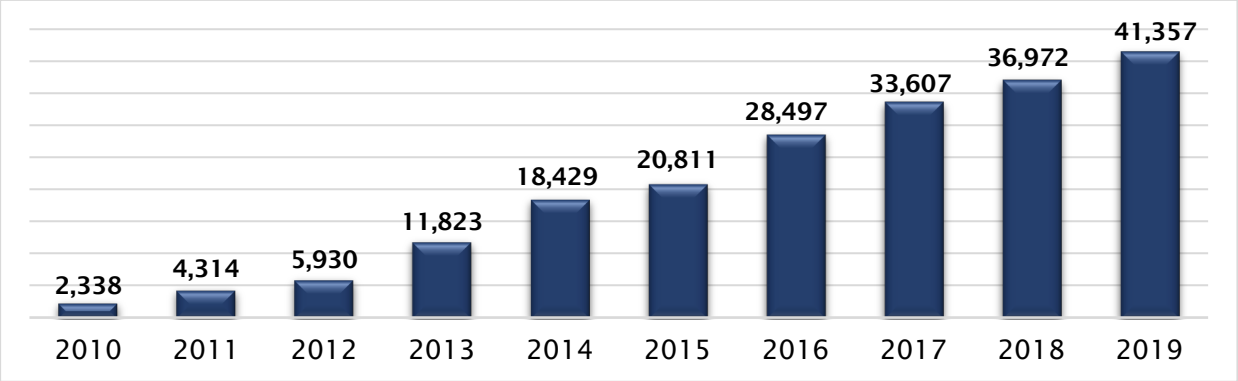
Entities Participating in MSWIN

As of July 1, 2019, 482 local government entities, 48 state agencies, 19 federal and tribal entities, and 25 private/non-governmental organizations participated in MSWIN. Appendix B on page 60 lists all local entities participating in MSWIN, by county and by type of membership (permanent or special events only). Appendix C on page 63 lists all state agencies, federal and tribal entities, and private/non-governmental organizations participating in MSWIN, also by type of membership.

WCC and other emergency wireless communication agencies define a system user/subscriber as a device (e.g., mobile radio, portable radio, console/control station) utilizing the system. One person can be assigned multiple devices on a wireless communications system. For example, most police officers have a mobile radio in their vehicle and a portable radio clipped to their belt, which would count as two system users. For clarity, this report uses the term "device" in place of "user," as a layperson would consider a "user/subscriber" a person, not a device. Further, the word "user" appears in applicable state law when referring to a person using a device on the wireless communications system.

As shown in Exhibit 9 on page 26, as of July 1, 2019, there were an estimated 41,357 devices on MSWIN. The number of devices on the system has increased each year since 2010 by at least ten percent. From FY 2020 forward, WCC staff expects the number of devices on the system to increase by at least 5 percent per year.

Exhibit 9: Estimated Total Number of Emergency Communication Devices on MSWIN, by Fiscal Year

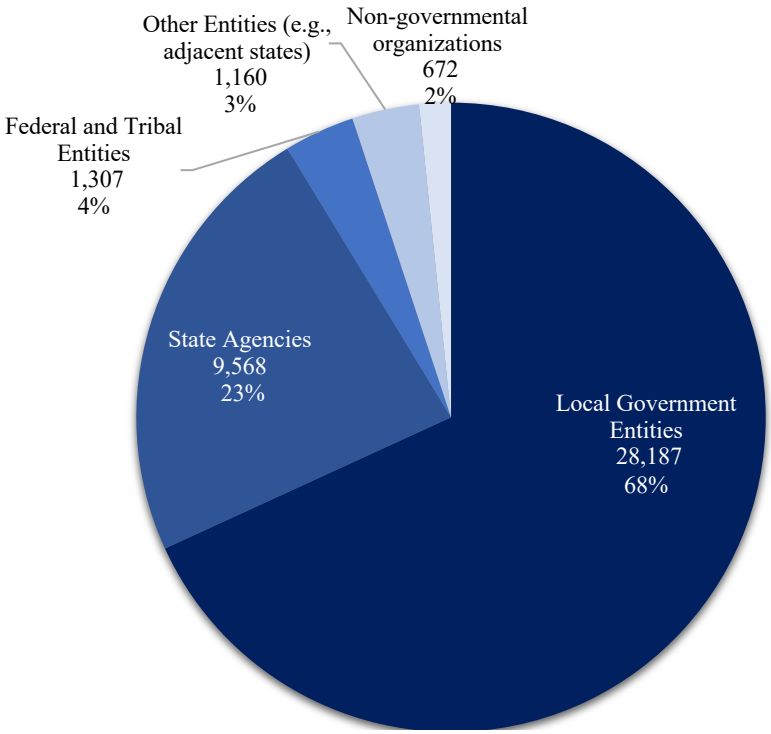


SOURCE: PEER analysis of data provided by the Wireless Communication Commission.

As shown in Exhibit 10 on page 27, as of July 1, 2019, local government entities account for 68% (28,187) of total emergency communication devices on MSWIN. State agencies account for 23% (9,568) of total devices on the system, while federal and tribal entities make up 4% (1,307). Adjacent states (Louisiana, Alabama, Tennessee, and Arkansas), which have the ability to interface with MSWIN to support interstate emergency management activities, make up 3% (1,160) of the total devices on MSWIN.

Non-governmental organizations (NGOs) make up 2% (672) of total devices on MSWIN. Per the Federal Communication Commission (FCC) (47 U.S. Code Section 337 (f)(1)(B)(ii)), a public safety NGO is eligible to join the statewide emergency communications system so long as the NGO "provides services, the sole principal purpose of which is to protect the safety of life, health, or property." WCC determines which NGOs may join the system on a case-by-case basis depending on the entity's proposed use of the network. Examples of the type of NGOs participating in MSWIN include: ambulance and transport services, hospitals, and utility companies. Appendix C on page 63 lists all NGO members of MSWIN.

Exhibit 10: Total Number of MSWIN Devices by Type of Entity as of July 1, 2019



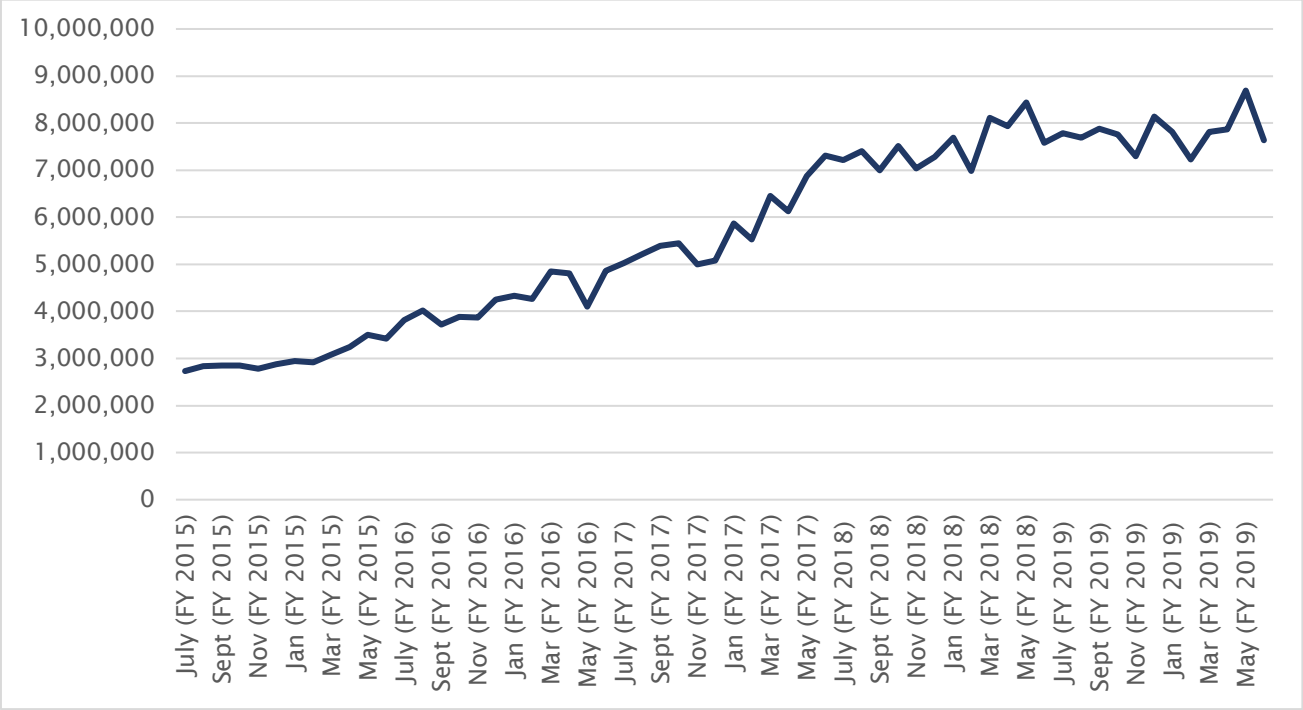
SOURCE: PEER analysis of data provided by the Wireless Communication Commission.

Number of Push-to-talks as a Measure of MSWIN Usage

One measure of MSWIN usage is the number of push-to-talks in a given time frame. WCC's goal is to increase the number of push-to-talks on MSWIN by 5% annually.

According to WCC, in FY 2019, MSWIN users logged an average of 256,431 push-to-talks daily. As shown in Exhibit 11 on page 28, the number of monthly push-to-talks have increased from approximately 2.7 million in July of 2014 to 7.6 million in June of 2019. The annual total increase in push-to-talks in FY 2019 was 4%, short of WCC's 5% goal.

Exhibit 11: Number of Push-to-talks by Month for Fiscal Years 2015 to 2019



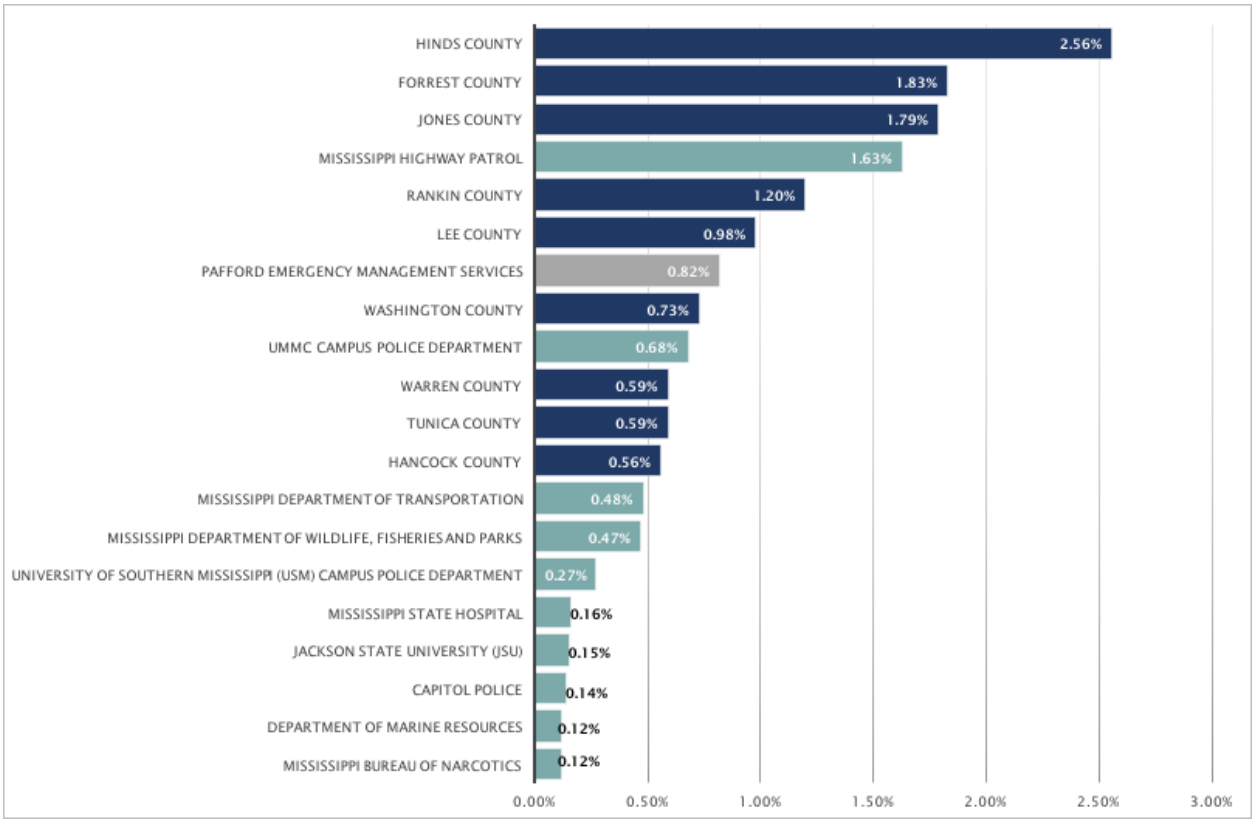
SOURCE: PEER analysis of push-to-talk data provided by the Wireless Communication Commission.

Exhibit 12 on page 29 shows for each of MSWIN's top ten state agency and local/other users, their FY 2019 total push-to-talk time on MSWIN as a percentage of total channel time available. It should be noted that this exhibit does not include the time spent on MSWIN using low-speed data communications, e.g., GPS tracking.

As shown in the exhibit, local government entities within Hinds County used the highest percentage of available channel time (2.56%) followed by 1.83% for Forrest County and 1.79% for Jones County. The Mississippi Highway Patrol was the state entity with the highest usage percentage (1.63%) and Pafford Emergency Management Services was the non-governmental organization with the highest percentage usage (0.82%). If the remaining entities on MSWIN had usage levels similar to the lowest of the top twenty users, total usage would be less than 40%, which allows room for growth given that MSWIN's technical advisor stated that average usage should not exceed 65% in order to ensure emergency access to the system when needed.

Exhibit 12: FY 2019 Total Push-to-talk Time on MSWIN as a Percentage of Total Channel Time Available, for Each of the Top Ten State Agency and Local/Other MSWIN Users

Color code: counties are navy blue, state agencies are light blue, and other entities are gray.



SOURCE: PEER analysis of data provided by the Wireless Communication Commission.

Over 100 Local Government Entities and Two Coastal Counties Do Not Use MSWIN as their Primary Method for Emergency Communications, which Negatively Impacts the Network's Interoperability

While WCC does not have a complete inventory of local government entities that are not on MSWIN, as of July 1, 2019, WCC staff identified 108 entities that are not using MSWIN, which negatively impacts the network's statewide interoperability. Reasons entities do not use MSWIN as their primary means for emergency communications are included in the next section on page 24. WCC's list of entities not on MSWIN includes:

- 86 police departments;
- 11 sheriff's offices;
- 8 fire departments; and,
- 3 airport police departments.

Also, it should be noted that two coastal counties are only using MSWIN for special events; i.e., MSWIN is not their primary means for emergency communications.

Results of Satisfaction Survey of Local Government MSWIN Users

The 83 local government entities that answered PEER's survey questions (35% response rate) reported general satisfaction with MSWIN including its reliability, infrastructure, coverage and support from WCC staff. Respondents made several suggestions for network improvement including increasing indoor radio coverage, addressing the high cost of radios as an impediment to participation in MSWIN, and providing more training to users.

Description of the Survey Instrument and Response Rate

PEER conducted an online survey of 300 local government MSWIN users to determine their level of satisfaction with MSWIN and WCC. It should be noted that WCC has never conducted a user satisfaction survey. WCC staff relies on agencies/entities to contact them when they have a problem with network performance.

Appendix D on page 64 contains a copy of PEER's user satisfaction survey questions. Sixty of the emailed surveys were not deliverable due to incorrect contact information provided by WCC. According to WCC staff, each entity on MSWIN is responsible for maintaining the accuracy of its WCC contact information.

Of the 240 surveys delivered, PEER received 83 complete responses; 13 respondents skipped almost every question. It should be noted that 16 of the complete responses (19%) were from entities not using MSWIN as their primary emergency communications system.

Summary of Survey Responses

Of the 83 entities responding to PEER's survey, overall, they are satisfied with MSWIN, its reliability, infrastructure, coverage, and WCC staff support. 88% of survey respondents reported satisfaction with MSWIN, and over 90% reported satisfaction with the quality of service provided by WCC staff.
17% of respondents reported dissatisfaction with the adequacy of MSWIN's indoor coverage.

The MSWIN User Satisfaction Survey also asked respondents to discuss ways that the network can be improved. Thirty respondents had no suggestions and felt that MSWIN is providing the service that it was built to provide. One respondent stated, "the MSWIN system is meeting a great need in the state of Mississippi."

Survey Respondent's Suggestions for MSWIN Improvement

The following discussion summarizes the ways that respondents said that MSWIN could be improved; however, it is important to note that some of these respondents could be experiencing the reported problems because they are not permanent system users.

Adding Radio Towers to Increase In-building Coverage and Outdoor Coverage within City Limits and Rural Areas

Twenty respondents thought that adding radio towers in their counties would strengthen the network and increase portable radio coverage for their entity.

Working to Lower the Cost of Radios and other Equipment used to Communicate on MSWIN

Local government **budget constraints** and **cost of radios** are the main reasons entities choose not to use MSWIN as their primary emergency communications system.

Survey respondents stated that the high cost of P25-compliant radios is a major impediment to many small-budget entities wanting to join MSWIN. A radio compatible with MSWIN can cost from $1,500 to $4,000. The cost varies by type of user and radio needed; e.g., radios for firefighters are generally more expensive because they have to be able to withstand extreme temperatures. Additionally, some respondents reported that entities do not join MSWIN because of:

- lack of indoor portable coverage;
- fear of being charged a user fee;
- loss of local control over emergency communications; and,
- the purchase of a new emergency communications system by the county prior to MSWIN being built.

Increasing training to teach emergency responders how to operate radios and other equipment on MSWIN

Several survey respondents stated that emergency responders need additional training in order to know how to operate their radios on MSWIN and ensure interoperability. (See discussion of MSWIN training on page 18.)

Increasing the number of WCC staff available to help smaller entities program their radios and utilize MSWIN

Survey respondents felt that WCC did not have an adequate number of technical staff to help smaller agencies program their radios and gain access to MSWIN. There were concerns that only one WCC employee is responsible for providing user IDs and when that person is out of the office it can take weeks for a county to obtain user IDs and gain access to the system. According to one survey respondent, “this provides a single point of failure in the event the employee becomes disabled or resigns.”

Providing outreach to local government entities to encourage use of MSWIN in order to increase communications among emergency responders statewide

Respondents also expressed concern that additional local government entities should be using MSWIN in order to increase communication between emergency responders.

Analysis of WCC's Efficiency in its Expenditure of Public Resources

From inception through July 1, 2019, $437 million in public resources has been invested in MSWIN. ITS requirements for competitive bidding resulted in cost avoidance of $90 million for the state in its turnkey contract for the deployment of MSWIN. The biggest threat to WCC's efficiency is its organizational relationship with ITS, which results in confusion over responsibility and duplication of effort, costing the state at least $168,966 in staffing resources that could be put to other use within ITS.

This chapter includes discussions of:

- Defining efficiency;
- Total public resources invested in MSWIN;
- What WCC has purchased with its public resources;
- Controls over WCC's use of public resources;
- Controls over state agency and local government wireless communications system expenditures;
- MSWIN total expenditures per unit of output;
- Inefficiencies resulting from the organizational relationship between WCC staff and ITS staff; and,
- Options for the organizational location of WCC.

Defining Efficiency

"Efficiency is producing the required outcome with the minimal (or appropriate) amount of resources, time, and cost." Steve Goodrich

MISS. CODE ANN. Section 25-53-171(1) (1972) charges WCC with the responsibility "for promoting the efficient use of public resources" in the execution of its duties and responsibilities.

Merriam Webster defines efficiency as:

> *"the ability to do something or produce something without wasting materials, time, or energy."*

In a May 27, 2015 article in Federal Times on "Defining and achieving efficiency in government," author Steve Goodrich defined efficiency as:

"producing the required outcome with the minimal (or appropriate) amount of resources, time, and cost."

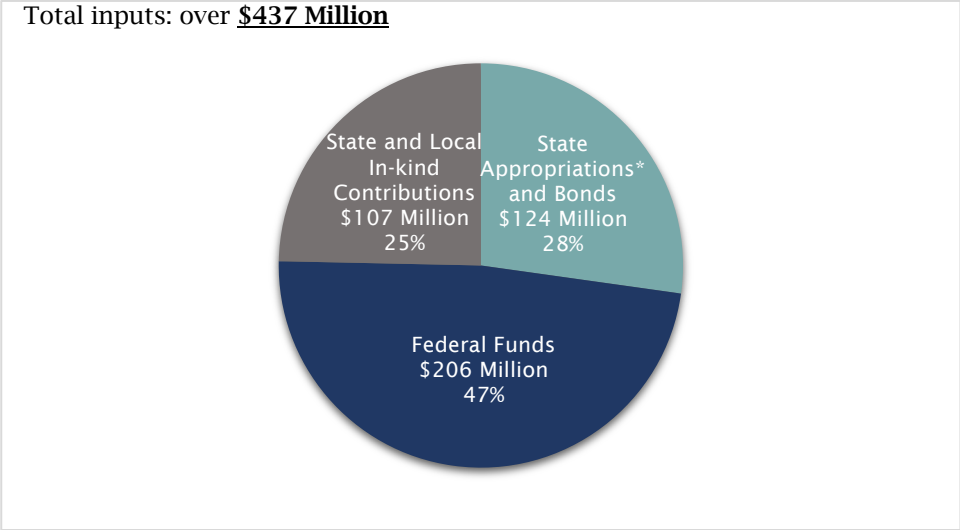
Measuring the efficiency of a state agency requires a comparison of the dollar value of inputs to outputs and outcomes achieved with those inputs. In the case of WCC, inputs include state and federal appropriations, user fees from non-governmental organizations using MSWIN, and the monetary value of in-kind contributions from state and local network users. Outputs include things produced by the network (e.g., minutes of push-to-talk call time). The primary outcome of a public safety communications network such as MSWIN is the value of lives saved and injuries avoided through use of the network. While there is no value-free method for assigning a monetary value to lives saved and injuries avoided, these outcomes are obviously in the interests of the state.

Total Public Resources Invested in MSWIN (Inputs)

As of July 1, 2019, a total of $437 million in public resources, including the value of in-kind contributions, has been invested for the purpose of implementing, maintaining, operating and administering MSWIN.

From inception in 2005 through June 30, 2019, approximately $437 million in revenues and monetized value of in-kind contributions has been invested in the implementation, maintenance, operation and administration of MSWIN, as shown in Exhibit 13 on page 34. From inception, federal funds provided the greatest source of revenue, followed by state appropriations (i.e., general funds and state support special funds) and bond revenues, and the monetized value of state and local in-kind contributions. The following section describes each of these funding sources in greater detail.

Exhibit 13: Total Inputs to MSWIN through July 1, 2019, by Source



*State appropriations include general funds and state support special funds (e.g., capital expenditures).

SOURCE: PEER analysis of documentation provided by WCC.

Federal Funds Totaled $206 Million

From inception through June 30, 2019, WCC had received approximately $206 million (47% of total) in federal grant funds from the following sources:

- $137 million from the Mississippi Interoperable Communications Grant (MICG), administered by the Federal Emergency Management Agency (FEMA);
- $52 million from the Broadband Technology Opportunity Program (BTOP) Grant, administered by the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA); and
- $17 million from the Edward Byrne Memorial Justice Assistance Grant Program, administered by the U.S. Department of Justice, Office of Justice Program's Bureau of Justice Assistance.

State Appropriations and Bonds Totaled $124 Million

From inception through June 30, 2019, WCC received over $67 million (15% of total revenues) in state appropriations (i.e., general funds and state support special funds) and $57 million (13% of total revenues) in state general obligation bond revenues as follows: $20 million in 2007, $35 million in 2009, and $2 million in 2010.

In fiscal years 2015, 2017, 2018, and 2019, WCC's state appropriation was less than the amount requested by the Commission to cover known MSWIN obligations. WCC requested and received deficit appropriations for each of these years. Because the Legislature appropriated the general funds requested by the Commission in FY 2020, it is not expected that WCC will request a deficit appropriation in FY 2020.

Value of State and Local In-kind Contributions Totaled $107 Million

An in-kind contribution is a non-monetary contribution; e.g., radios purchased by local governments for use on MSWIN.

An in-kind contribution is a non-monetary contribution. In the context of MSWIN, state and local government purchases of equipment and infrastructure used in the operation of the network (e.g., radios, consoles, radio towers, base stations) are considered in-kind contributions.

From inception through June 30, 2019, state agencies and local government entities made in-kind contributions to MSWIN valued at $107 million, 25% of total revenues. Eighty percent of the in-kind contributions were made by local government entities. Appendix E on page 65 lists all local government entity and state agency in-kind contributions from April 2005 to July 1, 2019.

It should be noted that WCC's estimate of the value of in-kind contributions is conservative in that it does not include the value of:

- state agency and local entity wireless communication equipment procurements of less than $100,000, because WCC does not require approval or review of these purchases and therefore has no record of them;

- on-site inspection assistance (e.g., checking on alarms at radio tower sites geographically remote from Jackson) provided by local users such as county sheriff's offices; or,

  non-network resources (e.g., staff time, printing, software, office space, equipment storage and transportation) provided to WCC by state agencies).

User Fees Collected from Non-Governmental Organizations Totaled $609,137

MISS. CODE. ANN. Section 25-53-171 (5)(c) (1972), authorizes WCC, in conjunction with ITS, to establish the cost of maintenance and operation of the system and charge subscribers for access and use of the system.

WCC has never charged state agencies, local government entities, and federal and tribal entities a fee to use MSWIN because, as previously discussed, these entities help to fund the system with both dollars (through state and federal appropriations) and the significant value of their in-kind contributions. Further, governmental MSWIN users contend that if WCC were to try to impose a user fee on them, they would withdraw from the network

because of strong feelings that they are already making a significant financial contribution to the network and would not have the additional financial resources needed to pay a user fee.

While WCC does not charge a user fee to governmental entities, it does charge non-governmental organizations (NGOs) on MSWIN a user fee according to the schedule shown in Exhibit 14 below. From FY 2015 to FY 2019, WCC collected $609,137 in user fees from NGOs.

Exhibit 14: MSWIN User Fee Schedule for Non-governmental Organizations (NGOs)

Type of device	Monthly fee charged to non-profit NGOs (per device)	Monthly fee charged to for profit NGOs (per device)
Mobile and portable radios	$30	$35
Base stations	$50	$50
Consoles	$100	$100

SOURCE: PEER analysis of documentation provided by WCC staff.

How WCC has Used its Public Resources (Conversion of Inputs to Outputs)

Since inception WCC has expended approximately $364 million for the deployment, operation, maintenance, and administration of MSWIN.

WCC Total Annual Expenditures from Inception through FY 2019

As shown in Exhibit 15 on page 37, WCC annual expenditures steadily increased from $968,362 in FY 2007, the first year the Commission incurred expenditures, to a high of $86.4 million in FY 2012 as MSWIN was built out to the 97% mobile statewide coverage standard required by the contract with Motorola. In subsequent years, as the infrastructure to operate MSWIN was completed, annual WCC expenditures declined accordingly until FY 2017 and FY 2018 when WCC added three new radio towers and network capacity to improve in-building coverage in specific areas of the state. In FY 2019, MSWIN expenditures totaled $15.5 million.

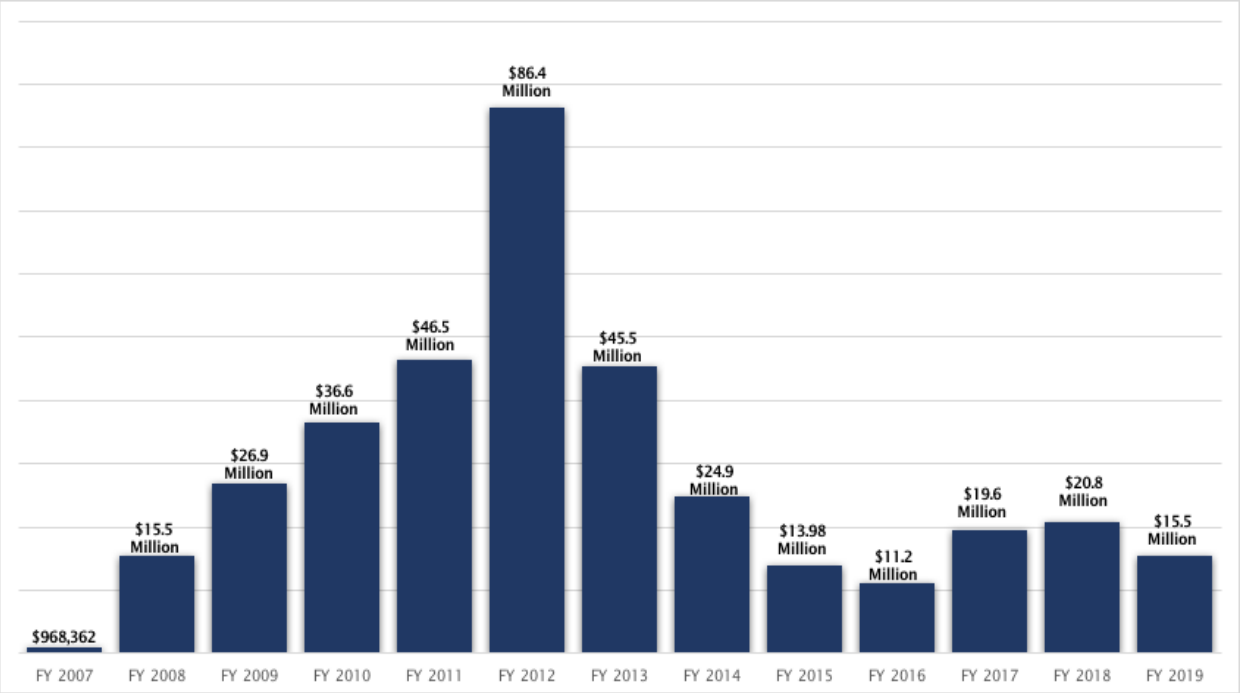
$19.75 Million Loss in Value from Federally Forced Sale of MSWIN Broadband Equipment

One noteworthy example of the inefficient use of public resources during the period of FY 2010-FY 2019 relates to a situation reportedly created by the federal government. During this period, according to WCC staff the Commission expended approximately $20 million in Broadband Technology Opportunity Program (BTOP) Grant[11] funds to proactively add broadband network capacity to MSWIN. The federal government subsequently passed legislation

[11] The NTIA provided approximately $4 billion in BTOP funds to states for projects to expand broadband infrastructure in unserved and underserved areas. .

creating its own national emergency broadband network, FirstNet, and limiting all future expenditures on the buildout of emergency broadband capacity to FirstNet. WCC staff stated that because the broadband equipment that WCC had already purchased was not compatible with the new broadband standards issued by FirstNet, in FY 2018, WCC sold its broadband equipment for scrap for approximately $25,000, a $19.75 million loss in value.

Exhibit 15: Total WCC Expenditures from Inception through FY 2019, by Fiscal Year



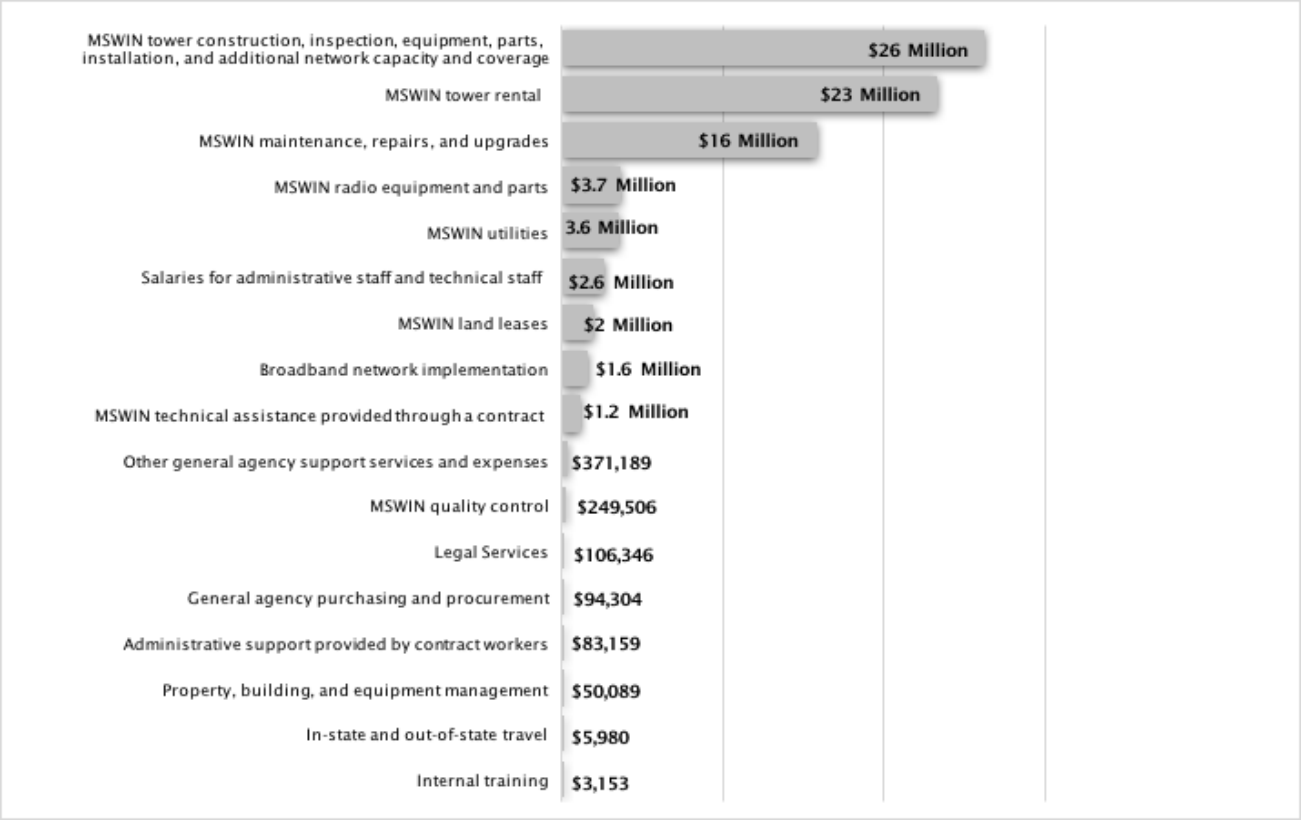
SOURCE: Legislative Budget Office Annual Budget Reports and PEER Analysis of Expenditure Data in MAGIC.

WCC Expenditures, by Category for the Period of FY 2015 through FY 2019

WCC's expenditures for the period of FY 2015 through FY 2019[12] totaled approximately $80.98 million. Exhibit 16 on page 38 details these expenditures, by category. MSWIN tower construction, inspection, equipment parts, installation, and additional network capacity and coverage was the category with the most expenditures ($26 million) followed by tower rental ($23 million), and MSWIN maintenance, repairs and upgrades ($16 million). These three categories of expenditures accounted for 81% of total expenditures during the period.

[12] This information came from MAGIC (Mississippi Accountability System for Government Information and Collaboration) which became operational in FY 2015.

Exhibit 16: Expenditures by Category, for the Period of FY 2015 through FY 2019*



*PEER created these expenditure categories based on expenditure data available in MAGIC.

SOURCE: PEER analysis of WCC's expenditures in MAGIC.

Controls Over WCC's Use of Public Resources

Procurement procedures contained in state law, ITS regulations, and WCC rules and regulations are intended to help ensure that the WCC pays competitive prices for MSWIN equipment and services meeting specified quality and interoperability standards. WCC avoided $90 million in costs by selecting the lower bid to deploy MSWIN.

ITS Regulations Required Competitive Bidding for the Procurement of Services and Equipment Necessary for the Implementation of MSWIN

In accordance with the authority granted in MISS. CODE ANN. Section 25-53-5 (1972), ITS developed the following requirements for the procurement of information technology goods or services exceeding the executive director's approval threshold:

- advertisement for competitive bids once each week for 2 consecutive weeks in a regular newspaper published where the contracting party is located;
- receipt of competitive bids;

- submission of procurement request to ITS three to eight months prior to purchase; and,

- ITS staff and ITS Board approval.

In February of 2006, ITS, as the contracting agent for WCC, issued a Request for Proposals (RFP) for the:

> *"Deployment of a statewide digital trunked land mobile radio system to coordinate the delivery of services to the citizens of Mississippi and enable immediate interoperability among public safety resources in routine and emergency situations."*

Through competitive bidding, WCC avoided **$90 million** in costs on its contract to buildout MSWIN.

The RFP called for "Turnkey Operation" proposals to include the acquisition of certain equipment, software, installation services, technical support, maintenance and training necessary for the implementation of MSWIN.

ITS received 2 bids with the lowest bid of $220.8 million from Motorola Solutions, Inc. ("Motorola"), approximately $90 million less than the only other bid. In June 2007, WCC and ITS entered into a contract with Motorola for the implementation of MSWIN.

WCC Requirements for Advance Approval of Certain Expenditures

MISS. CODE ANN. Section 25-53-171 (7)(a) (1972), requires joint approval of all WCC expenditures by both the commission and ITS, even though ITS is one of sixteen members of the commission. The Executive Director of ITS has designated his Director of Internal Services to carry out this responsibility.

The Commission's bylaws require the advance approval of contractual expenditures greater than $250,000 by ITS and the Commission. The bylaws require advance approval of all other WCC expenditures by ITS and WCC's Executive Officer or designee.

Controls Over State Agency and Local Government Expenditures on Wireless Communications Systems

While WCC has implemented policies and procedures requiring all state agencies and local government entities to obtain approval from WCC's Procurement Review Committee for all wireless communications purchases greater than $100,000, Jackson County recently entered into a $5.8 million contract to build its own emergency wireless communications system without first seeking approval from WCC.

Requirements for Local Government Entities and State Agencies to Obtain Approval for Wireless Communication Purchases from WCC

WCC has statutory sign-off approval authority on all wireless communications systems.

MISS. CODE ANN. Section 25-53-171 (4)(i) (1972) grants WCC authority to have "sign-off approval on all wireless communications systems within the state that are owned or operated by any state or local government entity, agency, or department."

As discussed on page 11, in June 2007, WCC, in conjunction with ITS, entered into an agreement with Motorola for the implementation of MSWIN. In addition to this contract, ITS, in conjunction with WCC, selects the vendors for the Master Cellular Agreement for the procurement of cellular products and services. As of July 1, 2016, the state has cellular agreements with both C Spire and AT&T Mobility. The contracts with both vendors are valid from July 1, 2016 through June 30, 2021. Any state or local government entity, agency, or department within the state of Mississippi may utilize these statewide contracts for wireless communication purchases and is encouraged to do so by WCC. However, they can procure from other vendors, with approval from WCC.

WCC also set cost thresholds for all wireless communication purchases. Appendix F on page 67 shows the cost thresholds and level of approval needed before an entity can make a wireless communication purchase.

From January 2017 to April 2019 WCC approved 38 procurement requests totaling approximately $11 million and only disapproved one procurement request because the equipment was not P-25 compliant and the request failed to provide a solution for interoperability with MSWIN.

Jackson County's Failure to Follow State Law and WCC Wireless Communication Procurement Rules threatens WCC's Approval Authority

As discussed in the following report sections, Jackson County failed to obtain WCC's approval for at least two known emergency wireless communication purchases over the $100,000 cost threshold established by WCC (see Appendix F on page 67).

Jackson County purchased and installed a $546,076 ***microwave network*** *in 2017 without obtaining required approval from WCC.*

In January 2017, without seeking WCC's approval, Jackson County issued an RFP for the installation and testing of a new microwave network. Four months later, the county entered into a $546,076 contract with Communications International (CI), Inc. for the now fully operational microwave network. Staff of Jackson County stated that their legal counsel at the time did not think that it was necessary to obtain WCC's approval because he considered the microwave network a repair of Jackson County's current system that would not be an interoperability issue. WCC Purchasing Guidelines and Procedures, Rule 1.1 gives WCC purview over traditional point-to-point high-speed data communication across physical locations using wireless access points, which includes microwave networks.

Jackson County issued an RFP for a new radio network, signed a $5.8 million contract, and issued a Notice to Proceed without receiving "sign-off" approval from WCC.

In February 2018, Jackson County issued an RFP seeking proposals for a turnkey project to provide the county with a P25-compliant 800 MHz trunked radio network to replace its aging, end-of-life system, and to expand coverage in the county by adding additional infrastructure sites. The county received proposals from three vendors, including Motorola, the state's MSWIN vendor.

On October 18, 2018, during a meeting of the Harrison County 911 Board, which WCC was invited to make a presentation to, WCC was made aware of Jackson County's actions to create a new P25 radio network.

In November 2018, the Jackson County Emergency Communications District (JCECD) Board entered into negotiations with Communications International, Inc., to build the new network. During the same month, WCC contacted Jackson County to remind them of the statutory and regulatory requirements to seek approval for the new network from the commission. WCC also asked the JCECD Board for a meeting to discuss the county's wireless communications needs prior to seeking WCC approval of the project, and to explore ways that WCC could provide technical assistance to the county, including system planning and system design.

In February 2019, after signing a $5.8 million contract with Communications International (CI), Inc., Jackson County submitted an official request to WCC for "sign-off" approval of the project.

Without obtaining approval from WCC, as required by state law, Jackson County executed and delivered the Notice to Proceed to its selected vendor.

On May 14, 2019, without WCC's approval, Jackson County executed and delivered the Notice to Proceed with network construction to CI. As of June 2019, construction on the new network had not yet begun, but CI had completed its initial site visits.

In July 2019, WCC staff provided the JCECD Director with a $4.98 million MSWIN compatible network option for his consideration. According to WCC staff, the option, developed with the assistance of Motorola, was designed to meet all of Jackson County's user needs, while satisfying WCC's responsibility to ensure statewide interoperability.

According to a transcription of WCC Procurement Committee Proceedings on July 11, 2019, Jackson County had not submitted its request to WCC prior to entering into the contract with CI because they were not clear on the meaning of "sign-off" authority and interpreted it to mean that WCC would provide guidance and direction for the system that Jackson County felt best met their needs. This assertion is contrary to the language contained in Section 1.2.2.8, of Jackson County's RFP for the new radio network:

> *"No contract shall be binding on Jackson County until it has been approved by the County's Legal Counsel, the Board of Supervisors and executed by both responsible parties (County and Vendor).* ***Further, the County may be required by state law to present this project award to the Mississippi Wireless Commission for concurrence prior to the execution of a contract with the successful proposer.*** *If such concurrence is withheld, the award may be delayed or cancelled due to procedural issues."*

According to WCC staff, Jackson County was aware of the need to obtain approval from WCC before entering into the contract with CI as evidenced by the fact that over the past fourteen years, Jackson County has submitted at least eight requests to WCC for approval.

During WCC Procurement Review Committee meeting in June and July of 2019, Jackson County stated the following reasons for choosing to build its own network rather than join MSWIN:

- MSWIN did not provide a true technical description of meeting the county's network communication needs;
- The county already supports MSWIN interoperability by using the network's special event channels;
- The new radio system would allow MSWIN users onto its network through **patching** (WCC staff stated that the proposed patching created a high risk of MSWIN degradation as well as a risk of creating confusion in communications with Jackson County and hindering statewide interoperability.);
- The two MSWIN tower sites in Jackson County are insufficient to support all of the county's network users (approximately 2,500) and in-building coverage needs;
- Jackson County did not want to pay user fees and was concerned that the county could be charged user fees for accessing MSWIN in the future; and,
- Implementing its own system allows Jackson County to react rapidly to the needs of the users in the county.

As reported in the Commission's September 5, 2019 meeting minutes, Jackson County staff stated that the MSWIN option did not cover all the points in its RFP and, therefore, did not meet its needs. WCC staff opined that the level of interoperability that would exist between the system proposed by Jackson County and other public safety wireless communications systems would not be adequate. At the conclusion of this meeting, WCC voted to disapprove Jackson County's procurement request, noting both the lower cost of the MSWIN proposal for the county as well as the Commission's statutory responsibility to provide interoperability to all public safety personnel in the state.

MSWIN Marginal Expenditures Per Unit of Output

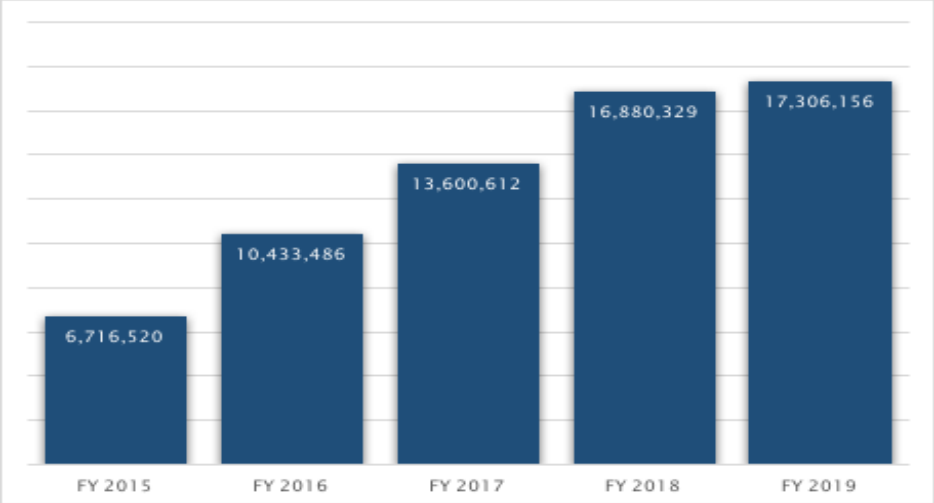
For the period of FY 2015 through FY 2019, MSWIN's marginal expenditures totaled 53 cents per minute of push-to-talk call time.

The primary measurable output of MSWIN is minutes of push-to-talk air time. In an effort to examine WCC's efficiency, the following sections discuss MSWIN expenditures per minute of MSWIN push-to-talk air time. PEER was unable to obtain comparable data from other states, because of variability in costs and phases of network implementation.

Marginal Expenditures per Minute of MSWIN Push-to-talk Public Safety Air Time

As shown in Exhibit 17 below, during the period of FY 2015 through FY 2019, annual minutes of push-to-talk air time on MSWIN increased from 6,716,520 minutes in FY 2015 to 17,306,156 minutes in FY 2019.

Exhibit 17: Minutes of MSWIN Push-to-talk Air Time, by year for FY 2015 through FY 2019



SOURCE: PEER analysis of data provided by WCC.

PEER calculated the marginal total expenditures per minute of MSWIN push-to-talk air time during the period of FY 2015 through FY 2019 to be $0.53.

Inefficiencies in the Organizational Relationship between WCC and ITS

The unique collaborative role between ITS and WCC has resulted in confusion over responsibility and duplication of efforts costing ITS at least $168,966 annually in staffing resources that could be put to other use by the Department.

State Law Creates a Unique Collaborative Role for ITS in the Operations of WCC

WCC's enabling legislation creates a unique collaborative role for ITS in the operations of the WCC. In several instances, the law requires WCC to act "in conjunction with" and "in consultation with" ITS in carrying out the Commission's responsibilities. Also, MISS. CODE ANN. Section 25-53-171 (1972) requires ITS to administer revenues to and expenditures from the "Integrated Public Safety Communications Fund," a special fund created for the collection of WCC revenues from all sources. State law also requires that the commission and ITS jointly approve all expenditures from the fund.

Individuals involved with the creation of WCC stated that their intent was to maximize financial resources available to build-out MSWIN by using existing staff in commission-member agencies to provide all administrative support to the commission. These same individuals stated that consideration was given to several agencies (e.g., Department of Public Safety, Mississippi Emergency Management Agency, Department of Information Technology Services) for functioning as the lead support agency in the WCC's operations. The bill drafters reportedly decided upon ITS because its Executive Director at the time was very interested in supporting the implementation of MSWIN and believed that his agency had the necessary staff and expertise to support the creation and ongoing operation of the network. Local government entities reportedly favored the statutory designation of ITS in this role because, in addition to their expertise in telecommunications, ITS would not be a MSWIN user and therefore could function as a neutral party in its administration and oversight of the network.

The Statutory Collaborative Role Between ITS and WCC Became Problematic after WCC Began Hiring its Own Staff in FY 2009

From Inception through FY 2008, ITS Provided All Staff Support for WCC

MISS. CODE ANN. Section 25-53-171 (6) (1972) authorizes Commission members to use their own agency staff to carry out WCC's administrative and technical responsibilities.:

> *"The Department of Transportation, the Department of Public Safety and other commission members may provide to the Commission on a full-time or part-time basis, the personnel and technical support necessary and sufficient to effectively and efficiently carry out the requirements of the law."* From its inception in FY 2005 until the beginning of FY 2009, employees of DPS, MDOT, and ITS functioned as WCC's staff at no charge to the Commission. According to WCC staff, during this period, DPS hired a radio **frequency** design engineer experienced in the buildout of wireless emergency communications networks to function as the Commission's technical advisor. According to *Understanding Wireless Communications in Public Safety: A Guidebook to Technology, Issues, Planning, and Management,* when implementing an emergency communications system, a dedicated expert, such as a technical consultant, can provide the help needed to create

MISS. CODE ANN. Section 25-53-171 (1972), authorizes WCC members to provide full-time or part-time staff to the commission in order to carry out the requirements of the law.

an RFP, develop budgetary cost estimates, conduct an inventory, and assist in overall project management for the system. Also, according to WCC staff, MDOT contracted with an engineering firm to provide quality assurance and quality control services for the deployment of MSWIN.

During this period, there was no duplication of effort between WCC and ITS staff because ITS provided all of the Commission's administrative and financial support, at no charge; i.e., there was no WCC executive director or staff.

WCC Began hiring Full-time Staff on July 1, 2008

The first full-time employee for WCC was hired in 2008, three years after its inception.

During its 2008 Regular Session, the Legislature included in ITS's appropriations bill (Senate Bill 3158) the authority for WCC to fill four full-time, time-limited[13] positions. In the hiring of its own staff, WCC is subject to the authority of the Mississippi State Personnel Board (MSPB) and must follow its staffing and salary policies.

During its 2014 Regular Session, the Legislature expanded WCC's staffing authority to fill a total of ten full-time permanent positions (Senate Bill 2905, ITS's FY 2015 appropriation bill).

As of July 1, 2019, WCC had five filled full-time positions and five vacant positions. Of the five current full-time employees, who have all been with the agency for at least four years:

WCC Staffing Facts

- 3 full-time administrative staff
- 2 full-time technical staff
- 2 contract workers providing administrative support

- Three are responsible for administrative tasks; e.g., executive management, accounting, budgeting, human resources, general support; and,
- Two are responsible for technical issues related to operation of the network; e.g., comprehensive planning, coordination, tracking of maintenance and repairs, working with the vendor (Motorola) to ensure that any network problems are corrected, providing support and coordination before, during, and following any incident in the state potentially impacting the communication network.

In FY 2020, WCC plans to use its $344,634 in state funds appropriated to fill vacant positions to hire three technical and two administrative staff.

In addition to its full-time staff, WCC employs two part-time contract workers to assist with administrative functions; e.g., reviewing local procurement requests, managing federal grants, managing WCC's assets and MOUs. Also, WCC contracts with entities to continue MSWIN technical advisory, quality control, and quality assurance services.

[13] Positions authorized by the Legislature can either be permanent or time-limited. A time-limited position is temporary, based on the continued availability of funding.

In addition to WCC's full-time staff, the following commission member agencies provide the following services and administrative and technical staffing support to the Commission at no charge:

MDOT

- Printing of WCC materials (the Director of MDOT's Law Enforcement Division is the current Commission Chair);
- Technical support of WCC office software;

MEMA, and Mississippi Departments of Public Safety and Wildlife, Fisheries, and Parks and the Mississippi Military Department (Adjutant General)

- Technical support and assistance with the deployment of MSWIN assets, as needed, during state emergencies;[14] and,

ITS

- Processing of payroll, contracts, travel, recruitment, purchasing, budgeting, and general accounting by 2.78 FTEs at an annual cost of $168,966.

Problems in the Current Organizational Relationship Between WCC Staff and ITS Staff

When WCC began hiring its own full-time staff, the following problems arose between staff of WCC and ITS:

- Confusion over authority and responsibility; and,
- Duplication of effort.

The following report sections discuss each of these problems.

Confusion over Authority and Responsibility

While ITS is statutorily responsible for administering the fund containing WCC revenues from all sources, it believes that it lacks authority over WCC staff because WCC's Executive Officer reports to the Commission, not to the Executive Director of ITS. Nevertheless, as discussed in the next report section, ITS has always processed and continues to process all of WCC's transactions in the state's online systems.

The Commission's bylaws state that WCC's Executive Officer is responsible for the administration of the Commission, including:

- executing policies;
- co-signing all contracts and other documents approved by WCC;
- authorizing and certifying payroll, requisitions, and other documents relating to its financial affairs; and,

[14] UMMC's Center for Emergency Services and subject matter experts from local government entities on MSWIN also provide technical support during emergencies.

- appointing, removing, disciplining, and supervising personnel.

However, as explained in the next section, ITS, as WCC's fund administrator, is also providing many of these administrative functions for WCC, causing confusion over authority and responsibility, as well as duplication of effort.

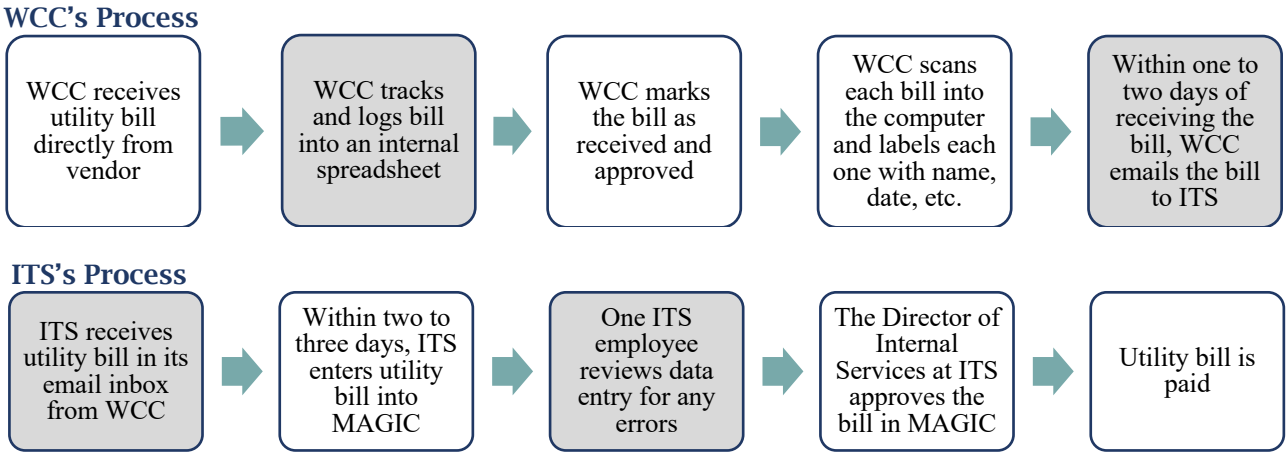
Duplication of Effort Resulting in Inefficient Use of Public Resources

ITS is expending at least **$168,966** annually in state funds on duplicated administrative efforts.

WCC staff does not have access to MAGIC, SPAHRS[15], or MSPB's online employee recruitment system. In its role as WCC fund administrator, ITS requires WCC staff to send all of the procurement, payroll, and other information that they would otherwise directly enter into the appropriate state system to ITS staff for processing. Each month, ITS and WCC process over 180 WCC invoices, including approximately 140 invoices for utility bills for radio towers. According to ITS, 60% to 65% of the invoices that it processes are for WCC at an estimated annual staff cost of $168,966.

As shown in Exhibit 18 below, this arrangement results in unnecessary steps (shown in grey) that both waste staff time and delay processing. Also, according to WCC staff, there have been times when ITS failed to pay utility bills because they were "lost" in ITS's email inbox.

Exhibit 18: Flowchart of the Process for Receiving and Paying WCC Utility Bills for both ITS Staff and WCC Staff



Source: PEER analysis of information provided during interviews with WCC and ITS staff.

[15] SPAHRS is Mississippi's Statewide Payroll and Human Resource System, an integrated mainframe-based, centrally controlled enterprise payroll and human resource system.

A similar process exists for the processing of all WCC expenditures including payroll and travel and for executing the commission's budget and recruitment responsibilities. A brief explanation of each process, as explained by WCC, is detailed below.

Payroll

In order to process payroll, WCC staff fill out paper timesheets that are approved and signed by WCC's Executive Officer each month and then forwarded to ITS for input into SPAHRS. ITS staff prints off the information that it entered into SPAHRS and sends it back to WCC's Administrative Officer for review. When satisfied as to its accuracy, WCC's Executive Officer or Administrative Officer signs the timesheet as entered into SPAHRS and sends it back to ITS for final approval. According to WCC staff, this process is unnecessarily inefficient.

Travel

WCC staff is required to complete DFA's travel authorization form for in-state and out-of-state travel. After WCC's Executive Officer reviews and authorizes the travel, WCC's Administrative Officer sends the paperwork to ITS. ITS reviews and makes the final authorization on the request for travel reimbursement.

Budget

In order to create WCC's budget, ITS sends WCC a spreadsheet in May of each year with the Commission's actual expenditures to date (which does not reflect the Commission's full fiscal year expenditures). WCC's Administrative Officer uses this information as well as ITS's appropriation bill to estimate and determine its budget request for the next fiscal year. WCC staff presents the budget request to the Commission for approval. After approval from the Commission, WCC creates the narrative and decision units, and then sends the information to ITS for review. ITS reviews, may make changes to wording, and sends a revised budget request back to WCC. Once WCC and ITS have come to an agreement on the content of the budget request, ITS enters the request into the Legislative Budget Office's budget request system. WCC does not have access to the system and all communications with the budget analyst are handled by ITS staff.

Recruitment

In order to recruit to fill a vacant position, WCC's Administrative Officer prepares an email for ITS's Chief Administrative Officer (CAO), including the job title and duties and responsibilities of the position. ITS's CAO is responsible for communicating with MSPB to post the position on its website. After the position has been posted, MSPB sends the list of applicants to ITS's CAO, who then forwards the information to WCC's Administrative Officer. In FY 2019, WCC advertised positions on other job recruitment sites, after obtaining approval from ITS.

Possible Solutions to WCC/ITS Organizational Problems

Because the current relationship between WCC staff and ITS staff is not working, it is reasonable to consider other organizational arrangements and locations for WCC. The following report sections discuss the location of responsibility for wireless emergency communications in other states, followed by a listing of options for Mississippi's WCC.

Location of Responsibility for Wireless Emergency Communication in Other States

As shown in Exhibit 19 below, as of July 1, 2019, only six states, including Mississippi, locate primary responsibility for wireless emergency communication in a department of information technology. The majority of states (forty total) locate this responsibility with some variation of their departments of public safety, emergency management, and homeland security.

Only one state, Utah, has established an independent state agency to carry out its emergency communication function. The Utah Communications Authority is responsible for:

- operation of Utah's emergency land mobile radio system;
- statewide interoperability;
- management of the 911 program, including Next Generation 911; and,
- FirstNet coordination.

Exhibit 19: Count of Organizational Location, by Type of Department, for Wireless Emergency Communication Entities in the United States as of July 1, 2019

Type of Department	Number of States
Public Safety	18
Emergency Management	11
Emergency Management and Homeland Security	8
Information Technology*	6
Public Safety and Homeland Security	3
Defense/Military Affairs/Adjutant General	3
Standalone Wireless Communications Entity	1
Transportation	1

*Includes Mississippi.

SOURCE: PEER survey of 50 states and the District of Columbia.

Options for Organizational Placement of WCC

PEER identified the following four options for organizational placement of WCC:

- Option 1: Stand-alone agency with current responsibilities
- Option 2: Stand-alone agency with responsibility for all emergency communications similar to the Utah Communications Authority; i.e., MSWIN, Commercial Mobile Radio Service Board (E911 and Next Generation 911), FirstNet coordination, interoperability coordination
- Option 3: Combine stand-alone authority with physical co-location at MEMA
- Option 4: Assigning a different state agency such as MEMA or MDOT to provide administrative support, including office space to WCC at no additional cost

It is important to note that while Option 2 would involve the transfer of staffing and funding resources from entities currently performing other emergency communications functions, none of these options should increase state administrative expenditures. All of these options would require changes to WCC's enabling legislation. The second option would also require changes to MISS. CODE ANN. Section 19-5-333 creating the Commercial Mobile Radio Service Board.

The following sections discuss the advantages and disadvantages (where known) of each option.

Option 1

Advantages:

- Elimination of administrative inefficiencies vis a vis ITS
- Elimination of confusion over authority and responsibilities if the statutory language granting ITS responsibilities beyond its role on the Commission is removed.

Option 2

Advantages:

- Responsibility over the state's emergency communications would be unified. WCC staff is already responsible for FirstNet coordination and interoperability coordination; however, current responsibility for E911 is at the local level. The best way to transition to NextGen911 requires further study.

Option 3

Advantages:

- The missions of WCC and MEMA are closely aligned. MEMA's mission is to safeguard Mississippi and her citizens by fostering a culture of preparedness, executing timely responses during a disaster, and quickly restoring quality of life post event. MEMA plans and prepares for emergency scenarios, responds to and supports local Emergency Management Authorities during emergency events, and coordinate and resources recovery efforts in the wake of a disaster.

Option 4

Advantages:

- MDOT is already providing support to WCC staff, as noted on page 37.

- MEMA: see Option 3.

Disadvantages:

- Possibility of the same confusion over authority and responsibility as under the current organizational arrangement with ITS. To avoid this problem, the entities should enter into a formal Memorandum of Understanding (MOU) delineating each of their responsibilities, or the Legislature could eliminate any doubts about the relationship of the Commission and any other agency to which its responsibilities are transferred by clearly addressing such in legislation.

Recommendations

1. The Legislature should consider the options identified by PEER for the organizational placement of the Wireless Communications Commission and its statutory responsibilities.
    a. If the Legislature chooses to make the Commission a stand-alone agency, the Legislature should amend relevant portions of MISS. CODE ANN. Section 25-53-171 (1972) that require ITS staff to provide day-to-day administrative support to the Commission. (While at inception, MISS. CODE ANN. Section 25-53-171 (6) authorized member agencies to provide personnel and technical support to the WCC so that maximum funds could be available for the deployment of MSWIN, the Commission has now evolved and has its own full-time staff as provided by the Legislature. The Commission would not need assistance from ITS staff to provide day-to-day administrative support.) In addition, WCC staff should consult with the Mississippi State Personnel Board to determine what personnel qualifications are necessary to perform the Commission's statutory responsibilities and to develop position descriptions for the ten positions authorized by the Legislature.
    b. If the Legislature does not choose to make the Commission a stand-alone agency, it should consider other appropriate state agencies that could house and support the WCC functions and missions—e.g., Mississippi Emergency Management Agency, Department of Public Safety, and the Mississippi Department of Transportation. In addition, the Legislature should amend MISS. CODE ANN. Section 25-53-171 (1972) to affect this organizational placement.
    c. If the Legislature chooses neither recommendation "a" nor "b," then the Executive Officer of WCC and the Executive Director of ITS should jointly request the state's Attorney General to opine on the responsibilities of each entity. If the Attorney General opines that both have joint responsibility for the system, WCC and ITS should enter into a formal Memorandum of Understanding clearly setting out the legal division of responsibilities between the two entities.
2. In order to clarify WCC's authority over the procurement of wireless communications systems by state and local government entities, the Legislature should amend MISS. CODE ANN. Section 25-53-171 (4)(i) (1972) by deleting the language requiring the Commission's "sign-off approval" of such systems and inserting the requirement that state and

local government entities receive the Commission's "prior-authorization" for the procurement of wireless communications to match the language in WCC's Purchasing Guidelines and Procedures.

3. In conjunction with its MSWIN users, the Wireless Communication Commission should continue to expand the coverage of the network as needed and justified in relation to its cost and the number of users who would be served.
4. The Wireless Communication Commission should monitor the percentage of busies by individual towers in order to identify any network performance issues at the local level that need to be resolved in order to improve the network's performance.
5. In order to better ensure MSWIN interoperability, the Wireless Communication Commission staff should:
    a. continue to expand and develop a formal training regimen and schedule to ensure that all MSWIN users have adequate knowledge of the effective use of the network;
    b. maintain an accurate list of MSWIN users and their contact information; and
    c. conduct a survey, at least annually, of state, local, and federal MSWIN users to identify any administrative or operational issues that need to be addressed.
6. Because MSWIN user membership is voluntary, the Wireless Communication Commission staff should develop a formal strategy to explain the benefits of user membership to entities not currently members of MSWIN so that the network would become their primary method for emergency communications. WCC staff should continue their efforts to work closely with officials in Harrison and Jackson counties to resolve any issues that have prevented the counties from becoming a part of the MSWIN network.
7. For possible investigation and action, the Wireless Communication Commission should refer to the Mississippi Office of the State Auditor for the matter of Jackson County attempting to procure a microwave network and a new radio network without the approval of the Commission as required by MISS. CODE ANN. Section 25-53-171 (4)(i) (1972).
8. Through additional funding sources or vendor assistance, the Wireless Communication Commission staff should continue to explore options to make P25-compliant push-to-talk radios more affordable to entities with limited financial resources that have prevented them from joining the network.

Appendix A: Glossary of Wireless Emergency Communication Terms

Base station radios
Base station radios are located in fixed positions, such as public safety answering points or dispatch centers, and tend to have the most powerful transmitters.

Broadband
Broadband is a descriptive term for evolving digital technologies that provide consumers with a signal switched facility offering integrated access to voice, high-speed data service, video-demand services, and interactive delivery services.

Channel
A single unidirectional or bidirectional path for transmitting or receiving, or both, of electrical or electromagnetic signals.

Commercial services
Communications services (e.g., cellular telephone and paging communications companies) run by private companies. Many public safety agencies use commercial services in their day-to-day operations.

Communications system
A collection of individual communications networks, transmission systems, relay stations, tributary stations, and data terminal equipment usually capable of interconnection and interoperation to form an integrated whole. Note: The components of a communications system serve a common purpose, are technically compatible, use common procedures, respond to controls, and operate in unison.

Coverage
The geographic area included within the range of a wireless radio system.

Dead spots (or zones)
The area, zone, or volume of space that is within the expected range of a radio signal, but in which the signal is not detectable and therefore cannot be received. Common causes of dead spots include depressions in the terrain and physical structures.

Emergency communications
The means and methods for exchanging communications and information necessary for successful incident management.

Emergency response providers (emergency responders)
The Homeland Security Act of 2002 defines emergency response providers as Federal, State, and local government and non-governmental emergency public safety, fire, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities.

Federal Communications Commission (FCC)
An independent federal agency that regulates U.S. broadcast media and communications markets, as well as local and state radio spectrum needs.

First Responder Network Authority
An independent authority within the National Telecommunications and Information Administration that is responsible for ensuring the building, deployment, and operation of the first high-speed, nationwide public safety broadband network.

Frequency
The geographic area included within the range of a wireless radio system.

Frequency bands
Frequency bands where land mobile radio systems operate in the United States, including the following: High HF (25-29.99 MHz), Low VHF (30-50 MHz), High VHF (150-174 MHz), Low UHF (450-470 MHz), UHF TV Sharing (470-512 MHz), 700 MHz (764-776/794-806 MHz), and 800 MHz (806-869 MHz).

Infrastructure
When relating to radio communications systems, the hardware and software needed to complete and maintain the system.

Integration
The ability to access and exchange critical information at key decision points throughout the enterprise.

Interoperability
The ability of public safety responders to share information via voice and data communications systems on demand, in real time, when needed, and as authorized. Day-to-day interoperability allows users in areas of concurrent jurisdiction to monitor each other's routine communications. This minimizes the need for dispatcher-to-dispatcher interaction in exchanging information among field units. Interoperability is difficult to implement unless all equipment operates in the same frequency band and within the same type of infrastructure.

Interoperability Continuum
A tool for improving public safety communications and interoperability. This tool was established to depict the core facets of interoperability according to stated needs and challenges of the public safety community and will aid public safety practitioners and policy makers in their short- and long-term interoperability efforts.

Land Mobile Radio (LMR)
A terrestrially-based radio system that allows for wireless communications between base stations and land mobile stations (mobile or portable radios) or between land mobile stations.

Marginal Expenditure
A marginal expenditure is the additional expenditure associated with one more unit of a good.

Megahertz (MHz)
A unit of frequency denoting one million hertz (Hz). A hertz is a unit of frequency in cycles per second. A hertz is one cycle per second.

Microwave Network
A microwave network is a communications system that uses a beam of radio waves in the microwave frequency range to transmit information between two fixed locations on the earth.

MSWIN

MSWIN (Mississippi Wireless Information Network) is a 700 MHz voice and data network that utilizes trunked technology to provide statewide interoperability in digital clarity to its users throughout the state of Mississippi.

Mobile radios

These are often located in vehicles and use the vehicle's power supply and a larger antenna, providing a greater transmission range than handheld portable radios.

Network

Any connection of two or more computers that enables them to communicate. Networks may include transmission devices, servers, cables, routers, and satellites. The phone network is the total infrastructure for transmitting phone messages.

Operability

The ability of emergency responders to establish and sustain communications in support of mission operations.

Patch

A control center subsystem that permits a mobile or portable radio on one channel to communicate with one or more radios on a different channel through the control center console.

Portable handheld radios

These are carried by public safety personnel and tend to have a limited transmission range.

Project 25 (P-25) Standards

Project 25 (P-25) defines a suite of standards for a digital wireless radio communications system to be used by the emergency response community. To allow multiple vendors to supply the products and services to the communications system users, the Project 25 system has eight interfaces for which standards are or will be developed. Each interface allows the products of one manufacturer to interoperate with products of other manufacturers by defining the signaling and messages that cross the interface. For example, an agency could purchase P-25 portable radios from one or more vendors, the base stations from others, and dispatch consoles from other vendors. P-25 radios are encryption and GPS capable, upgradeable via software enhancements, and re-programmable over the air.

Public safety answering point (PSAP)

The facility and staff that handles emergency calls from the public and communication with emergency management/response personnel; also referred to as agency or interagency dispatch centers, 9-1-1 call centers, emergency control or command dispatch centers.

Public safety service providers

Persons who perform emergency first response missions to protect and preserve life, property, and natural resources and to serve the public welfare through federal, state, or local governments as prescribed by law. Public safety service providers also include nongovernment organizations that perform public safety functions on behalf of the government. For example, a number of local governments contract with private groups for emergency medical services.

Public safety support providers
Includes those whose primary mission might not fall within the classic public safety definition, but whose mission may provide vital support to the general public and/or the public safety official (e.g., transportation or public utility workers).

Push-to-talk Radio
Push-to-talk, also known as press-to-transmit, is a method of having conversations or talking on communication lines, including two-way radios, using a momentary button to switch from voice reception mode to transmit mode. WCC tracks the number of push-to-talks as a measure of system usage. In its calculation, each press of the button counts as a push-to-talk and a typical time frame is 10 to 12 seconds per push. A push-to-talk conversation can involve several presses of the button.

Radio cache
A portable or permanent storage facility for radios.

Radio channel
An assigned band of frequencies sufficient for radio communication. The bandwidth of a radio channel depends upon the type of transmission and the frequency tolerance. A channel is usually assigned for a specified radio service to be provided by a specified transmitter.

Radio Frequency (RF)
Any frequency within the electromagnetic spectrum normally associated with radio wave propagation.

Reliability
Achieved in public safety land mobile radio systems through equipment redundancy and minimizing single points of failures through careful system design. System operators stock spare parts, and in some cases, transportable backup systems to restore system failures that do occur. Reliability must be considered at the earliest stages of system design.

Redundancy
Additional or alternate systems, sub-systems, assets, or processes that maintain a degree of overall functionality in case of loss or failure of another system, sub-system, asset, or process.

Repeaters
Repeaters are used to increase the effective communications range of handheld portable radios, mobile radios, and base station radios by retransmitting received radio signals.

Shared channels
One of several means of achieving technical interoperability in which cooperating agencies designate specific, often dedicated, radio channels for interagency use. Most public safety radio bands have designated shared frequencies that are often used, though the term applies generally to any channels adopted for interagency communications.

Shared system
A communications system developed by two or more different entities (e.g., local and state law enforcement agencies) to share the effort of system development, maintenance, and operations. Benefits of shared systems include lower costs, widespread interoperability, community interaction, and shared management and control.

Signal

The detectable transmitted energy that carries information from a transmitter to a receiver.

Site on Wheels

Radio repeater sites on wheels can be used to restore the wide area functionality of the system infrastructure anywhere in the state during emergencies.

Statewide Communication Interoperability Plan (SCIP)

Stakeholder-driven, multi-jurisdictional, and multi-disciplinary statewide plans that outline and define the current and future vision for communications interoperability within the State or territory. The Statewide Communications Interoperability Plan is a critical strategic planning tool to help States prioritize resources, establish and strengthen governance, identify future technology investments, and address interoperability gaps.

Statewide Interoperability Coordinator

The Statewide Interoperability Coordinator serves as the State's single point of contact for interoperable communications and implements the Statewide Communication Interoperability Plan.

Talkgroup

A talkgroup refers to a digitally assigned user-group channel on a trunked radio system.

Telemetry

Telemetry is the collection of measurements and other data at remote or inaccessible points and their automatic transmission to receiving equipment for monitoring. FirstNet will use telemetry to allow emergency medical personnel to place sensors on a patient during an event and transmit vital signs to the nearest hospital. Additionally, temperature sensors from firefighter devices generate a heat map of a building interior, allowing civil engineers to determine the structural integrity of the building.

Trunked radio system

A system that integrates multiple channel pairs into a single system. When a user wants to transmit a message, the trunked system automatically selects a currently unused channel pair and assigns it to the user, decreasing the probability of having to wait for a free channel for a given channel loading.

SOURCE: The U.S. Department of Justice Office of Community Oriented Policing Services' Technical Guide for Communications Interoperability, Homeland Security's National Emergency Communications Plan, and documentation provided by the Wireless Communication Commission.

Appendix B: Local Government Entities on MSWIN by County and Total Number of Devices as of July 1, 2019

Adams County — **212 devices**

County EMA/ Sheriff; Natchez PD

Alcorn County — **158 devices**

County EMA/Sheriff; Corinth PD; Farmington PD

Amite County — **135 devices**

County EMA/Sheriff; Liberty PD

Attala County — **3 devices**

E-911 Center*

Benton County — **53 devices**

Ashland PD*; County Constables/Coroner/EMA/Sheriff; Hickory Flat PD; Snow Lake Shores PD

Bolivar County — **395 devices**

County EMA/Fire Dept./Road and Maintenance/Sheriff, City of Boyle; Cleveland Fire Dept./PD/Public Works/Engineering/Planning and Development; Mound Bayou; Rosedale PD; Rose PD; Shaw PD, Shelby PD

Calhoun County — **78 devices**

Bruce PD; Calhoun City*; County Health Services/Sheriff; Derma*; Vardaman

Carroll County — **37 devices**

County EMA/Sheriff

Chickasaw County — **6 devices**

County EMA*/Sheriff*

Choctaw County — **11 devices**

EMA*

Claiborne County — **115 devices**

County EMA/Sheriff/Fire Dept./Public Transit

Clarke County — **108 devices**

County EMA/Sheriff; Enterprise*; Quitman

Clay County — **212 devices**

County EMA/Sheriff; West Point Public Works

Coahoma County — **270 devices**

Clarksdale Municipal School District/PD; County EMA/Fire Dept./School District/Sheriff; Friars Point; Jonestown

Copiah County — **257 devices**

County EMA/Medical Center/Sheriff; Crystal Springs PD/Fire Dept./Volunteer Fire Dept.; Hazlehurst PD/Fire Dept.; Wesson PD

Covington County — **243 devices**

County EMA/Sheriff; Collins PD; Seminary PD

DeSoto County — **1,640 devices**

EMA/EMS/Emerg. Commun. District/Sheriff/Fire Dept.; Hernando; Horn Lake; Olive Branch; Southaven; Walls

Forrest County — **2,033 devices**

Brooklyn Volunteer Fire Dept.; County Sheriff/Road Crews/Supervisors/Public Works/EMA/Emergency Management District; Hattiesburg PD/Fire Dept./ Water Dept./ Public Works/Zoo/School District; Carnes Volunteer Fire Dept.; Dixie Volunteer Fire Dept.; Macedonia Volunteer Fire Dept.; McLaurin Volunteer Fire Dept.; North Forrest Volunteer Fire Dept.; Rawls Springs Volunteer Fire Dept.; Sunrise Volunteer Fire Dept.; Petal PD/Fire Dept.;
Forrest General Hospital

Franklin County — **45 devices**

County Sheriff/Coroner/Fire Dept.;
Bude PD; Roxie PD;
Meadville PD; Rural Rapid Response Ambulance

George County — **119 devices**

County Sheriff/School District; Lucedale PD/Fire Dept.

Greene County — **77 devices**

County EMA/Sheriff; Leakesville PD

Grenada County — **130 devices**

County Sheriff/Firefighter's Assn./EMA; City of Grenada/School District

Hancock County — **986 devices**

County EMA/Volunteer Fire Dist./Sheriff/County Schools; West Hancock Co. Fire Dept.; Bay St. Louis and Waveland Schools; Bay St. Louis PD; Diamondhead PD; Waveland PD

Harrison County — **650 devices**

County EMA*/Sheriff*/Emergency Communications*/Fire Dept.*; Gulfport Fire Dept.*; Gulfport PD*; D'Iberville Fire Dept.*/PD*; Biloxi Fire Dept.*/PD*;Pass Christian Fire Dept.*/PD*; Long Beach Fire Dept.*/PD*; University of Southern MS - Gulf Park Campus Security*

Hinds County — **3,391 devices**

County EMA; Byram PD/Fire Dept./Volunteer Fire Dept./Raymond Police Dept.; JPS District/Campus Enforcement; City of Jackson; Jackson Municipal Airport Authority; Clinton

Holmes County — **14 devices**

County EMA

Humphreys County — **34 devices**

County EMA*

Issaquena County — **12 devices**

County EMA*/Sheriff*

Itawamba County — **259 devices**

County Sheriff; Fulton EMA/Fire Dept./PD; Mantachie; Tremont Fire Dept.

Jackson County — **77 devices**

County EMA*/Sheriff*/Fire Dept.*/E-911*; Gautier*; Moss Point Fire Dept.*; Ocean Springs Fire Dept.*; Pascagoula Fire Dept.*; Gulf Park Estates Fire Protection District*

Jasper County — **252 devices**

County EMA/Sheriff; Heidelberg; Bay Springs

Jefferson County — **46 devices**

County EMA/Sheriff; Fayette

Jefferson Davis County — **55 devices**

County Sheriff/EMA; Prentiss PD/ Fire Dept.; Bassfield PD*/ Fire Dept.*

Jones County — **1,293 devices**

County EMA/Sheriff; Laurel; Ellisville; Sandersville; Soso; Pine Belt Airport; Ellisville State School

Kemper County — **53 devices**

County EMA/Sheriff

Lafayette County — **555 devices**

Oxford EMA/Fire Dept.; County EMS/Fire Dept.

Lamar County — **481 devices**

County EMA/Sheriff/Fire Dept./Schools; Pine Ridge Fire Dept.; Purvis PD; Sumrall PD; Lumberton PD

Lauderdale County — **8 devices**

County EMA/EMS District; Meridian Public Safety*

Lawrence County — **69 devices**

County EMA/Sheriff; Monticello PD

Leake County — **8 devices**

County Sheriff*

Lee County — **1,486 devices**

County EMA/Sheriff/Board of Supervisors/Agri-Center/Schools/Utilities/Road/Fire Dept./E-911; Tupelo PD/Fire Dept./Public Works/Public Schools/Administration; Baldwyn; Guntown; Saltillo; Plantersville; Verona; Shannon; Nettleton; Belden Volunteer Fire Dept.; Cedar Hill Volunteer Fire Dept. Mooreville Volunteer Fire Dept.; Palmetto Volunteer Fire Dept.; Pratts Friendship Volunteer Fire Dept.; Birmingham Ridge Volunteer Fire Dept.; Unity Volunteer Fire Dept.; Tupelo Airport; North Mississippi State Hospital

Leflore County — **402 devices**

EMA/Sheriff/Fire Dept.; Greenwood Fire Dept.

Lincoln County — **273 devices**

County Sheriff/EMA/Fire Dept.; Brookhaven

Lowndes County — **234 devices**

County EMA/Sheriff; Columbus Fire Dept.; Caledonia

Madison County — **949 devices**

County EMA/ Sheriff*; Canton Fire Dept.*; Madison PD/Fire Dept./Public Works; Ridgeland PD/ Fire Dept./Public Works; Gluckstadt Fire Dept.

Marion County — **167 devices**

County EMA/Sheriff; Tri-Community Volunteer Fire Dept.; Columbia Fire Dept./PD; Pine Burr Volunteer Fire Dept.; South Marion Volunteer Fire Dept.; Southwest Marion Volunteer Fire Dept.; Morgantown Volunteer Fire Dept.; Foxworth Volunteer Fire Dept.

Marshall County — **238 devices**

County Sheriff/EMA/Fire Dept./Road and Bridge; Holly Springs Fire Dept./PD; Byhalia; Potts Camp; Waterford Fire Dept.

Monroe County — **363 devices**

County EMA; Amory; Hatley; Smithville PD

Montgomery County — **26 devices**

County EMA/E-911/Sheriff

Neshoba County — **3 devices**

Philadelphia Fire Dept.

Newton County — **112 devices**

County EMA/EMS/Sheriff/Fire Dept.; Newton PD; Decatur PD

Noxubee County — **66 devices**

Noxubee County EMA/E-911

Oktibbeha County — **38 devices**

County EMA*/Sheriff*

Panola County — **758 devices**

County EMA/Sheriff/Road Dept./Solid Waste; Batesville; Bynum Volunteer Fire Dept.; Como Volunteer Fire Dept.; Colespoint Volunteer Fire Dept.; Courtland Volunteer Fire Dept.; Crenshaw Volunteer Fire Dept.; Curtis Volunteer Fire Dept.; Mt Olivet Volunteer Fire Dept.; Pleasant Grove Volunteer Fire Dept.; Pope Volunteer Fire Dept.; Sardis Volunteer Fire Dept.; Sardis Lower Lake Volunteer Fire Dept.; Union Volunteer Fire Dept.; Red Hill Volunteer Fire Dept.; Longtown Volunteer Fire Dept.

Pearl River County — **426 devices**

Sheriff/EMA/Schools/Coroner; Picayune PD/Fire Dept.

Perry County — **164 devices**

County Sheriff/EMA; Beaumont; New Augusta; Richton

Pike County — **527 devices**

County PD/Fire Dept.; Summit; McComb PD

Pontotoc County — **120 devices**

County EMA/E-911; Pontotoc (City); Ecru

Prentiss County — **134 devices**

County Sheriff; Baldwyn; Booneville Fire Dept.

Quitman County — **28 devices**

County EMA

Rankin County — **2,524 devices**

County EMA/Sheriff; Brandon PD; Pearl PD/Fire Dept./EOC; Puckett PD; Flowood Fire Dept./PD; Pelahatchie; Richland PD; Monterey Volunteer Fire Dept.; Florence PD;

Scott County — **69 devices**

County EMA/E-911/Sheriff; Forest

Sharkey County — **50 devices**

EMA/Sheriff/Hospital/Coroner/Fire Coordinator; Rolling Fork PD/Fire Dept.; Anguilla PD/Fire Dept.; Cary Fire Dept.

Simpson County	**263 devices**
County EMA/Sheriff/Supervisors; Harrisville Volunteer Fire Dept.; Magee PD; Mendenhall Volunteer Fire Dept./PD;	

Smith County	**189 devices**
County EMA/Sheriff/Fire Services/Coroner/School District; Raleigh PD; Taylorsville; Polkville	

Stone County	**45 devices**
County EMA/Sheriff; Wiggins PD/Fire Dept.	

Sunflower County	**157 devices**
County EMA/Sheriff/Search and Rescue; Indianola PD; Ruleville PD	

Tallahatchie County	**228 devices**
County EMA/Sheriff; Charleston; Sumner; Tutwiler; Webb	

Tate County	**37 devices**
County EMA; Senatobia	

Tippah County	**95 devices**
County EMA/Sheriff; Walnut; Blue Mountain	

Tishomingo County	**211 devices**
County EMA/Sheriff/Schools; Iuka Fire Dept./PD; Belmont PD; Burnsville; Golden PD	

Tunica County	**308 devices**
County EMA/Sheriff/School Resource Officers; Tunica PD	

Union County	**144 devices**
County EMA/Sheriff; Myrtle PD; New Albany PD; Blue Springs; North Haven Fire Dept.	

Walthall County	**37 devices**
County EMA/Sheriff	

Warren County	**1,059 devices**
Warren County EMA/Sheriff; Vicksburg PD/Fire Dept./Schools	

Washington County	**623 devices**
County EMA/Sheriff; Arcola PD; Greenville PD/Fire Dept.; Hollandale PD/Fire Dept.; Leland PD/Fire Dept.; Metcalf PD; Riverside Community Volunteer Fire Dept.; Indian Mound Volunteer Fire Dept.; Delta Regional Medical Center	

Wayne County	**276 devices**
County EMA/Sheriff; Waynesboro PD; Wayne General Hospital State Line PD	

Webster County	**2 devices**
County E-911*	

Wilkinson County	**4 devices**
County EMA*; Centreville Volunteer Fire Dept.	

Winston County	**276 devices**
County EMA/Sheriff; Louisville	

Yalobusha County	**242 devices**
County EMA/EMS/Sheriff/Fire Dept./General Hospital; Coffeeville PD; Water Valley	

Yazoo County	**254 devices**
County EMA/PD/Fire Dept./Coroner	

*Special events only

SOURCE: WCC

Appendix C: State and Federal Government, Tribal, NGOs, and Other Entities on MSWIN by Total Number of Devices as of July 1, 2019

State

Copiah Lincoln Community College, **16**
Delta State University Campus Police, **14**
East Central Community College, **10**
Eighth Judicial District Drug Court, **3**
Hinds Community College, **40**
Holmes Community College, **29**
Hudspeth Center, **7**
Itawamba Community College Campus Police, **8**
Jackson State University, **107**
Mississippi Supreme Court, Marshal's Office, **4**
Mississippi Office of Homeland Security, **29**
Mississippi Emergency Management Agency, **155**
Mississippi Bureau of Narcotics, **309**
Mississippi Department of Agriculture and Commerce, **24**
Mississippi Department of Corrections, **463**
Mississippi Department of Environmental Quality, **24**
Mississippi Department of Finance and Administration, Capitol Police, **121**
Mississippi Department of Transportation, **1,650**
Mississippi Dept. of Wildlife, Fisheries, and Parks, **412**
Mississippi Department of Health, **264**
Mississippi Department of Marine Resources, **143**
Mississippi Forestry Commission, **504**
Mississippi Gaming Commission, **77**
Mississippi Highway Patrol, **1,139**
Mississippi Department of Revenue, **28**
Mississippi Gulf Coast Community College, **25**
Mississippi Military Department, **1,067**
Mississippi Mortuary Response Team, **unknown**
Mississippi State Hospital, **92**
MSU Raspet Flight Research Laboratory, **5**
Mississippi University for Women, **14**
Mississippi Wireless Communication Commission, **1,216**
Northeast Mississippi Community College, **unknown**
Office of the Governor, **6**
Office of the Attorney General, **86**
Office of the District Attorney, Fifth Circuit Court, **5**
Office of the District AG, Ninth Judicial District, **1**
Office of the State Auditor, **43**
Pat Harrison Waterway District Law Enforcement, **8**
Reservoir Patrol, **63**
Southwest MS Community College PD, **5**
State Fire Academy, **2**
State Fire Marshalls, **39**
State of Mississippi Fourteenth Circuit Drug Court, **6**
State of Mississippi Ninth Circuit Drug Court, **6**
University of MS Health Care Systems, **717**
University of MS, Oxford and Satellite Campuses, **85**
University of Southern Mississippi, **495**
William Carey University, **2**

Federal

Alcohol Tobacco Firearms and Explosives*, **283**
Federal Bureau of Investigation (FBI), **89**
US Fish and Wildlife Services, **54**
US Forestry Services, **30**
US Veteran Affairs*, **11**
National Parks Service, Gulf Island National Seashore, **59**
US Marshall Service*, **120**
National Parks Service, Natchez Trace Parkway, **27**
National Parks Service, Vicksburg Military Park, **9**
Transportation Safety Administration (TSA), **12**
US Army Corp of Engineers Vicksburg District, **64**
177th Armored Brigade, US Army, **229**
US Drug Enforcement Agency (DEA), **79**
US Federal Air Marshall Service, **8**
Columbus Air Force Base, Fire and Emerg. Services, **27**
US Customs and Border Patrol, **200**
US Department of Homeland Security, Immigration and Customs Enforcement (ICE), **3**
US Probation Office Southern District of Mississippi, **3**

Tribal

Mississippi Band of Choctaw Indians, **197**

Non-Governmental Organizations

Acadian Ambulance Service, **47**
Air Evac Emergency Medical Services, **1**
Air Methods, Inc., **13**
American Medical Response (AMR), **59**
ASAP EMS Corporation, **5**
Baptist Memorial Hospital, North Mississippi, **10**
Baptist Memorial Hospital, Union County, **2**
Burlington Northern, Santa Fe Railway Police, **13**
Canadian Northern Railroad Police, **7**
CareFlight, North Mississippi Medical, **6**
CareMed EMA (Priority Medical Transportation, Inc.), **10**
Delta Electric Power Association, **15**
Dixie Electrical Power Association, **4**
East Mississippi Electric Power Association, **130**
Electric Cooperatives of Mississippi, **6**
Fleetwood Transport Services, LLC, **2**
King's Daughters Medical Center, Brookhaven, **6**
Lifeguard Ambulance Service, **37**
MedState EMS, Inc., **33**
Med-Trans, Inc., **28**
Northeast Mississippi Electric Power Association, **53**
Pafford EMS, **90**
Pafford Medical Service, **64**
Tippah Electric Power Association (TEPA), **25**
Yazoo Valley EPA, **6**

Other

Louisiana, Texas, Arkansas, Alabama, FEMA, and Motorola*, **1,393**
Florence-Lauderdale County Emergency Management Communication District E-911, **8**
Louisiana Department of Environmental Quality*, **2**

*Special events only
SOURCE: WCC

Appendix D: MSWIN User Satisfaction Survey Questions

1. Name of agency/entity
2. Name of county where local agency/entity is located
3. Name of primary contact completing the survey
4. Contact information for primary contact
5. Is MSWIN the primary emergency communications system used by your agency/entity?
6. Please explain why your agency/entity has chosen not to use MSWIN as the primary emergency communications system.
7. Are there any other systems besides MSWIN that your agency/entity uses for emergency communications?
8. Please list the type of system(s) that your agency/entity uses.
9. What year did your agency/entity join the MSWIN system?
10. Overall, my agency/entity is satisfied with the MSWIN system.
11. The MSWIN system is reliable when users in my agency/entity need it.
12. MSWIN site infrastructure (e.g., towers and other equipment) are well-maintained.
13. WCC staff respond quickly to outages and other issues.
14. WCC staff provide quality service and communication to my agency/entity.
15. The MSWIN system allows interoperability between my agency/entity and other agencies/entities in my county.
16. The MSWIN system allows interoperability between my agency/entity and other agencies/entities across the state.
17. The MSWIN system provides adequate mobile coverage for my agency/entity.
18. The MSWIN system provides adequate portable (outdoor) coverage for my agency/entity.
19. The MSWIN system provides adequate portable (indoor) coverage for agency/entity.
20. What are ways that the MSWIN system can be improved?
21. If known, what are the reasons other agencies/entities in your county have chosen not to be on the MSWIN system?
22. Total number of devices broken out by portable, mobile, and console/control station for your agency/entity.

SOURCE: MSWIN User Satisfaction Survey

Appendix E: Local Entity and State Agency In-kind Contributions to MSWIN from 2005 to 2019 as Valued by WCC

Entity/Agency	Value of in-kind contributions	Entity/Agency	Value of in-kind contributions	Entity/Agency	Value of in-kind contributions
Rankin County*	$12,776,019	Byram, City of	$631,308	Monroe County	$199,428
Desoto County*	$12,663,675	Batesville, City of	$616,846	Amite County	$199,250
Jones County*	$9,052,514	Department of Marine Resources	$591,521	Natchez, City of	$198,420
Hinds County*	$8,357,258	Greenville, City of	$582,730	Department of Corrections	$198,260
Lee County*	$7,746,055	Pearl, City of	$555,455	Jackson State University	$196,906
Warren County/City of Vicksburg*	$6,985,999	Mississippi Highway Patrol	$541,910	Grenada, City of	$187,043
University of Mississippi Medical Center	$6,362,734	Clarke County	$425,000	Marshall County	$186,818
Forrest County*	$4,879,575	Flowood, City of	$418,135	West Point, City of	$173,575
Department of Forestry Commission	$4,725,883	Greenwood, City of	$413,925	Leflore County	$172,933
Department of Wildlife, Fisheries, and Parks	$3,369,630	Lamar County	$400,959	Brookhaven, City of	$171,365
Wireless Communication Commission	$2,831,994	Lincoln County	$392,295	Office of the State Auditor	$171,162
Hancock County*	$2,663,413	Bolivar County	$379,720	Lowndes County	$168,051
Jackson Municipal Airport Authority	$1,642,109	Mississippi Emergency Management Agency	$358,679	University of Southern Mississippi	$166,569
Washington County	$1,257,045	Jackson County	$355,852	Oktibbeha County	$161,454
Jackson, City of	$1,071,920	Winston County	$344,464	Franklin County	$158,484
Pike County	$985,402	Itawamba County	$307,423	Ridgeland, City of	$157,395
Biloxi, City of	$935,513	Department of Transportation	$290,000	State Capitol Police	$157,395

Mississippi National Guard	$907,406	Oxford, City of	$263,578	Grenada County	$142,553
Panola County	$790,830	Pascagoula, City of	$253,661	Hinds Community College	$132,103
Madison, City of	$732,281	University of Mississippi	$242,368	Petal, city of	$130,838
Yazoo County	$725,901	Holly Springs, City of	$238,123	Lawrence County	$114,484
Harrison County	$707,384	Clay County	$236,792	McComb, City of	$110,091
Gulfport, City of	$646,310	Pearl River County	$212,453	Mississippi State University	$99,963
Coahoma County/City of Clarksdale	$642,291	Jasper County	$207,660	Perry County	$99,904
Southaven, City of	$633,180	Alcorn County	$202,944	Madison County	$19,510
		Grand total of in-kind contributions			**$107,441,628**

*Includes the dollar value of locally-owned infrastructure formally contributed to WCC and integrated into MSWIN

SOURCE: PEER analysis of state agency and local entity investment in MSWIN provided by the Wireless Communication Commission.

Appendix F: Wireless Communication Purchasing Cost Thresholds and Required Approvals

Type of Product or Service and Associated Cost Threshold[16]	No Approval Needed	Procurement Committee Review and Approval	Full Commission Approval
Radio and other wireless purchases up to $100,000 per project or fiscal year*	√		
Cellular purchases from the Master Cellular Agreement[17] (no dollar limit)	√		
Radio and other wireless purchases between $100,001 and $250,000 per project or fiscal year*		√	
Cellular purchases outside of the Master Cellular Agreement[18] greater than $75,000 per fiscal year		√	
Radio and other wireless purchases greater than $250,000 per project or fiscal year*		√	√
Cellular purchases outside of the Master Cellular Agreement greater than $150,000 per fiscal year		√	√

*This threshold also applies to any purchases made from ITS's 2-way radio EPL and any purchases from the mobile, portable, and dispatch console equipment list from the MSWIN contract.

SOURCE: The Wireless Communication Commission Purchasing Guidelines and Procedures.

[16] The cost ranges are lifecycle costs and should include both initial purchase costs and ongoing expenditures for a reasonable product lifecycle. Equipment and service charges are included. Maintenance charges for existing equipment do not require WCC approval.
[17] Pursuant to MISS. CODE ANN. Section 25-53-191(4) (1972) ITS developed a list of approved vendors for the procurement of wireless communication devices and the delivery of wireless communication device services. The Master Cellular Agreement includes voice and data services and equipment provided by either AT&T Mobility and C Spire. The agreement with both vendors is valid from July 1, 2016 through June 30, 2021.
[18] All state agency or IHL cellular purchases outside of the Master Cellular Agreement must be approved by ITS prior to the entity presenting the information to WCC.

Agency Response

STATE OF MISSISSIPPI
WIRELESS COMMUNICATION COMMISSION

October 21, 2019

James A. Barber, Executive Director
Joint Legislative Committee on Performance and Expenditure Review
P. O. Box 1204
Jackson, Mississippi 39215-1204

RE: A Review of the Wireless Communication Commission
Draft Report

Dear Mr. Barber:

Thank you for your letter of October 1, 2019, and for providing a draft copy of the report pertaining to the Mississippi Wireless Communication Commission (WCC) to be published by the Joint Legislative Committee on Performance and Expenditure Review (PEER). The members of the Commission, the agencies and organizations we represent, and the staff of the WCC have been working tirelessly for more than 14 years to fulfill our legislative mandate to improve wireless public safety communications in our state. It is my sincere belief that the creation of the WCC and the construction of the Mississippi Wireless Information Network (MSWIN) stand among the State of Mississippi's greatest achievements in the field of public safety.

This success would not have been possible without the Mississippi Legislature's generous support over the years. As a result, the WCC has been able to leverage these state funds to obtain more than $200 million in federal grants. And by keeping administrative costs low, the WCC and its vendors have been able to build one of the most impressive statewide land mobile radio systems in the country.

We are very appreciative of your interest in the WCC and the many hours that were devoted to the production of this report. The members of the Commission look forward to discussing the PEER Committee's analysis and recommendations after the final version is released to the public.

Sincerely,

Willie R. Huff

Willie Huff, Chairman
Mississippi Wireless Communication Commission

cc: Vicki Helfrich, Mississippi Wireless Communication Commission
Craig Orgeron, Mississippi Department of Information Technology Services

412 East Woodrow Wilson Avenue, Mail Code 6601 • Jackson, Mississippi 39216
TELEPHONE 601/359-5333 • FAX 601/359-5362 • www.wcc.ms.gov

Agency Response

Mississippi Department of
Information Technology Services

3771 Eastwood Drive
Jackson, MS 39211-6381
Phone: 601-432-8000
Fax: 601-713-6380
www.its.ms.gov

Craig P. Orgeron, Ph.D., Executive Director

October 21, 2019

James A. Barber, Executive Director
PEER Committee
P. O. Box 1204
Jackson, MS 39215-1204
HAND DELIVERED

Re: *A Review of the Wireless Communication Commission*

Dear Mr. Barber:

Please accept this as the response of the Mississippi Department of Information Technology Services (ITS) to the report of the PEER Committee (Committee) following its review of the Wireless Communications Commission (WCC) in connection with the buildout and administration of the Mississippi Statewide Wireless Information Network (MSWIN).

The Committee notes in the review that the Mississippi Legislature made a purposeful decision to direct the creation of the WCC within the ITS enabling statute, as ITS advocated for the implementation of MSWIN and believed the agency had the necessary staff and expertise to support the creation and ongoing operation of the radio network. The creation of the WCC, responsibilities, membership, etc., was codified in Miss. Code Ann. § 25-53-171. In the ensuing fourteen years, without wavering ITS has, to the best of its ability, carried out its role in service to the public safety professionals across the State of Mississippi. To that end, ITS has and will continue to fulfill its statutory obligations vis-à-vis the WCC, MSWIN, and the Integrated Public Safety Communications Fund.

The statewide radio network that serves our state's first responders has been built out since the ITS-directed procurement and award of the contract with Motorola Solutions, Inc. which is valid through June 2022. This highly durable network was designed and built to ensure continuous emergency communication capability and rapid restoration in the event of a disaster. The success of the network is a source of pride for ITS. Interoperability was and is a key component of the radio network and was a specific response to problems that arose out of the lack of communications capabilities at national (e.g., the 911 attack) and state (e.g., Hurricane Katrina) levels. ITS is honored to have maintained the legislative support to be instrumental in the planning, buildout, and now maintenance of such a mission critical radio network that helps and protects our citizens on a daily basis.

At the specific direction of the Legislature, ITS has served as the agency of record providing oversight (including, but not limited to, grant management, asset management, human resources, payroll, accounts payable, contracting agent, and contract administration), and the agency stands ready to assist the Committee, the Legislature, and the Executive Branch in the pursuit of best practices to enable the anticipated future requirements for the operation and maintenance of MSWIN, including but not limited to promotion, training, programming, development of core curriculum and technical assistance for subscribers at the local and state levels.

As the WCC, MSWIN and the Integrated Public Safety Communications Fund core activities have moved from one of a large, complicated procurement and implementation to more of a maintenance, user adoption and ongoing operation, ITS will diligently work with Legislators and the Executive Branch, if it is determined that stewardship of these entities would be more efficiently or effectively served by another state agency, and to transition this support without any detrimental effects on MSWIN itself, or the first responders utilizing the network. Regardless of the outcome of that executive and legislative branch policy deliberation, ITS has and will continue to discharge mandated responsibilities the Legislature may deem to be appropriate until such time as it's otherwise directed.

If ITS, its Directors and staff, can provide any additional information or input that the Committee deems necessary or useful, please do not hesitate to call upon the agency for the same.

Sincerely,

Craig P. Orgeron, Ph.D.
Executive Director

PEER Committee Staff

James A. Barber, Executive Director

Legal and Reapportionment
Ted Booth, General Counsel
Ben Collins
Barton Norfleet

Administration
Alicia Russell-Gilbert
Deborah Hardy
Gale Taylor

Quality Assurance and Reporting
Richard Boada
Tracy Bobo

Performance Evaluation
Lonnie Edgar, Principal Analyst
David Pray, Principal Analyst
Jennifer Sebren, Principal Analyst
Kim Cummins
Matthew Dry
Samuel Hearn
Matthew Holmes
Taylor Mullins
Sarah Williamson
Julie Winkeljohn
Ray Wright

Performance Accountability
Linda Triplett, Director
Kirby Arinder
Debra Monroe-Lax
Meri Clare Ringer