

Funding Public Safety Communications Systems

HOW STATES AND LOCALITIES ARE FUNDING COMMUNICATIONS SYSTEMS

State and local governments and their public safety agencies are leveraging a variety of funding mechanisms to build, improve, expand, and support ongoing costs of public safety communications systems. Government and public safety officials must work together to develop strong project proposals, educate elected officials on the need for such improvements, and work together to identify and secure viable funding sources to maintain public safety communications systems, and sustain core communications capabilities, in order to ensure operability¹ and interoperability² between public safety agencies.³

The following is a list of funding mechanisms that have been used by states, territories, and localities to support initial capital investments in public safety communications projects, as well as ongoing operational costs. In addition, there are links to specific examples of each type of funding mechanism, and how it was used in select states and localities. These examples are intended to help public safety and government officials learn how other states and localities are funding their public safety communications systems. This document can be used to serve as a starting point for discussions on how improvements could be funded. The document will be updated, over time, with new and innovative methods and examples, as they emerge.

FUNDING MECHANISMS

BONDS State and local governments use bonds as a funding source to support public safety communications projects. Bonds are debt obligations, repaid through taxes or fees, over time, with interest. Bonds are often used by state and local governments for capital costs, typically construction and large procurement purposes. In some scenarios, if the tax or fee revenue exceeds the costs of paying down the debt, state and local governments have made the funds available as grants; put the money into a public safety communications contingency fund; or, designated funding to other options, as determined by the state. The amount of bonds can be limited if the state has a mandated debt ceiling, if the state has sub-standard credit, or if the bond depends on the successful passage of a referendum by citizens. As an example, Minnesota funded their public safety communications system using State-issued 911 Revenue Bonds. For more information, click [here](#).



PUBLIC-PRIVATE PARTNERSHIP Many states have utilized partnerships with private companies to build and sustain public safety communications systems. Partnerships are mutually beneficial. One example of a state's partnership with a private company includes the sharing of state-owned communications infrastructure with a private partner in exchange for the ability to use the private companies' radios and radio accessories. Partnerships usually include signed contracts with expiration dates, and include terms and conditions for use and maintenance of the equipment. South Carolina has utilized a public-private approach to support its communications system. For more information, click [here](#).



USER FEES Some state and local entities charge end-users directly for the use of emergency communications products or systems. Fees can be used toward operations, maintenance, and capital equipment costs for public safety communications-related investments. A best practice for instituting user fees is to conduct an analysis to determine the cost of building a communications system, and then use this analysis to determine an appropriate user fee structure based on state and local needs and the number of applicable users. Fees can be charged for data⁴ or voice service, but may not cover the full cost of operations. Michigan charges user fees for its public safety communications system. For more information, click [here](#).



9-1-1 SURCHARGE FEES States can bring in substantial funding in support of statewide public safety communications by attaching a minor fee to each phone line able to use 911 services.⁵ States can attach fees to wireline,⁶ wireless,⁷ and Voice-over-Internet Protocol,⁸ commonly referred to as VoIP, phone numbers. Most states utilize this funding mechanism for a variety of purposes, including paying bond debts, expanding/improving dispatch services and technology, and augmenting state governing body staff.



As the general public continues to decrease the use of wireline/landline phones, states are taking action to levy similar fees against other types of communication devices (e.g., cell phones) to cover 911 costs. Establishing a surcharge on other communication devices may require state and local legislative approval, and public vetting⁹ and approval of regulatory language governing the use of such funds. Many state and local governments have passed legislation levying charges against landline phones, and added cell phones and other devices to cover increasing 911 costs. Many states have specific language in legislation related to surcharges, ensuring that fees levied against users for a specific purpose (e.g., 911) may not be diverted to other purposes. Recently, Pennsylvania changed its law to raise funds to cover costs of 911 Centers. For more information, click [here](#).

TRAFFIC TICKET AND VEHICLE SURCHARGE Similar to 911 surcharges, state and local governments may increase fees for traffic tickets and vehicle registration to support emergency communications. While these fees are an excellent way to supplement other funding sources, they are not enough by themselves to support network operations and construction due to the fluctuation of revenue that is generated. Traffic and vehicle surcharges also provide an ongoing source of income that can be utilized for staff costs, operational costs, enhancements to the system, or other costs that require an ongoing supplemental income stream. Florida is one state that uses traffic fines to operate and maintain its statewide communication system. For more information, click [here](#).



LEASING EQUIPMENT Occasionally, state and local governments will lease communications equipment from companies to help spread the cost over several years, and to be eligible for upgrades, as they occur. One option is for a state to sign a “lease-to-own” contract; these contracts stipulate that at the end of the contract term, the state will gain ownership of the property. A different option is for a state to utilize leasing for a set period of time, where the state returns the equipment at the end of the lease, or signs a new lease for more updated equipment. Either option allows states to spread costs out over the term length, instead of purchasing equipment for a substantial up-front fee. State and local governments should ensure that the leasing and eventual purchase of equipment complies with applicable procurement regulations (e.g., competitive bidding). For more information on lease-to-own options, click [here](#).



LEASING TOWERS AND OTHER INFRASTRUCTURE TO PUBLIC AND PRIVATE

ENTITIES States that have built networks with statewide coverage may have the ability to lease infrastructure¹⁰ and excess tower capacity to public and private entities to pay for payment on debt service bonds, or for ongoing operational, maintenance, and upgrade costs. The leasing of state-owned towers and infrastructure can help to extend service to underserved areas. Prior to leasing infrastructure, states should conduct an assessment to analyze fair market value, and future tower space needs. The ownership and leasing of tower space may be regulated by the state. Interested entities should ensure that leasing agreements are compliant with state, local, and environmental laws governing the use of towers. For examples of states and localities that have leased towers and other infrastructure, click [here](#).



SPECIAL TAXES Some public safety agencies have been successful in lobbying their state and local government for special taxes¹¹ specifically designed to pay for improvements to public safety systems. This method has several advantages, in that it establishes a specific stream of funding set aside for public safety improvements, enables public safety agencies to provide elected officials with specific costs and a set budget for the project, and allows elected officials to control the rate and duration of the tax or tax increase to cover those costs. Most of these taxes require a special vote from the citizenry, and public education and outreach on the purpose and terms of the proposed increase, but may be an effective means to raise awareness of public safety needs, and initial capital costs for improvements, if the public is adequately educated and engaged in the referendum. For examples of Special Tax initiatives, click [here](#).



UNIQUE FUNDING STREAMS Some states have identified unique funding streams that they have leveraged to support emergency communications systems. For example, Kansas City, Missouri has dedicated \$10.5 million in gaming money,¹² revenue that comes from an area casino, to support the deployment of a new broadband network. Stakeholders should identify unique funding streams in their states, and determine if a portion of the funding can be used to support public safety communication systems, especially if public safety is needed to support the industry, event, or landmark where revenues are collected. For information on Kansas City, click [here](#).

GRANTS Grants are often used to pay for capital cost related to emergency communications systems, upgrades, and equipment. Each year, OEC produces a [list of federal grants funding emergency communications](#). State and local public safety agencies should work with state-level grant officials (e.g., State Administrative Agency) to identify grants and other sources of funding, and opportunities for joint procurement with entities interested in investing in emergency communications projects. DHS grantees should be aware that recipients (including sub-recipients) who receive federal funding for communication projects and related activities must comply with the [SAFECOM Guidance for Emergency Communication Grants \(SAFECOM Grant Guidance\)](#).¹³ *The SAFECOM Grant Guidance* provides information on national policies, eligible activities, best practices, and technical standards that are common to most federal emergency communications grants.



BREAKDOWN OF FUNDING METHODS

Table 1 (below) provides a breakdown of the various funding methods by category, showing how the funding methods are typically used – toward initial capital costs, ongoing maintenance and sustainment costs, and/or as a method of cost savings. Stakeholders can use this chart to discuss the need for initial costs and ongoing costs, and to provide examples of how other states and localities are using various funding methods to support emergency communications systems.

Table 1. Breakdown of Funding Methods by Category

Capital Costs	Ongoing Costs	Cost-Savings
<u>Bonds</u>	<u>User Fees</u>	<u>Public-Private Partnerships</u>
<u>Grants</u>	<u>9-1-1 Surcharges</u>	<u>Leasing Equipment</u>
<u>State and local funds</u>	<u>Traffic Ticket Fees</u>	<u>Leasing Towers/Infrastructure</u>
<u>Unique Funding Streams</u>	<u>Vehicle Surcharges/Fees</u>	

PLANNING AND COORDINATION NEEDED TO MAINTAIN COMMUNICATIONS

Emergency communications stakeholders need to work closely with state and local legislators and officials, and technical experts and financial experts, to develop and gain support for emergency communications projects. Stakeholders should clearly define and prioritize emergency communications needs, and help identify potential methods of funding – not only for initial capital costs, but also for ongoing maintenance costs, and upgrades. Additionally, stakeholders should seek out cost-saving methods, and ways to reduce duplication in spending, and highlight these methods in project proposals for decision-makers and their constituents.

State leaders are aware of the importance of emergency communications for public safety; however, they are charged with creating a budget that addresses a variety of state and local needs beyond emergency communications. Therefore, it is important that emergency communications officials prepare clear and concise budget options that identify multiple revenue streams (e.g., federal, state, local, in-kind) and potential matching sources, that lessen the burden on taxpayers, and are valued by legislators and state executives during budget discussions. Each state and territory has a unique fiscal environment based on varying laws, traditions, priorities, and existing programs and it is important that emergency communications officials tailor their funding mechanisms for their specific location and need.

Additionally, stakeholders should participate in the development of grant applications, and be prepared to demonstrate funding methods for initial capital costs, and for ongoing costs. Stakeholders should highlight contributions to a project by the state, public-private partnerships, cost-saving methods, any contribution of in-kind services or state-owned assets, and methods of providing a sustainable funding stream for maintenance and operations. To maximize the use of federal grant funding, it is essential that emergency communications stakeholders and state officials work together closely to:

- Work with the Statewide Interoperability Coordinator (SWIC) to define and prioritize communications needs in the Statewide Communication Interoperability Plan (SCIP)¹⁴
- Share the SCIP and critical emergency communications needs with statewide leaders
- Engage in the Threat and Hazard Identification and Risk Assessment (THIRA) process¹⁵ to understand threats and hazards of the state to establish informed and defensible capability targets
- Work to incorporate emergency communications needs in the State Preparedness Report¹⁶ based on current capability against capability targets established via the THIRA process
- Seek out potential federal funding sources for both capital and operational needs
- Participate in the State Senior Advisory Council (or equivalent) to prioritize projects for funding
- Identify and apply for multiple sources of funding to support public safety communications improvements

Stakeholders are encouraged to leverage this document, which was developed by, and with the input from public safety stakeholders, and members of SAFECOM and the National Council of Statewide Interoperability Coordinators (NCSWIC). This document provides examples and ideas for funding emergency communications projects, and can be used to demonstrate how other entities have funded improvements.

ABOUT SAFECOM/NCSWIC

SAFECOM is comprised of more than 70 members representing federal, state, local, and tribal emergency responders, and major intergovernmental and national public safety associations, who aim to improve multi-jurisdictional and intergovernmental communications interoperability through collaboration with emergency responders and policymakers across Federal, State, local, tribal, territorial, and international partners. SAFECOM members bring years of experience with emergency communications during day-to-day operations, and natural and man-made disasters. SAFECOM members offer insight and lessons learned on governance, planning, training, exercises, and technologies, including knowledge of equipment standards, requirements, and use. SAFECOM members also provide input on the challenges, needs, and best practices of emergency communications, and work in coordination with OEC to share best practices and lessons learned with others.

The National Council of Statewide Interoperability Coordinators (NCSWIC) is comprised of Statewide Interoperability Coordinators (SWIC) and their staff from the 56 states and territories. NCSWIC assists states and territories with promoting the critical importance of interoperable communications and sharing best practices to ensure the highest level of interoperable communications across the Nation.

This document was developed by the [SAFECOM/NCSWIC](http://www.dhs.gov/SAFECOM) Funding and Sustainment Committee, with the support of the Department of Homeland Security (DHS) Office of Emergency Communications. This document reflects the expertise and knowledge of SAFECOM and NCSWIC members, and the coordination efforts of OEC in bringing stakeholders together to share innovative methods, best practices, and lessons learned in funding and sustaining public safety communications systems. The Funding and Sustainment Committee will continue to monitor state and local methods for sustaining communications systems, and publish updates as needed.

For more information on SAFECOM, see: <http://www.dhs.gov/SAFECOM>

For more information on NCSWIC, see: <http://www.dhs.gov/SAFECOM/NCSWIC>

For more information on available funding mechanisms, please contact SAFECOMGovernance@hq.dhs.gov or NCSWICGovernance@hq.dhs.gov.

STATE AND LOCAL FUNDING EXAMPLES

Funding Public Safety Communications Systems with Bonds

Minnesota Funding Improvements with 911 Revenue Bonds. As an example, the State of Minnesota issues bonds for the purpose of financing all or a portion of the cost of certain programs and capital projects, including public safety projects. Specifically, the State issued 911 Revenue Bonds to finance portions of their public safety communications system. “The pledged revenues are derived from fees imposed by the State on each customer of a telephone service provider that furnishes service capable of originating a 9-1-1 emergency call. The system will enable emergency response organizations to utilize a single, integrated, and highly structured digital radio communications system, known as the Allied Radio Matrix for Emergency Response System ([ARMER System](#)). Phases 1 and 2 provided nine counties in the Minneapolis-Saint Paul metropolitan area with the radio system infrastructure for the ARMER System. Phase 3 extended the ARMER System to the St. Cloud and Rochester State Patrol districts which encompass twenty-three (23) counties. Phases 4, 5 and 6 extend the ARMER System to the remaining counties of the State.”¹⁷

Using Public Private Partnerships to Build Public Safety Communications Systems

South Carolina Leveraged Public-Private Partnerships to Improve Communications. In 1989, Hurricane Hugo ravaged parts of South Carolina. As first responders from other areas arrived, incompatible radio systems made it difficult to communicate or coordinate public safety efforts. State and local response agencies recognized a need for a reliable, statewide, interoperable system, but struggled with the projected \$100 million cost.¹⁸ At the same time, Spartanburg County and SCANA, a local power company that owns electrical utilities in South Carolina, North Carolina and Georgia, joined forces to build a system they could both use, and leveraged SCANA's existing 800 megahertz (MHz) trunked radio network.¹⁹ Spartanburg County would provide the towers and generators for new antenna sites, and SCANA would provide the radio frequency equipment and manage the network. User fees would finance operations. Over time, more state and local agencies joined the network, and still more were interested in joining, when and if infrastructure could be expanded into those areas.²⁰

In operation since 1992, the network continues to expand and evolve to meet public safety needs. The South Carolina Division of Technology administers the system with the support of an elected advisory committee created in 1994 to ensure the system is administered with the input of its users. In 2001, with approval from the State, SCANA agreed to sell the network infrastructure to its vendor, which would operate the system and fund its expansion (South Carolina also contributed some capital), under a contract with the State Division of Technology. The South Carolina Statewide 800 MHz Radio and Mobile Data System (commonly referred to as the "Palmetto 800," or "PAL 800") has continued to grow and today is one of the largest shared statewide public safety radio systems in the nation.²¹

The goal of the shared network is to provide statewide coverage, enhance statewide and regional interoperability, coordinate the State's response to emergencies, and to provide an economical solution for stand-alone public safety radio systems.

Additionally,

- The Palmetto 800 Network serves South Carolina and Augusta-Richmond County, Georgia
- The system serves over 40,000 voice users from over 750 different agencies representing State government, federal government, local government, law enforcement agencies, fire services, emergency medical services (EMS) and power utilities in South Carolina, North Carolina and Georgia participate in the shared statewide 800 MHz radio system.
- Over 94 percent of the State's population is serviced by sheriff's departments with access to the statewide 800 MHz radio system. And, 100% of county emergency management agencies and 9-1-1 Centers have access to the system for interoperability and disaster coordination.
- The State continues to receive top rankings for its interoperability efforts with the statewide shared public safety system.²²
- Through the use of public-private partnerships, South Carolina has been able to reduce costs and improve interoperability for all system users.

Leveraging User Fees to Build and Update Public Safety Communications Systems

Michigan Charging User Fees to Sustain Public Safety Communications System. The implementation of the Michigan Public Safety Communications System (MPSCS) began in 1984 when the State police were seeking to replace its 1940s two-way radio system. Officials decided the new network should be large and flexible enough to support all State and local public safety agencies. In 1992, after several years of system design planning and cost studies, specifications for a request for proposal were finalized and sent to potential vendors. In June 1994, the Michigan Legislature approved the funding for the system, and a contract was awarded to build the MPSCS.²³

Today, MPSCS provides a stable, secure framework for interoperable communications among local, State, federal, tribal and private first responders. MPSCS handles the second-largest trunked communication system in the world, including administration of a statewide 800/700 MHz digital trunked radio communication network spanning 59,415 square miles and including more than 244 radio towers and 66,000 radios.²⁴ To sustain this large system, Michigan charges fees to members and non-members:

- **User Fees.** Fees are levied twice a year on members, for voice and for data communications (per device). MPSCS may credit a portion of local infrastructure costs, against local voice subscriber fees.
- **Collocation²⁵ Fees – Members.** In addition, members (i.e., public safety agencies that use MPSCS as a primary means of mobile radio communications) are charged a fee if they want to collocate a service (e.g., a VHF radio system) that MPSCS does offer. Members are currently not charged a fee to collocate on a MPSCS tower if they are requesting a service that MPSCS does not offer (e.g., paging).
- **Collocation Fees – Non-members.** Non-members that do not use MPSCS as a primary means of mobile radio communications are charged a fee for collocating equipment on a MPSCS tower.²⁶

This system and approach provides rapid response and facilitates cooperation of emergency personnel through statewide coverage and advanced technology. It is a reliable, easy-to-use system and adheres to national standards. Additionally, system operation is monitored 24 hours a day to ensure its readiness to assist Michigan’s first responders. As important, this system and approach promotes asset sharing and cost sharing, which reduces costs to individual agencies and to the State.²⁷

Ohio Charges User Fees to Support its Multi-Agency Radio Communication System (MARCS). “MARCS is a 700/800 MHz radio and data network that utilizes state-of-the-art trunked technology to provide statewide interoperability in digital clarity to its subscribers throughout Ohio and a 10 mile radius outside of Ohio. The MARCS development contract required 97.5% mobile voice and data in-street coverage.²⁸ 99.71% aggregate voice coverage was realized and 98.13% aggregate data coverage was achieved. This allows maximum statewide interoperability and enhanced safety and protection for public safety service providers through secure digital transmissions. The MARCS network operates on three system components:

- Mobile Voice – operating on the 700/800 MHZ digital trunked technology
- Mobile Data – allowing data transmissions, Law Enforcement Agencies Data System (LEADS)²⁹ inquiries, reformatting of data from Mobile Data Terminals (MDT)³⁰
- Computer Aided Dispatch³¹ - providing GPS [Global Positioning System]-based auto vehicle location, resource recommendation and GGM³² display...³³

The system is supported exclusively by user fees, which are divided between different agencies and are designated for specific purpose, as established in Ohio Revised Code, more specifically:

- Section 4501.16 provides for a MARCS maintenance fund, which “shall consist of moneys received by the State highway patrol from users of MARCS. The fund shall be used to provide maintenance for MARCS-related equipment located at both the MARCS facilities and tower sites.”
- Section 4501.28 provides for a MARCS operations fund, which “shall consist of moneys received by the emergency management agency established under section 5502.22 of the Revised Code from users of the multi-agency radio communications system (MARCS).”
- Section 4501.29 provides an administration fund directing the Department of Administrative Services to “collect user fees from participants in the multi-agency radio communications system (MARCS)” for administrative purposes.³⁴

There are currently over 47,500 voice units³⁵ and over 1,800 mobile data units³⁶ on the MARCS system with over 1200 public safety/public service agencies statewide. This includes local, State and federal agencies. In a 2010 Report, the MARCS Task Force reported that there was a need to upgrade to Project 25 (P25) standards,³⁷ yet there was no funding to meet recurring needs to upgrade, extend or expand the system.³⁸ Most recently, one county – Montgomery County – approved spending \$13.4 million to switch to a digital P25 radio system from the current 800 MHz analog technology.³⁹

The State of Ohio will reimburse the county for half of the cost of the new equipment via credits from user fees, which will take more than five years to repay. The agreement, which was approved in July, 2015 spells out the relationship between the county and MARCS, and how the State will own, operate and maintain the new radio system.⁴⁰

Using 9-1-1 Surcharges to Support and Sustain Public Safety Communications Systems

Pennsylvania Funds Improvements by Raising Rates on 9-1-1 Surcharges. Recently, Pennsylvania lawmakers enacted changes to its law – the 911 Emergency Telephone Act – and voted to raise the monthly per device fee to \$1.65 per device per month to cover increasing costs of State and local 911 centers. Under the law, the Pennsylvania Emergency Management Agency (PEMA) will collect the wireless fees from service providers and then distribute that revenue to the counties.

As part of the new legislation, 80 percent of the funds will be distributed to counties through a formula yet to be finalized; up to 15 percent will be used for competitive incentive grants for system improvements, consolidation and system efficiencies; a flat 3 percent will be divided uniformly among the counties and the two city-based systems; and, PEMA will keep 2 percent for administration and support. PEMA has up to 18 months to develop the formula with the advice of a State 911 advisory board; once decided, funds will be distributed quarterly.⁴¹ Previously, fees were based on population, where 5 counties paid \$1 per device per month; 30 counties paid \$1.25 per device per month; and 34 counties paid \$1.50 per device per month.⁴²

According to the County Commissioners Association of Pennsylvania, the communication centers throughout the State require about \$292 million a year to operate but the previous fees only generated about \$190 million. It was up to individual counties to come up with the rest of the funding. In 2014, the county had to draw about \$350,000 from a reserve account to pay operational costs for the second half of the fiscal year after State funding fell short of projections.⁴³ The new bill is expected to generate \$314 million for State communication centers. Revenue from the increased fees will cover maintenance and improvements to emergency call centers, and create an infrastructure that would support text-messaging, video calls, and nonhuman calls (e.g., OnStar).⁴⁴

Using Traffic Fines to Supplement Costs for Public Safety Communications Systems

Florida Covers Costs of Public Safety System with Vehicle Registration Fees and Traffic Fines. Florida is one of many States utilizing this funding mechanism. “The Department of Management Services (DMS) entered into a public/private partnership with [its vendor] to implement the Statewide Law Enforcement Radio System (SLERS). DMS conveyed selected State-owned communications tower and tower assets to [the vendor], and received \$26.4 million in credits for radio equipment and accessories. [The vendor] also provided additional credits to replace 6,000 State mobile and portable radios...and was paid a \$40 million advance payment per the service contract.”⁴⁵

“To operate and maintain the SLERS network, [the vendor] is paid \$15 - \$18 million annually based on motor vehicle and vessel registration surcharge.⁴⁶ To enhance the SLERS network, DMS receives \$3 per criminal offense and moving traffic violation under section 318.18(17) of the Florida Statutes. The revenue stream brings in about \$1.5 million annually to enhance SLERS such as radio coverage, capacity, and operation of the radio system. In addition, DMS receives from [the vendor] 15 percent credit of all net revenues received from SLERS Partners on communications towers and 5 percent credit for each SLERS Partner radio on the SLERS network.”⁴⁷ While revenues generated from traffic tickets and fees for criminal offense are not sufficient to support network operations on their own, they can reduce operational costs, the savings of which can be passed on to public safety agencies.

Using Lease-to-Own Options to Purchase Equipment

City of Concord, California. In 2010, the City of Concord was facing a situation in which their legacy UHF radio system for public safety communications was nearing the end of its useful life. In 2010, the City Council adopted Resolution No. 10-77 authorizing participation in the East Bay Radio Communications System Authority (EBRCSA) issued bond, and participation in the regional interoperable radio system for all responders in Alameda and Contra Costa Counties. This would require the City to purchase digital P25 radios that would operate in the 700-800MHz frequency range.⁴⁸

The cost of replacing the 84 subscriber units was approximately \$381,000. City staff proposed a “lease-to-own” option whereby the City would enter into an agreement with the vendor to receive the units immediately, spread the payments (with nominal interest) out over time, and, own the units at the end of the lease. “The proposed lease agreement includes seven years of manufacturer provided maintenance and support at an annual charge of \$75,768.35 [approximately \$60,000 for equipment and \$15,000 for maintenance], and the City will own the units at the end of the lease.”⁴⁹ This option allowed the City to budget for the costs,⁵⁰ spread costs out over time, and avoid having to pay a substantial fee up-front. The City was also able to combine its purchasing power with a neighboring jurisdiction and receive a bulk discount on each subscriber unit from the vendor.

Leasing Towers and Other Infrastructure to Raise Revenue

Leasing Tower Space in Michigan. The Michigan legislature passed a law allowing public and non-public users to collocate equipment on the Michigan Public Safety Communication System (MPSCS) towers. The legislation stipulated that all costs associated with planning, installing, and maintaining collocation equipment are the responsibility of the agency or entity wishing to collocate on the MPSCS towers. Government agencies could collocate on the MPSCS towers immediately; nonpublic safety government entities were required to wait three years after the law went into effect to collocate on the MPSCS towers for any “commercial or business purposes.” Legislation further required that costs associated with collocating on MPSCS paid by a public safety agency or a legal entity be comparable to the costs charged to other public safety agencies or entities. Fees for members (i.e., governmental agencies) are waived if the entity is requesting a radio service that MPSCS does not offer.⁵¹

Revenue collected from leasing the MPSCS tower space is to be used for the payment of debt service for bonds that financed the construction of the MPSCS towers. Further, the State reserved the right to deny requests to co-locate if the installation, attachment, or collocation will interfere with the “optimum operation” of the MPSCS.⁵²

Missouri Leasing Dark Fiber to Raise Revenue. In another example, several cities have engaged in deployment of municipal broadband. As these cities continue to build out infrastructure, a few have been able to work with private industry to secure long-term lease agreements, allowing commercial providers to leverage dark (i.e., unused) fiber in order to expand their services to unserved areas, for a fee. The private entity gains access to needed infrastructure and the City gains a steady stream of revenue to support the network.

As an example, Kansas City, Missouri developed LiNKCity, which offered high-speed internet access for residents. North Kansas City spent \$10.5 million in gaming money,⁵³ the revenue that comes from Harrah's Casino, to build the network. It was supposed to be an attractive amenity to residents and a lure to outside businesses to move to North Kansas City. It was also set up as an enterprise fund, a segment of the city's budget that's supposed to operate as a business and generate its own profit. But with the rapid advancement of high-speed internet, and the introduction of even-faster fiber, projections for LiNKCity use were over-estimated. Facing revenue shortfalls, the City decided to enter into a 20-year lease agreement with [a major Internet provider] to use city-owned dark fiber. [The private Internet provider] would be able to use the dark fiber as a pass-through to surrounding areas, and Kansas City would receive approximately \$3.2 million in leasing fees. The steady stream of funding would help to stabilize the finances for this municipal network, and expand access to high-speed internet in surrounding areas.⁵⁴

This example demonstrates the complex nature of building and funding communications systems. Here, Kansas City leveraged a unique revenue stream – gaming revenue – to build the municipal broadband network, counted on a wide variety of users to support the network through user fees, expected the user fees to generate a profit, adjusted the approach to accommodate unexpected short-falls, forged a public-private partnership with the [private Internet provider], which leased a segment of the infrastructure, providing a steady stream of funding for the municipality, and enabling [the private Internet provider] to expand access to surrounding areas. It is critical that any network development or expansion project include a wide array of experts including public safety users, technical experts, and financial experts to ensure the long-term viability of communication systems.

Using Special Taxes to Fund Emergency Communications Improvements

Whitfield County, Georgia. Whitfield County, Georgia proposed a Special Purpose Local Option Sales Tax (SPLOST) to pay for infrastructure improvements, including a \$12 million P25 700/800 MHz radio system for county first responders. The county is currently on an analog VHF radio system. The SPLOST was approved, and the county is in the process of planning the transition and implementation of its P25 radio system, which includes upgrades that will link its public safety communications system to a regional P25 system in Tennessee.

The SPLOST raised the sales tax by one percent (1%) each year for four years, beginning July 1, 2015 and ending June 30, 2019. The proposal had to be approved by the voters. Public safety representatives held a series of educational town hall meetings on the need for improvements to the public safety communications systems. In April 2015, the proposal passed (67% in favor). As a result, the County is expected to collect \$63.6 million. Thirty-eight percent (38%) of that will go toward public safety, including the new P25 emergency radio system for first responders, new trucks for the Whitfield County and Dalton fire departments, a new fire station in the northwest part of the county and new vehicles for the Cohutta and Varnell police departments and the Whitfield County sheriff's office. Forty-one percent (41%) of the revenues will go toward improvements to roads and other infrastructure.⁵⁵

In an effort to save costs and maximize impact, the County decided to join the Tennessee Valley Regional Communications System (TVRCS) and leverage their infrastructure and systems, and join other Georgia counties operating on this regional system. In this scenario, the County was able to gain approval for a designated stream of funding for its public safety communications system by educating the public on system needs, and maximized opportunities for cost-saving by linking to a near-by regional system.⁵⁶

Funding Improvements through Special Tax Districts. Some localities have special districts which levy taxes to fund infrastructure costs, such as water, sewer, and fire services. In the State of Connecticut, there are Fire Districts which have authority to tax to support public safety needs. "The City of Norwich has a career fire department in a *city* district which levies a tax to pay for the career fire department. Norwich also has five volunteer fire departments in a *town* district which levies a tax to pay for the volunteer fire departments. Each department operates cooperatively, but independently. The *city* owns the career fire station and two of the volunteer fire stations. While three stations are owned by the volunteer fire departments, the *town* funds the operational and maintenance of these stations. The *city* owns all functional fire apparatus of all the fire departments."⁵⁷ Already-existing special tax districts could be a means to seek constant funding for emergency communications costs (e.g., maintenance, operations, upgrades, user fees, Internet services).

Stakeholders are invited to send additional examples to OEC at oeec@hq.dhs.gov.

End Notes

- ¹ The 2014 National Emergency Communications Plan (NECP) defines operability as, “The ability of emergency responders to establish and sustain communications in support of mission operations.” For more information, see: <http://www.dhs.gov/national-emergency-communications-plan>.
- ² The 2014 NECP defines interoperability as, “The ability of emergency responders to communicate among jurisdictions, disciplines, frequency bands, and levels of government as needed and as authorized. System operability is required for system interoperability.” For more information, see: <http://www.dhs.gov/national-emergency-communications-plan>.
- ³ The 2014 NECP describes public safety entities as “An entity that provides public safety services that include services provided by emergency response providers.” For more information, see: <http://www.dhs.gov/national-emergency-communications-plan>.
- ⁴ Data can include texts, images, and sounds.
- ⁵ The Federal Communications Commission (FCC) developed a [9-1-1 Fees Congressional Report](#) providing information on State collected 9-1-1 and E9-1-1 surcharges from across the Nation.
- ⁶ Wireline refers to telephone and data service that is provided on cables – both copper and fiber. For more information, see: Newton, Harry. *Newton’s Telecom Dictionary: Telecommunications Networking, Information Technologies, the Internet, Wired, Wireless, Satellites, and Fiber*. (New York: Flatiron Publishing 2013).
- ⁷ Any system transmitting and receiving information without wires. *Newton’s Telecom Dictionary*.
- ⁸ Voice over Internet Protocol (VoIP) is the transmission of voice using Internet Protocol (i.e., computer-based exchanges). Traditionally, voice services make use of circuit switching to transmit voice signals. This means that a channel is set up and maintained between the calling party and the called party for the duration of the call. In VoIP, the voice signal is encoded and divided into packets of data. Each packet is sent separately through the network. Packetizing of the voice signal means that nothing will be sent when the caller is not speaking. This allows for a reduction of the total bandwidth required. Another benefit of VoIP is the ability to route voice traffic over the Internet. (*Telecom ABC*: <http://www.telecomabc.com/v/voip.html>).
- ⁹ Public vetting may include referendum, public hearings, and other voting requirements, depending on state/local laws.
- ¹⁰ Infrastructure can include towers, equipment, and other assets.
- ¹¹ Special taxes can be increases to existing tax rates, or a separate tax to pay for certain improvements. Many times, these special taxes have a limited term, and are levied for only a certain number of years (long enough to pay for improvements).
- ¹² Some states have unique revenue streams that are used to support public safety, such as gaming (i.e., casino) revenue. In Kansas City, officials used gaming revenue for the initial capital investment in municipal broadband; in Indiana, a portion of entry fees to Riverboat Casinos are used to support county services, including public safety.
- ¹³ All other federal grantees investing in emergency communications are strongly encouraged to comply with the requirements in the *SAFECOM Grant Guidance* to ensure investments are compatible and interoperable, but should consult the specific grant guidance, as well as the federal granting agency to understand grant requirements.
- ¹⁴ For more information on the SCIP or to find the SWIC for your state, please contact OEC at oecc@hq.dhs.gov
- ¹⁵ For more information on the THIRA, and the THIRA process, see: <http://www.fema.gov/threat-and-hazard-identification-and-risk-assessment>.
- ¹⁶ For more information on the State Preparedness Report, see: <https://www.fema.gov/state-preparedness-report>.
- ¹⁷ State of Minnesota. Department of Management and Budget. *State of Minnesota 9-1-1 Revenue Bonds (Public Safety Communications System Project) Series 201*: 16 Aug. 2011. <http://www.beta.mmb.state.mn.us/doc/bonds/statement-revenue/8-16-11.pdf>.

¹⁸ Douglas, Merrill. "South Carolina's Public-Private Partnership Brings Interoperability to State Public Safety Communications." *Government Technology* (2010): 17 Mar. 2010. <http://www.govtech.com/public-safety/South-Carolinas-Public-Private-Partnership-Brings-Interoperability.html?page=2>.

¹⁹ An 800MHz trunked radio system is a communications system that is managed by a computer. These systems are really a blend of two-way communications technology and computer-controlled technologies. The system is computer controlled, and the radios are computer controlled. In conventional radio systems, users must wait in the "queue" for a free channel before they can transmit. A trunked radio system offers users a "pool" of channels that users can access, so they do not have to wait to transmit, and offers the capability to develop talk groups, that can share channels. All of these features can be controlled and managed through the Central Controller, allowing for great flexibility in communications, providing access when and where it is most needed. For basic information, see:

http://www.mctx.org/departments_d-k/departments_q-z/radio_shop/docs/Trunking_101_7_11_07_CM_RAC.ppt. Trunked systems can only operate in certain segments of the radio spectrum. The network in South Carolina operates in the 800 MHz frequency band, and [state](#) and local agencies must be licensed by the FCC to operate on this band.

²⁰ "Palmetto 800 Radio System | Department of Administration - State of South Carolina." *Palmetto 800 Radio System*. <http://www.admin.sc.gov/technology/technology-operations/palmetto-800>.

²¹ *Palmetto 800 Radio System*. <http://www.admin.sc.gov/technology/technology-operations/palmetto-800>.

²² *Palmetto 800 Radio System*. <http://www.admin.sc.gov/technology/technology-operations/palmetto-800>.

²³ "About MPSCS." *MPSCS*. <http://michigan.gov/mpscs/0,4640,7-184-58837-71405--,00.html>.

²⁴ "About MPSCS." *MPSCS*. <http://michigan.gov/mpscs/0,4640,7-184-58837-71405--,00.html>.

²⁵ This refers primarily to colocation of antennas on state-owned towers.

²⁶ "About MPSCS." *MPSCS Fee Structure*: 4 Nov. 2011. http://www.michigan.gov/documents/mpscs/1.1.1_MPSCS_Fee_Structure-w-DATA_FINAL_396499_7.pdf.

²⁷ "About MPSCS." *MPSCS*. <http://michigan.gov/mpscs/0,4640,7-184-58837-71405--,00.html>.

²⁸ In-street coverage is typically defined as coverage outside, around, or between buildings. For more information, see: Desourdis, Robert. *Emerging Public Safety Wireless Communications Systems*. (Artech House: Norwood 2002).

²⁹ LEADS is a shared computer system that allows authorized law enforcement agencies to share records with each other.

³⁰ Mobile data terminals are typically computerized devices (e.g., laptops) in vehicles (e.g., police and fire vehicles) which are used to communicate with dispatch centers and to access data from central computer systems (e.g., mapping, records search). For more information on mobile terminals and computers, see: <http://www.cops.usdoj.gov/default.asp?Item=632>.

³¹ Computer Aided Dispatch typically consists of a suite of software packages used to initiate public safety response, dispatch, and to maintain the status of responding resources in the field. It is generally used by emergency communications dispatchers, call-takers, and 911 operators in centralized, public-safety call centers, as well as by field personnel. For more information on CAD, see: <http://www.cops.usdoj.gov/default.asp?Item=632>.

³² Gigamedia (GGM) Display refers to a commercial offering of a display screen, designed for security purposes, that is said to provide high resolution, crisp, clear display, for use with CAD and GPS systems in this example.

³³ "MARCS News and Information." *Department of Administrative Services Divisions Information Technology MARCS Services*. <http://das.ohio.gov/Divisions/InformationTechnology/MARCServices/tabid/124/Default.aspx#33220-home>.

³⁴ MARCS Task Force. <http://www.das.ohio.gov/LinkClick.aspx?fileticket=JIO6gnAbyJY%3d&tabid=538>. 1 Apr. 2010.

³⁵ Typically hand-held devices.

³⁶ Typically in-vehicle computers.

³⁷ Project 25 (P25) is the standard for the design and manufacture of interoperable digital two-way wireless communications products. Developed in North America with state, local and federal representatives and Telecommunications Industry Association (TIA) governance, P25 has gained worldwide acceptance for public safety, security, public service, and commercial applications. P25 is applicable to LMR equipment authorized or licensed, in the U.S., under the National Telecommunications and Information Administration (NTIA) or FCC rules and regulations. (*Project 25 Technology Interest Group*: <http://www.project25.org/>).

³⁸ MARCS Task Force. <http://www.das.ohio.gov/LinkClick.aspx?fileticket=JIO6gnAbyJY%3d&tabid=538>. 1 Apr. 2010.

³⁹ Analog systems have one way of transmitting voice, data, and signals, while digital systems offer a different way of transmitting and receiving voice, data, and other information. Traditionally, public safety agencies utilized analog systems which enabled two-way communications. With more advanced technologies, public safety agencies are moving toward digital systems, which offer more features (e.g., computer-controlled radios, talk groups), greater coverage, capacity, and clarity.

⁴⁰ "Montgomery County to Upgrade Emergency Radio System." *PSC E-news: The Official Magazine of APCO International*. 17 July 2015. <http://psc.apointl.org/2015/07/17/montgomery-county-ohio-to-upgrade-emergency-radio-system/>.

⁴¹ Gilger, Mark, Jr. "Gov. Wolf Raises Charge for 911 Calls." *Republican Herald* (n.d.): 2 July 2015. <http://republicanherald.com/news/gov-wolf-raises-charge-for-911-calls-1.1906862>.

⁴² Scala, Kristina. "State: 911 Emergency Telephone Act Overhaul Discussed." *MainlineMediaNews*. 18 Feb. 2015. <http://www.mainlinemedianews.com/articles/2015/02/18/region/doc54e35c7990797025992493.txt?viewmode=2>.

⁴³ Scala, Kristina. "State: 911 Emergency Telephone Act Overhaul Discussed." *MainlineMediaNews*. 18 Feb. 2015. <http://www.mainlinemedianews.com/articles/2015/02/18/region/doc54e35c7990797025992493.txt?viewmode=2>.

⁴⁴ Gilger, Mark, Jr. "Gov. Wolf Raises Charge for 911 Calls." *Republican Herald*. 2 July 2015.

⁴⁵ "Department of Management Services." *SLERS Funding*. http://www.dms.myflorida.com/business_operations/telecommunications/radio_communications_services/statewide_law_enforcement_radio_system_slers/slrs_funding.

⁴⁶ See Florida Statute 318.21(9) at: <http://www.flsenate.gov/Laws/Statutes/2012/318.21>

⁴⁷ "Department of Management Services." *SLERS Funding*. http://www.dms.myflorida.com/business_operations/telecommunications/radio_communications_services/statewide_law_enforcement_radio_system_slers/slrs_funding.

⁴⁸ City Council of City of Concord, CA. *Agenda Item 3j - Resolution to Adopt a Seven Year Lease for Emergency Communications Equipment*. 24 July 2012. <http://www.cityofconcord.org/pdf/citygov/agendas/council/2012/0724/3J.pdf>.

⁴⁹ City Council of City of Concord, CA. *Agenda Item 3j - Resolution to Adopt a Seven Year Lease for Emergency Communications Equipment*. 24 July 2012. <http://www.cityofconcord.org/pdf/citygov/agendas/council/2012/0724/3J.pdf>.

⁵⁰ The lease included a non-appropriation clause which allows the City to terminate the lease without financial penalty in the event Council does not appropriate funding; if the lease is terminated, the City is required to return the leased equipment to the lessor at the City's expense.

⁵¹ "About MPSCS." *MPSCS*. <http://michigan.gov/mpscs/0,4640,7-184-58837-71405--,00.html>.

⁵² "About MPSCS." *MPSCS*. <http://michigan.gov/mpscs/0,4640,7-184-58837-71405--,00.html>.

⁵³ Some states have unique revenue streams that are used to support public safety, such as gaming revenue. In Kansas City, officials used gaming revenue for the initial capital investment in municipal broadband; in Indiana, a portion of entry fees to Riverboat Casinos are used to support county services, including public safety.

⁵⁴ Vockrodt, Steve. "Google Fiber Bails out North Kansas City's Fiber-optic Misfire." *The Pitch News*. 7 May 2013.
<http://www.pitch.com/kansascity/linkcity-google-fiber-dark-fiber/Content?oid=3220559>.

⁵⁵ Oliver, Charles. "Commissioners Say New Radio System Will Improve Safety." *The Daily Citizen*. 9 Mar. 2015.
http://www.daltondailycitizen.com/news/commissioners-say-new-radio-system-will-improve-safety/article_4da40b8a-c6d0-11e4-a62a-3fb256bc2773.html.

⁵⁶ Oliver, Charles. "SPLOST Passes Convincingly." *The Daily Citizen*. 17 Mar. 2015.
http://www.daltondailycitizen.com/news/commissioners-say-new-radio-system-will-improve-safety/article_4da40b8a-c6d0-11e4-a62a-3fb256bc2773.html.

⁵⁷ Kling, Bruce. "Fire Departments and Emergency Medical Services in Connecticut." <http://klingreport.com/wp-content/uploads/2014/11/CTFireDepartment.pdf>, p. 11.