

Funding Mechanisms Guide for Public Safety Communications

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EXECUTIVE SUMMARY

SAFECOM and the National Council of Statewide Interoperability Coordinators (NCSWIC), in collaboration with the Cybersecurity and Infrastructure Security Agency (CISA), updated the *Funding Mechanisms Guide for Public Safety Communications* to assist public safety agencies in identifying funding sources for emergency communications projects. Recognizing increased competition for public safety resources, this guide identifies common funding mechanisms used to build, improve, expand, and support costs associated with public safety communications systems. As displayed in Figure 1, these funding mechanisms can support capital costs, ongoing costs, and cost-saving efforts, or a combination of these categories.

Building on the 2015 version, this updated *Funding Mechanisms Guide for Public Safety Communications* highlights strengths, challenges, opportunities, and other considerations for each funding mechanism to assist agencies in determining whether the strategy is suitable for their community. The guide also provides funding examples from states and localities, showcasing challenges and successes associated with real-world applications. This guide is not intended as an all-inclusive, comprehensive manual; rather, it provides a collection of considerations, guidance materials, and best practices developed by the public safety user community in SAFECOM and NCSWIC.

Decision-makers are charged with creating a budget that addresses a variety of state, local, tribal, and territorial government needs beyond emergency communications. Consequently, it is important that public safety agencies prepare clear and concise budget options that identify multiple revenue streams (e.g., federal, state, local, in-kind) and tailor funding mechanisms to their jurisdiction's specific laws, priorities, and needs. To assist in identifying appropriate solutions, this document summarizes the *Emergency Communications System Lifecycle Planning Guide Compendium's* pre-planning steps for stakeholders to consider and evaluate. These steps help agencies look past initial capital investments to consider acquisitions, repairs, and upgrades as necessary costs, and plan for the entire system lifecycle.

Looking ahead, funding challenges are expected to persist, given trends in the emergency communications ecosystem and the rapid rate of technology evolution. Public safety agencies must plan for the integration of advanced technologies while competing with other priorities and balancing fluctuating funding levels. Agencies must also overcome hurdles to provide and adequately fund mission-critical communications. Understanding these realities, the public safety community must adapt to identify and advocate for a diverse portfolio of funding mechanisms with the appropriate decision-makers.

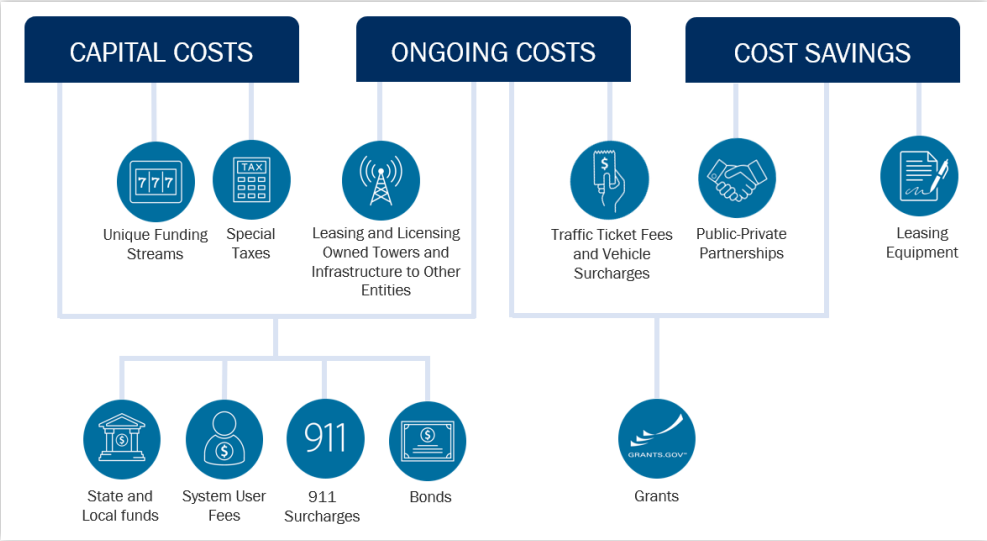


Figure 1. Funding Mechanisms by Category

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INTRODUCTION

Public safety is a recognized priority of every government's appointed and elected officials, as well as the community served. For public safety personnel to effectively respond to incidents and events, there must be reliable, secure, operable, and interoperable communications systems in place.[1] Building and maintaining public safety communications systems require the same level of commitment, funding, and oversight as municipal infrastructure projects, such as roads or bridges. Communications systems, just like fundamental infrastructure and facilities, require continual maintenance, repairs, and improvements.

Following the events of September 11, 2001, Congress appropriated federal financial assistance[2] to help state, local, tribal, and territorial (SLTT) governments improve public safety communications systems. This funding included nearly $1 billion in Public Safety Interoperable Communications Grants, which were awarded in 2007 to states and territories that developed Statewide Communication Interoperability Plans (SCIPs).[3] The Federal Government has continued offering financial assistance for SLTT government agencies; however, there has been a marked reduction and consolidation of grants over the past several years. As a result of reduced federal grants, public safety agencies must compete for available funding and rely on a variety of additional funding mechanisms to build, improve, expand, and support public safety communications systems.

Providing immediate and ongoing financial commitments to public safety communications systems benefits the community by:

- Saving and protecting citizens and emergency responders' lives
- Increasing emergency responder effectiveness and coordination
- Improving response times, especially in multi-jurisdiction responses
- Reducing property loss

The Cybersecurity and Infrastructure Security Agency (CISA) developed the *Funding Mechanisms Guide for Public Safety Communications* in 2015, with this update published in 2021, to assist public safety agencies in identifying funding sources for emergency communications projects. This document describes common funding mechanisms (e.g., bonds, public-private partnerships, user fees, 911 surcharges, leasing equipment, special taxes, grants), including strengths, challenges, opportunities, and other considerations impacting public safety agencies' decisions. In addition to funding mechanisms, this document also provides associated best practices for public safety agencies when developing emergency communications projects. Most notably, agencies should identify and secure funding for the entire system lifecycle—beginning with initial capital investments, through ongoing maintenance and operations, replacement parts, and finally, disposition and transition to new capabilities once a system has reached its useful end-of-life.

To develop this guide, CISA collaborated with the Joint SAFECOM and National Council of Statewide Interoperability Coordinators (NCSWIC) Funding and Sustainment Committee to gather input from members and other public safety stakeholders responsible for various aspects of emergency communications. The committee recognized the need to update the 2015 edition of this guide to account for new and innovative funding methods, as well as to inform decision-makers of considerations for each mechanism. This document provides examples and ideas for funding emergency communications projects by demonstrating how other entities have financed improvements.

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[1] For information on national priorities and goals, see the *National Emergency Communications Plan* as the Nation's strategic plan to strengthen and enhance emergency communications capabilities; Goal 1: Governance and Leadership, Objective 1.1: Formalize governance through policy, documentation, and adequate funding.

[2] Federal financial assistance refers to grants, loans, and cooperative agreements. In addition, the Federal Government offers technical assistance and services to public safety agencies.

[3] Public Safety Interoperable Communications Grant Program. Last accessed October 7, 2020. ntia.doc.gov/legacy/psic/index.html.

Pre-Planning Steps to Securing Funds

While decision-makers are aware of the importance of public safety, they are charged with creating a budget that addresses a variety of state, local, tribal, and territorial government needs beyond emergency communications. Therefore, it is important that public safety agencies prepare clear budget options that identify multiple revenue streams (e.g., federal, state, local, in-kind) and potential matching sources. These options should lessen the burden on taxpayers and be valued by legislators and state executives during budget discussions. SLTT governments have unique fiscal environments based on varying laws, traditions, priorities, and existing programs. Agencies must tailor funding mechanisms for their specific location and need.

As the first step in the *Emergency Communications System Lifecycle Planning Guide Compendium: Best Practices, Considerations, and Recommended Checklists*, the goal of the Pre-Planning Phase is to inform the decision-makers and secure the funding needed to replace, upgrade, maintain, dispose of, or acquire a communications system. A key takeaway in this phase is to identify funding options not just for the initial capital investment, but for the entire system lifecycle (e.g., acquisition, maintenance, and upgrades), and to secure funding commitments before proceeding to the Project Planning Phase. The guide recommends public safety agencies embark on the following Pre-Planning Phase steps:

- **Establish the core planning team.** The core planning team should be comprised of the Statewide Interoperability Coordinator (SWIC); agency officials; technical staff; affected users; and, procurement, financial, and legal staff. The core planning team should include representatives of agencies affected by the project who have full authorization to participate on behalf of the agencies they represent. If not already involved in the core planning team, agencies should coordinate projects with the SWIC, neighboring jurisdictions, and multiple agencies to clearly define and prioritize needs and gain support.

- **Research and develop system and funding options.** Project planners should review public safety resources (see Table 1) to develop regional, multi-jurisdictional, multi-disciplinary, and cross-border projects to not only promote greater interoperability across agencies, but also to pool grant resources, facilitate asset-sharing, and eliminate duplicate purchases. Agencies should also leverage assessment data to develop strong statements of need that can be shared with state leaders responsible for prioritizing projects for funding. Lastly, agencies should identify available funding sources that apply to their location and needs.

- **Decide on the optimal and alternative solutions with funding options.** Project planners should evaluate both technical system and funding options, then decide on a limited set of approaches (1-3) to present to decision-makers. The team must fully understand options, including strengths and weaknesses, and clearly convey information. Experienced officials caution that planners frequently approach decision-makers too early in the process, before the team has assessed user requirements and understands all options. Best practices for evaluating approaches include:
  - Research and record options in writing *before* approaching decision-makers
  - Weigh the strengths and weaknesses of system options and feasibility of funding
  - Develop consensus on an optimal approach and "next best" approaches
  - Create a fact sheet on basic requirements, recommended approach, and summary of alternatives

- **Plan for frequency needs and channel programming.** To use communications systems effectively, responders must have access to channels used for all types of events, including multi-disciplinary and multi-jurisdictional response. Planning radio channel usage and programming interoperability channels into equipment in advance of an emergency or planned event enhances preparedness. If communities plan their communications systems and operations to meet only their perceived immediate needs, they will be less able to give or receive assistance. Interoperability in the form of common channels with adjacent jurisdictions, other disciplines, or assistance to distant areas suffering a major disaster requires advanced planning, including interoperable communications pre-programming.

- **Create a business case, marketing materials, and strategic plan.** Before discussing with decision-makers, project planners should develop a business case outlining why the system should be funded. A successful business case must demonstrate the value of the interoperability effort, provide a clear picture of the future of interoperability in the community, and speak to the interests and concerns of community leaders. In addition, project planners should develop concise marketing materials to inform decision-makers and their staff. Lastly, agencies should prepare strategic plans to provide context for decision-makers. The plan should then divide a large communications initiative into several smaller projects that could be funded and implemented in phases over time. Experienced officials recommend dividing projects into phases to help an agency effectively manage the project—both technically and financially.

- **Identify a legislative- or executive-level project champion.** Once project materials are created, project planners should identify one or more "champions" to review presentation materials, provide professional input on messaging and approach, help usher the project through executive and legislative processes, and manage roadblocks. Experienced officials report how champions have helped the core planning team:
  - Incorporate useful advice into the project and presentation materials
  - Connect to state and local experts (e.g., technical, procurement)
  - Coordinate with other initiatives and partners which could support the project
  - Gain access to leaders and elected officials
  - Learn about state and local funding processes

- **Present to decision-makers and secure funding to support the initial build-out and sustain the system throughout the entire lifecycle.** After consultation with the team and project champion(s), project planners should begin to communicate, through formal and informal means, the proposal with decision-makers to obtain necessary approvals and funding. With the help of the project champion, planners should gain access to key officials, navigate the local decision-making process, and build support for the proposal. Project planners should highlight cost-saving methods and ways to reduce duplication in spending, as benefits for decision-makers and their constituents.

If project planners target federal financial assistance to apply for, the core planning team should participate in the development of grant applications. Applicants 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 grants, public safety agencies should:

- Review and share the *National Emergency Communications Plan*, SCIP, and other applicable plans to understand national and state-level goals and communications needs;
- Coordinate with the SWIC and other key governance bodies and leadership to document needs and align project proposals to strategic plans;
- Engage in risk assessments, such as the Threat and Hazard Identification and Risk Assessment process, to establish informed and defensible capability targets;
- Participate in the Statewide Interoperability Governing Body (or equivalent) to prioritize projects;
- Identify potential federal grants and read the Notice of Funding Opportunity and related information to ensure proposed activities are eligible under the specific program; and
- Apply for multiple sources of funding to support public safety communications.

Timing for the Pre-Planning Phase can vary greatly depending on the status and coordination history of emergency communications leaders and governing bodies across the whole community. Ideally, agencies should begin pre-planning activities several months to a year *before* funding is needed, as proposals cannot be funded immediately. Experienced officials report securing funding for a communications project often takes a year or more. This is due to the ongoing nature of state and local budget processes, which are often finalized long before an annual budget is passed.

Resources

CISA, SAFECOM, and NCSWIC have published numerous resources to assist public safety agencies with the pre-planning process to identify funding for public safety communications, as listed in Table 1.

Table 1. Planning and Funding Resources for Public Safety Communications

Pre-Planning Step	Resource Description
Planning Throughout the System Lifecycle	*Emergency Communications System Lifecycle Planning Guide* aids stakeholders in their efforts to fund, plan, procure, implement, support, and maintain public safety communications systems, and eventually to replace and dispose of system components. *Lifecycle Planning Tool* provides a template when considering funding during each phase of the lifecycle.
Creating a Business Case	*Interoperability Business Case: An Introduction to Ongoing Local Funding* advises the community on the elements needed to build a strong business case for funding interoperable communications by presenting steps and considerations to follow to tap into local funding sources. *Value Analysis Guide* and *Brochure* assist public safety agencies in evaluating communications systems and equipment for cost-effectiveness and value to its users. Materials describe common system components, including considerations and features required by public safety agencies that are unique to specific roles.
Informing and Justifying Costs to Decision-Makers	*Public Safety Communications Evolution Brochure* informs the community about technologies and services to support the future of public safety communications. It describes how legacy land mobile radio (LMR) continues to be the primary voice communications pathway while the First Responder Network Authority's (FirstNet Authority) nationwide network concurrently brings enhanced wireless broadband capabilities. *Shared Communication Systems and Infrastructure (SCSI) Fact Sheet* informs the public safety community on the vision and benefits of SCSI. It outlines the governance, risk management, resource sharing, and operations considerations that need to be addressed to ensure project success. *LMR 101, Part I: Educating Decision Makers on LMR Technologies* includes simple diagrams, terminology, history, and current usage of LMR technologies by public safety agencies. *LMR for Decision Makers, Part II: Educating Decision Makers on LMR Technology Issues* provides information on emerging technologies, the impact such technologies will have on LMR systems, discussion of the LMR to long-term evolution (LTE) transition, and the need to sustain mission-critical voice. *LMR for Project Managers, Part III: A Project 25 (P25) Primer for Project Managers and Acquisition Managers* introduces standards-based purchasing and explains the importance of P25 to public safety interoperability. *Considerations for Encryption in Public Safety Radio Systems* examines why encryption may be needed during time-sensitive operations or when open communications may not be enough to protect information. *Determining the Need for Encryption in Public Safety Radios* provides an overview of factors public safety agencies should consider before deciding to encrypt their public safety radio systems. *Best Practices for Encryption in P25 Public Safety LMR Systems* addresses standards-based encryption to enhance secure interoperability and minimize the risk of compromising sensitive information. *Developing Methods to Improve Encrypted Interoperability in Public Safety Communications* highlights best practices of key management necessary to allow encrypted operability and interoperability.
Identifying and Applying for Grants	*SAFECOM Guidance on Emergency Communications Grants* contains information for entities applying for federal financial assistance for emergency communications projects. Updated annually, the guidance provides general information on eligible activities, technical standards, and other terms and conditions that are common to most federal emergency communications grants. *List of Emergency Communications Financial Assistance Programs* identifies federal programs (i.e., grants, loans, cooperative agreements) that may support emergency communications investments. The list summarizes program descriptions, available award amount, application deadline, eligibility, and other information. Periodic updates are posted to the list as new opportunities are announced.

FUNDING MECHANISMS

This section provides an overview of various funding methods employed by public safety agencies for communications. It describes each funding mechanism, with key considerations and state-specific examples, to assist agencies in determining whether the funding mechanism is well-suited to their community. Table 2 depicts the funding mechanisms by category, showing how the funding methods are typically used toward initial capital costs, ongoing maintenance and sustainment costs, or as a method of cost-savings. This is also the order in which funding mechanisms are presented in the document; however, it is not an all-inclusive list nor an endorsement for any funding model. Specific examples are intended to help public safety and government officials understand how other states and localities are funding their public safety communications systems and offer resources to learn more.

Table 2. Summary of Funding Methods

Funding Mechanisms	Capital Costs	Ongoing Costs	Cost-Savings
State and Local Funds	✓	✓	○
System User Fees	✓	✓	○
911 Surcharges	✓	✓	○
Bonds	✓	✓	○
Unique Funding Streams	✓	✓	○
Special Taxes	✓	○	○
Leasing and Licensing Owned Towers and Infrastrucutre to Other Entitites	○	✓	○
Traffic Ticket Fees and Vehicle Surcharges	○	✓	○
Public-Private Partnerships	○	○	✓
Leasing Equipment	○	○	✓
Grants	✓	○	✓



State and Local Funds

State and local funds[4] should ideally serve as the primary funding source for public safety communications systems. However, many officials report competing priorities and strained budgets that do not fully support requirements. Thus, striking the right balance between different sources of state and local funds has become an essential skill for the public safety community.

Public safety agencies should consider the following when using state and local funds:

- **Public safety agencies must solicit funding early and often.** State and local budget decisions are part of an ongoing cycle, often finalized long before an annual budget is passed. To ensure appropriate funding each fiscal year, public safety agencies must proactively petition stakeholders and the legislature to enact appropriate legislation or policies to fund their capital and ongoing communications maintenance requirements. Agencies should provide long-term budget plans to demonstrate competency and the cost-benefit return for decision-makers and legislators. Public safety agencies should also request budget increases for inflation adjustments to mitigate the potential loss of purchasing power.

- **Priorities and regulations vary across states.** Public safety agencies must be aware of their state's political environment and governance structure when advocating for communications funding. Officials should consider nuances such as election cycles, leadership priorities, and gubernatorial power (e.g., executive orders, line-item vetoes) that could impact legislation. Depending on the leadership hierarchy or structure of the office responsible for public safety communications, officials may be restricted from certain activities (e.g., lobbying). Preferably, the communications office should be separate from the governor's office, so there is less impact when political or leadership changes occur.

- **Resource sharing and SCSI projects offer great value for state and local funds.** SCSI projects focus on encouraging active resource sharing for organizations with national security, emergency preparedness, and public safety missions. This approach requires extensive coordination among partners and disciplines, and encompasses the assets—physical infrastructure (e.g., tower sites, facilities, repeaters, connectivity), real estate, spectrum, applications, subscriber units, and technical and operational staff—contributed in support of public safety communications. Agencies realize several benefits when implementing the SCSI approach, as these projects can: 1) decrease duplication of investments; 2) reduce capital and operations and maintenance expenditures; and 3) enhance operational coordination and economies of scale.[5]

- **Generating advocacy is vital for public safety communications funding.** Legislative or executive-level project champions are critical allies to providing insight into state and local funding decisions, helping usher the project through executive and legislative processes, and managing roadblocks. In addition to obtaining these champions, public safety agencies should appeal to legislators through their constituents by tying communications funding to larger issues with voter interest (e.g., school safety, broadband connectivity, border security).

Indiana maintains dedicated funding for its statewide public safety communications systems, as described in the following example:

[4] For the purposes of this document, references to "state and local" include state, local, tribal, and territorial government agencies.
[5] For more information on Shared Communication Systems and Shared Infrastructure, see: cisa.gov/scsi.

Indiana Maintains a Strong and Stable Funding Model

In 2002, spurred in part by the 9/11 tragedy, Indiana's state legislature redirected an existing portion of each Bureau of Motor Vehicles transaction to ensure investments in public safety interoperable communications despite changing economic or political cycles. This funding model allowed the state to build, maintain, and upgrade a 186-site statewide 800-megahertz (MHz) LMR system, available to local, state, and federal public safety agencies with no user fees. The state provides the system backbone including towers, antennas, shelters, generators, transmitters, base stations, cabling, and frequencies. Participating agencies provide their own user equipment, including dispatch consoles, radios, and computers, which they can buy at a discount through the state-negotiated Quantity Purchasing Agreement. Nearly 90,000 users operate on the Indiana "SAFE-T" system.

This funding model has been integral to the successful evolution of interoperability at the state level. The Integrated Public Safety Commission (IPSC)—a statutorily created agency dedicated solely to public safety interoperable communications—oversees communications operations, planning, and response. In addition to the LMR system, IPSC Indiana also provides a statewide shared Computer Aided Dispatch/Mobile Data Device system and is working on next generation technology transitions (e.g., LMR to LTE).

Source: *Sally Fay, SWIC, Director of Communications & Training, IPSC Indiana*



System User Fees

Some public safety communications system owners charge user fees to support operations, maintenance, and capital investment costs. System user fee structure and rates widely vary across the country. A best practice for instituting user fees is to analyze the cost of building and maintaining a communications system, then determine an appropriate fee structure based on user needs and the anticipated number of end-users.

Public safety agencies should consider the following for system user fees:

- **Strong governance is essential to planning and implementing system user fees.** Governing bodies must accurately estimate the full cost of the system, including the human capital cost of collecting user fees, to determine fee structures. Governance is also required during instances of challenging user fee collection. Public safety agencies should establish policies and procedures to manage user fee structure and collection, as well as regularly assess whether sufficient funds are available for system maintenance and improvements. Lastly, governing bodies are responsible for ensuring end-users receive value that is in line with what they are paying in user fees.

- **Tiers of user fees offer flexibility and customization.** Agencies joining the system will vary in the number of subscriber units, geographic location, coverage requirements (e.g., in-building in a dense urban area), and in-kind contributions (e.g., towers/sites, zone controllers, spectrum) that offer ongoing cost savings. The structure and cost of user fees may be tailored based on individual usage, in addition to special applications (e.g., emergency-use only, small jurisdictional area, school campuses).

- **User fees provide a steady income stream.** Agencies that collect user fees can rely on this funding for ongoing operations and maintenance of the system. When planning for capital investments or upgrades, agencies should clearly communicate the intent of accumulated funds (e.g., system upgrades, new sites) to minimize potential realignment. Essentially, user fees should support system operations and not be diverted to other efforts.

- **Inability to pay user fees or ineffective governance may lead to a *free-rider* issue.** This issue is a type of market failure that occurs when those who benefit from resources, public goods, or services of a communal nature do not pay for them; applying this to public safety communications systems, it refers to subscribers that do not pay fees. Although not necessarily malicious, free riders are a problem because while not paying for the resource, they may continue to access it. Thus, the system capabilities may be overused or degraded without enough funds for maintenance or improvement.

Michigan and Ohio collect user fees to fund and support statewide public safety communications systems, as described in the following examples:

Michigan Charges User and Co-Location Fees to Sustain Communications System

Michigan's Public Safety Communications System (MPSCS) provides a stable, secure framework for interoperable communications among local, state, federal, tribal, and private first responders. The statewide 800/700 MHz digital trunked radio communication network spans 59,415 square miles and includes 254 towers and more than 98,000 radios. To sustain this vast system, Michigan charges fees to members and non-members:

- **User Fees.** Fees are levied twice a year per device for voice and data communications. MPSCS may credit a portion of local infrastructure costs against voice subscriber fees.
- **Co-location Fees.** A co-location exists when either an MPSCS member or non-member (i.e., an agency that does not use MPSCS as its primary means of mobile radio communications) places antennas and equipment on MPSCS towers and property. Commercial and public safety co-locations are permitted by state law. Thus, MPSCS charges co-location fees as another funding mechanism for maintenance and operations.

This funding approach promotes resource sharing, which reduces costs to individual agencies and the state administering the system.

Source: *MPSCS*

Ohio Charges User Fees to Support Multi-Agency Radio Communication System (MARCS)

MARCS is a 700/800 MHz radio and data network that provides secure statewide interoperable communications to its subscribers, as well as for a 10-mile radius outside of Ohio. There are over 128,000 voice units and 1,800 mobile data units on MARCS, used by approximately 2,800 local, state, and federal public safety agencies. The system is supported exclusively by user fees, which are divided among different agencies and designated for specific purposes:

- **Tier 1: Basic Subscriber.** The end-user agency procures its radios and pays a monthly rate for the MARCS backbone services per subscriber.
- **Tier 2: Enhanced Local Infrastructure.** The end-user agency desires expanded coverage or capacity to support talk paths, which they accomplish by funding additional sites or repeaters. Once built, the agency turns over ownership, management control, and maintenance to MARCS. Ohio reimburses the agency for half of the expended cost through user fee credits.
- **Tier 3: Connecting Existing Zone Controller.** Any regional Project 25 (P25) platform and existing zone controller connected to the primary MARCS zone controller will receive a credit or exemption of user fees, similar to Tiers 4 and 5. This "quid pro quo" model accounts for enhanced roaming and economy of scale pricing for ongoing maintenance and software upgrades for both parties.
- **Tier 4: Sharing of Core Resources.** Large regional systems contemplating migration to P25 are invited to use the MARCS core rather than purchasing their own zone controller. In exchange, the regional systems agree to manage towers/sites in their areas, including all maintenance and software upgrades, saving Ohio/MARCS ongoing operating costs.
- **Tier 5: Shared Zone Controller.** Ohio/MARCS and a regional P25 system owner jointly purchase of one or more zone controllers, then share ongoing costs at the zone controller level. This sharing saves both entities' maintenance costs for the zone controllers.

Since MARCS receives all funding from user fees, the derived tiers provide either an income stream or ongoing cost-savings for Ohio. Applicants for Tier 1 are approved at the MARCS program level, while Tiers 2-5 are submitted to the MARCS Steering Committee for review.

Source: *Rick Schmahl, MARCS Program Director, Ohio MARCS*



911 Surcharges

911 surcharges provide state and local governments with a steady revenue source for capital and ongoing costs. By attaching a minor fee to wireline, wireless, or Voice over Internet Protocol (VoIP) phone lines, states may bring in substantial funding, independent of market variations. As technology advances, governments are encouraged to explore options beyond traditional phone lines, such as internet connections and pre-paid phones, to sustain or increase revenue.

Public safety agencies should consider the following for 911 surcharges:

- **Diligence is key when requesting 911 surcharges.** Recognizing multiple priorities exist, public safety agencies should partner with legislative champions to safeguard 911 revenue. Officials should advocate for legislation that distributes surcharges directly to emergency communications projects, prohibiting diversions. In the event funds are diverted, states may be ineligible for certain grants and additional funding opportunities.

- **911 surcharges are subject to restrictions.** Public safety agencies must be aware of state and federal restrictions surrounding 911 surcharges. Certain activities, such as funding personnel or repaying bonds, are often disallowed. Officials should work with the appropriate legal and financial staff to understand limitations and allowability. In particular, agencies should follow the Federal Communications Commission's (FCC) rules and regulations. At the time of this document's publication, the FCC has taken steps to establish new rules for 911 surcharges, including allowable and unallowable activities.[6]

- **Modification of surcharges often requires legislative or public approval.** Establishing or altering surcharges may require a legislative petition or a public referendum. In many cases, surcharge modifications are also subject to a lengthy legal review. As such, officials are encouraged to champion surcharges well in advance of implementation and plan project timelines accordingly. In either case, officials must be prepared to justify surcharge increases to stakeholders and explain how revenue will benefit public safety and the general public.

- **Tailoring 911 surcharges provides flexibility.** States should consider tailoring 911 surcharges to reflect jurisdictional needs. For example, some states have benefited from calculating fees based on location, population density, use of services, industry (i.e., public or private use), or phone type (e.g., wireline, wireless, pre- and post-paid cellular). This flexibility allows states to balance between the revenue generated and the subsequent functionality for constituents.

Pennsylvania and Massachusetts increased 911 surcharges to fund their statewide communications improvements, as described in the following examples:

[6] "FCC Proposes Rules To Address 911 Fee Diversion." FCC Notice of Proposed Rulemaking issued on February 17, 2021. fcc.gov/document/fcc-proposes-rules-address-911-fee-diversion.

Pennsylvania Funds Improvements by Raising Rates on 911 Surcharges

The 911 Emergency Telephone Act (Act 12 of 2015) established a framework of requirements related to planning, standards, and funding to sustain current 911 systems and facilitate the implementation of Next Generation 911 (NG911) in Pennsylvania. A key provision of the legislation was an increase of the 911 surcharge to $1.65. The surcharge is levied on any communications services capable of two-way communication to a county Public Safety Answering Point (PSAP) by dialing or entering the digits 911. Revenue collections have averaged $316 million annually compared to $190 million prior to the surcharge increase. Under the law, service providers are to assess and collect the uniform surcharge monthly and forward the amount collected quarterly to the Pennsylvania Emergency Management Agency (PEMA).

As part of the new legislation, 83 percent of the surcharge revenue collected quarterly is distributed to each county PSAP using a formula-based calculation. Of the revenue collected quarterly, 15 percent shall be used by PEMA to establish, enhance, operate, or maintain statewide interconnectivity of 911 systems. These funds are used for system improvements and implementation of NG911 systems in Pennsylvania. Up to two percent of the amount collected may be retained by PEMA for expenses directly related to administering the provisions of the law.

While the 911 surcharge funds a significant portion of 911 expenditures, there is still a deficit that local public safety agencies must fund from other revenue sources. For example, in 2018, surcharges raised $352 million, leaving counties to fund an additional $36 million in 911 expenses.

PEMA has worked closely with 911 stakeholders to streamline administrative processes, standardize accounting procedures, implement strong oversight, and incentivize consolidation and regionalization of 911 systems. These efforts have resulted in a reduction of 911 expenditures statewide by $10.2 million in 2018. In addition, 911 surcharge revenue collected in 2018 covered 90 percent of the total 911 expenditures in Pennsylvania. Prior to enacting the surcharge increase, 911 surcharge revenue covered only 65 percent of the total 911 expenditures in 2014.

Source: *PEMA 911 Office*

Massachusetts Uses 911 Surcharges to Fund PSAP Operations and System Improvements

Since 2003, the Commonwealth of Massachusetts has funded its statewide 911 system and multiple PSAP grant programs through monthly 911 surcharges, billed to both residential and business customers. All telephone customers, whether wireless or landline, pay the monthly surcharge for each line capable of accessing the 911 system.

Using surcharge funds, the Commonwealth fully funds the statewide 911 system and the State 911 Department, which oversees the system's deployment, operations, and maintenance, as well as PSAP training and other programs. Massachusetts provides direct support to its PSAPs through several annual grant opportunities. Two of these non-competitive grants fund telecommunicator training, emergency medical dispatch services, and PSAP operational costs to deliver 911 services. A third, competitive grant, funds regionalization efforts within the PSAP community.

In instances when significant capital upgrades to the 911 system were required, the Massachusetts State 911 Department has petitioned the Department of Telecommunications and Cable (DTC) to temporarily increase surcharge rates. This mechanism was used to fully fund the upgrade of the statewide Enhanced 911 (E911) system to NG911, a multi-year project completed in late 2017.

In June 2018, the DTC approved a petition to temporarily increase the Commonwealth's monthly 911 surcharge rate from $1.00 to $1.50. This increase, effective January 2019 to December 2023, provides an additional $125 million over five years to fund the enhancement of Massachusetts' emergency communications systems.

Source: *Office of the Massachusetts Statewide Interoperability Coordinator, Massachusetts 911 Department Announcement on E911 Surcharge*



Bonds

Bonds provide public safety agencies with a low-risk, stable funding option for capital and ongoing costs. Public safety communications system owners and state legislatures may choose to issue bonds to reap several benefits, including multi-year funding, fixed interest rates, and defined payment schedules. If an agency's revenue exceeds the cost of repaying a bond, funds may be made available for grants, placed into a contingency fund, or designated for additional communications projects.

Public safety agencies should consider the following when using bonds:

- **Issuing bonds can be a lengthy and complex process.** Agencies should have clear expectations on the timeframe and level of effort associated with issuance. Issuing bonds is a multi-step process involving extensive negotiations, a detailed credit check, and thorough financial planning. If legislative approval is necessary, or if the bond requires a citizen referendum, officials should anticipate and plan for a prolonged approval process.

- **Regulations vary across states.** Public safety agencies should work with the appropriate legal and financial staff to review state-specific rules on bond issuance and allowability. Nuances such as state credit, debt-ceilings, and procurement processes must be considered. Officials should also understand rules surrounding repayment as many states have restrictions on permissibility. For example, public safety agencies are often restricted from using 911 surcharges to repay bonds.

- **Tax-exempt bonds have limitations.** When infrastructure is funded through tax-exempt bonds, public safety agencies may be restricted from certain purchases (e.g., software) and activities (e.g., leasing tower space) until the bond is repaid. In many cases, these restrictions limit the type and number of federal, private, and non-public safety users allowed on a statewide network and create revenue thresholds. These restraints may impact the functionality of a statewide communications system by limiting inclusion and interoperability with partner agencies.

- **Refinancing provides financial flexibility.** Officials should consider refinancing bonds issued during periods of high interest rates. Public safety agencies may receive several benefits when refinancing, including: 1) lower interest rates; 2) lower monthly payments; and 3) shorter repayment schedules. Depending on the jurisdiction, refinancing may require resident or legislature approval. As such, officials are encouraged to champion the benefits of refinancing to key stakeholders well in advance of a referendum or special election.

Arkansas uses bonds to fund communications improvements, as described in the following example:

Arkansas Continues to Fund Capital Improvements with Bonds

Following the 9/11 tragedy, Arkansas recognized the need for a reliable, statewide emergency communications network. Guided by the Arkansas State Police (ASP) and the Arkansas Division of Emergency Management (ADEM), the state identified multiple funding methods, including more than $20 million in tax-exempt bond funds. This revenue stream was used for upgrading the existing ASP communications system and adding additional tower sites in five counties. Arkansas began leveraging these bonds in 2004 to create the Arkansas Wireless Information Network (AWIN). Today, AWIN provides interoperability through a digital P25 700/800 MHz system, using over 100 tower sites and providing service for more than 30,000 users.

To repay the 2004 bond, Arkansas levied a small driver's license fee. This steady income stream, partnered with a lower, refinanced interested rate, allowed ADEM to repay their bond within 14 years—1 year earlier than expected. Following the success of the original 2004 bond, ADEM is working to issue a new $53 million tax-exempt bond in 2020 to fund capital improvements for the AWIN system over the next 10 years.

Source: *Penny Rubow, Arkansas Statewide Interoperability Coordinator, AWIN*



Special Taxes

Some public safety agencies have been successful in petitioning their SLTT governments and constituents for special taxes designed to pay for capital improvement projects. These capital improvements may include public safety projects such as building new facilities for public safety personnel and resources, upgrading existing or building new communications systems, or purchasing communications equipment. Special taxes allow jurisdictions to designate funding for capital improvements without the risk of diversion or use of other mechanisms (e.g., state and local general funds).

Public safety agencies should consider the following for special taxes:

- **Special taxes provide a steady income stream.** Use of special taxes establishes a specific stream of funding set aside for public safety capital improvements. This consistent stream enables public safety agencies to provide elected officials with specific costs and an accurate budget for project implementation. As a result, elected officials can control the rate and duration of the tax or tax increase to cover necessary costs.

- **Implementing special taxes may require a public vote.** While special taxes do not include other surcharges, most of these taxes require a special election vote from the citizenry. Elected officials should adequately educate and engage the public before the referendum. Public education and outreach are critical to explaining the purpose and terms of the proposed increase. They may be an effective means to raise awareness of public safety needs and initial capital costs for improvements.

- **Special taxes are often subject to limitations.** Special tax legislation is often drafted and approved to meet specific capital project requirements. Public safety agencies must be aware of these limitations when executing projects funded by this mechanism. Certain activities, such as operation and maintenance expenditures or funding for temporary projects, may not be allowable due to these special tax restrictions. In addition, special taxes often have sunset laws defining end dates, necessitating review and renewal, if appropriate.

- **Strong governance is critical between partnering jurisdictions.** Key governance bodies and leadership should clearly identify, document, and prioritize requirements. Projects are likely to be prioritized and funded to align with the collection of taxes. These agreements may be required by law and should be communicated and revised in coordination with citizens advisory committees, depending on the jurisdictions.

Jurisdictions in Georgia employ special taxes to fund and support public safety communications systems, as described in the following example:

Special Purpose Local Option Sales Tax Funds Public Safety and Infrastructure Improvements

Whitfield County, Georgia, proposed a Special Purpose Local Option Sales Tax (SPLOST) to pay for infrastructure improvements, including a $12 million P25-compliant 700/800 MHz radio system to replace the legacy analog VHF radio system. The SPLOST was approved by voters and funded the transition and implementation of the new radio system, which included interoperable connections to the Tennessee Valley Regional Communications System and other counties within Georgia.

In order to pass the SPLOST, voters had to approve the proposal to raise the sales tax by one percent (1%) each year for four years. Public safety representatives held a series of town hall meetings to educate voters on the need for improvements to the communications systems. In April 2015, the proposal passed, and the county expected to collect $63.6 million. In addition to the regional radio system's transition, a portion of these funds went to the acquisition of new fire trucks, a fire station, and police vehicles. Remaining funds were spent on improvements to roads and other infrastructure.

Based on the success of the 2015 SPLOST, the county pursued a 2020 SPLOST, which voters approved to continue raising funds for public safety communications and other expenses. The total expected revenues to be collected, beginning October 2020 through September 2024, is estimated to be $66 million.

Source: *Whitfield County, Georgia, SPLOST*



Unique Funding Streams

Several agencies have identified unique funding streams as a mechanism to support public safety communications systems. These funding streams provide a distinct source of revenue, which may be outside the scope of usual budgetary planning (e.g., leasing excess fiber network bandwidth, gambling tax revenue). Implementing unique funding streams may support initial capital investments, as well as ongoing maintenance and operations costs, based on the structure and predictability of incoming funds.

Public safety agencies should consider the following for unique funding streams:

- **Creative funding sources originate from thinking differently, unconventionally, or from a new perspective.** While most states have levied common surcharges on landline and cellular phones for several years, other surcharges (e.g., internet connections, boating fees, vehicle registrations, red-light cameras, firework sales) may also be available to fund public safety communications. Officials are encouraged to keep on open mind when determining available funding stream opportunities that may be unique to their area.

- **Opportunities may exist within businesses.** Surcharges may be applicable anywhere revenues are collected for unique industries, events, or landmarks. Agencies should review specific businesses in their areas and determine if a portion of funding collected can support public safety communications. These surcharges or taxes may apply or be a justifiable expense if public safety services are needed to support the business. Agencies are encouraged to work with elected officials to identify these potential opportunities and determine appropriate fees.

- **Excess fiber optic resources may be leased or licensed to generate revenue.** Several states and localities have deployed broadband capabilities and often laid more lines to account for future expansion or reserve space for revenue generation. As a result, some jurisdictions worked with the private sector to secure long-term fiber optic lease/license agreements. These agreements allow commercial providers to buy dark (i.e., unused) fiber to expand their services to unserved areas, without the large expense of building infrastructure. While the private entity gains access to fiber optics at negotiated terms, the public entity profits from a steady revenue stream.

- **Unique funding streams may rely on consistent public behavior.** Some funding streams are economically dependent on technology and routine public activities. For example, gambling has significantly decreased in some areas, as well as nationwide landline phone surcharges with the public's transition to cellular phones, and more recently to pre-paid and post-paid cellular usage. As a result, jurisdictions are seeking alternate funding streams or revising surcharges to reflect changes in public behavior. Public safety agencies must adapt to today's environment and plan for future impacts (e.g., the exponential increase of internet-connected devices), rather than hold onto legacy funding approaches.

- **Flexibility is critical for the viability of unique funding streams.** For funding streams that rely on the public's behavior, public safety agencies must recognize trends and adjust revenue planning accordingly. Agencies should work with technical and financial experts to: 1) understand variability; 2) create contingency plans in the event a funding stream loses significant income; and 3) ensure the long-term viability of funding mechanisms.

Louisiana and jurisdictions in Maryland and Missouri generate revenue through unique funding streams, as described in the following examples:

Louisiana Uses a Multifaceted Approach to Fund Statewide Communications System

The Louisiana Wireless Information Network (LWIN) provides public safety communications to approximately 101,000 local, state, and federal users through 142 tower sites. Louisiana operates LWIN on a "pay as you go" approach, in which users do not pay fees; rather, system users provide their own access and equipment (e.g., portable and mobile radios).

Without a dedicated funding stream to operate and maintain LWIN, the Louisiana Governor's Office of Homeland Security and Emergency Preparedness and the Department of Public Safety Services jointly submit annual appropriations requests to the Louisiana State Legislature. This approach allows the legislature to apply funding from different revenue streams, including riverboat gambling taxes, motor vehicle fees, and the state's general fund. The legislature has the flexibility to increase or decrease funding across these revenue streams from year-to-year. For example, if gaming revenue is lower based on public behavior, Louisiana adjusts amounts from the general fund to cover variances.

Source: *Travis Johnson, Interoperability Program Manager, Governor's Office of Homeland Security and Emergency Preparedness*

Baltimore County, Maryland, Licenses Dark Fiber to Generate Revenue

Since 2012, Baltimore County and the State of Maryland have trusted the Baltimore County Optical Network (BCON) to handle critical services for the Baltimore County Police Department, the Maryland Emergency Management Agency, and the Maryland State Police. BCON is a regional fiber network spanning more than 200 miles and connecting more than half of all county public schools, every public library, as well as several county and state agency sites. To support economic development, BCON leases access to dark fiber resources to the private sector. Current BCON customers include a public utility and an internet service provider.

Agencies may reference the Dark Fiber License Agreement and additional information on the BCON website. Revenue collected from licensing dark fiber is used for the maintenance of the communications network.

Source: *BCON*

A City in Missouri Demonstrates Flexibility to Fund Communications Network

North Kansas City, Missouri, built and owns liNKCity, a high-speed fiber communications network for residents, which is operated by the KC Fiber company. To fund this municipal broadband network, the city used local gaming revenue from a casino and marketed the amenity to attract businesses to move into North Kansas City. The city established an enterprise fund to oversee operations and anticipated network user fees to generate profit. However, the city's projections were over-estimated, and the network faced revenue shortfalls.

The city adjusted its funding approach and signed a 20-year lease agreement with an internet service provider to use the city-owned dark fiber. The private internet provider accessed this unused fiber to pass-through broadband services to surrounding areas, while the city benefitted from approximately $3.2 million in leasing fees. This steady funding stream allowed the city to stabilize finances for its municipal broadband network and expand access to high-speed internet across the region.

Source: *North Kansas City, Missouri, LiNKCity High-Speed Fiber Network*



Traffic Ticket Fees and Vehicle Surcharges

Similar to 911 surcharges, SLTT governments may increase fees for traffic tickets and vehicle surcharges (e.g., registration, licensing, title fees) to support public safety communications. While these fees are a way to supplement other funding sources, they often are not enough by themselves to support network operations and construction due to the fluctuation of revenue generated. Traffic ticket fees and vehicle surcharges also provide an ongoing source of supplemental income that can be used for overtime staffing, system enhancements, or portions of operational costs.

Public safety agencies should consider the following for traffic ticket fees and vehicle surcharges:

- **There is a wide variety of applications and competition for traffic ticket fees and vehicle surcharges.** This funding mechanism is widely employed across the Nation. Beneficiaries of generated funds vary greatly and may include courts, departments of motor vehicles, safety and education programs (e.g., improved traffic devices, click-it-or-ticket), and even designated medical funds for victims of traffic accidents. With this widespread application, public safety agencies may have to compete with other agencies and priorities for this funding.

- **Traffic ticketing technology and data systems are evolving.** Public safety agencies should inventory current modes and collection capabilities to identify potential improvements. Agencies may have a mixture of electronic ticketing (e.g., red light cameras, speed cameras, high-occupancy toll lane violations), which may be separate from other traffic and vehicle surcharges (e.g., speeding tickets and moving violations issued from a traditional traffic stop, registration fees). To effectively collect fees and surcharges and distribute among beneficiaries, agencies should automate data systems and processes to deposit allotments into the appropriate accounts.

- **Negative public perceptions may cause legal and political pressures against additional fees.** The public outcry of "taxation by citation" has been featured in multiple investigations, leading many to believe governments use their power to enforce traffic and other ordinances to raise revenue, rather than solely to protect the public. Lawsuits have used the practice of budgeting for—and thereby expecting—a certain amount of revenue from fines and fees when arguing against perceived injustices (e.g., speed traps, automated traffic enforcement devices). Public safety agencies should be prepared to combat this negative perception by delineating the benefits of imposed fees, such as supporting mission-critical communications in service of the general public.

- **Advancements in driving technology could one day limit traffic ticket fees and vehicle surcharges.** Today, governments can estimate collections using previous years' data on traffic violations, as well as the number of registered cars and drivers. However, the influx of autonomous vehicles (e.g., self-driving, driverless vehicles) stands to change our roads and transportation forever. Driverless vehicles could replace a significant portion of vehicular traffic, likely reducing violations such as speeding, and current traffic enforcement systems will need to adapt. Public safety agencies should understand these fees and surcharges are a volatile revenue source and should consider contingency plans for any downturn in this revenue service, as well as planning for the unknown future of collections.

Florida is one of many states that use traffic ticket fees and vehicle surcharges to fund its statewide communications system, as described in the following example:

Florida Applies Portion of Vehicle Registration and Ticket Fees to Maintain its Statewide Communications System

Florida's Department of Management Services (DMS) entered into a public-private partnership with its vendor to implement the Statewide Law Enforcement Radio System (SLERS). In exchange for providing state-owned communications towers and assets, the vendor offered $26.4 million in credits for radio equipment and accessories. To operate and maintain the SLERS network, Florida pays the vendor $15–18 million annually using motor vehicle and vessel registration surcharges. 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 radio coverage, capacity, and operation of the radio system.

While these collected DMS fees are not sufficient to support network operations on their own, the funding contributes to operational and system enhancement costs.

Source: *Florida Department of Management Services, SLERS*



Public-Private Partnerships

Several states have partnered with private entities to build or maintain statewide communications systems, offering significant cost-savings for states that were unable to fund large capital investment costs or sustain administration services. While many partnerships involve statewide systems, they also work on a smaller scale (e.g., equipment maintenance, resource sharing). Regardless of the scope, both entities must benefit from the partnership.

Public safety agencies should consider the following when using public-private partnerships:

- **A strong contract is necessary between public and private partners.** Agencies must work with industry vendors to develop an agreement that is mutually beneficial and encompasses all aspects of the partnership. The contract should include clauses to: 1) identify responsibilities, expenses, and plans for operations, maintenance, and upgrades; 2) utilize an existing or establish a governance structure or advisory board to consult on appropriate decisions; 3) address emergency restorations, including joint continuity of operations planning (COOP) activities; and 4) detail expiration dates, negotiation conditions, and terms for the end-of-contract transition. Setting these legal guidelines will ensure the public and private partners are not subject to unexpected costs or obligations.

- **End-users must have a voice in decisions impacting the system.** Public safety agencies should establish an advisory board with a balanced membership, including end-users, as well as operational and technical personnel from the public and private partners. Balanced membership refers to representation across state and local participants, as well as public safety disciplines. Implementing this governance structure establishes oversight from key collaborators that understand differing user needs.

- **Contract negotiations take time.** Developing an initial contract and renewing an existing contract may take several years to accomplish. Public safety agencies should anticipate lengthy legal and technical reviews from both the state and the vendor. Beginning contract negotiations early allows time for agencies to thoroughly review and establish priorities, expectations, and responsibilities with a private partner. Agencies should solicit contract experts to review clauses and advise on phrasing (e.g., the order of precedence clause, which describes the priority of documents in the case of any inconsistency or ambiguity).

- **Frequent communication between partners is essential.** Public safety agencies often rely on privately-owned infrastructure or services (e.g., utilities) to provide assistance during emergencies. For example, if a storm disrupts power and knocks down trees at a communications site, the public-private partners work together to gain access and restore operations. Given this experience, agencies understand the importance of open and frequent communication with partners, as this benefits current and future operations.

- **Market dynamics will impact contract renegotiations.** Agencies should begin to renegotiate contracts well in advance of the expiration date. Since partnerships are mutually beneficial, agencies should look for opportunities to improve contracts by expanding benefits or sharing additional resources, allowing both partners to continue on equal grounds.

South Carolina and Illinois have public-private partnerships for their statewide communications systems, as described in the following examples:

South Carolina Benefits from a Public-Private Partnership

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. At the same time, Spartanburg County and the SCANA Corporation, 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 MHz trunked radio network. 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, with more interested in joining, when and if infrastructure could be expanded into those areas.

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 under a contract with the State Division of Technology.

Today, the statewide 800 MHz radio and mobile data system (known as the Palmetto 800) has continued to grow and is one of the largest shared public safety radio systems in the Nation. The system serves over 80,000 voice users from over 950 different agencies representing local, state, and federal government agencies, law enforcement, fire services, emergency medical services, and power utilities in South Carolina, North Carolina, and Georgia. Over 94 percent of the state's population is serviced by sheriff's departments with access to the statewide system; 100 percent of county emergency management agencies and 911 centers have access to the system for interoperability and disaster coordination.

Through this public-private partnership for a shared network, South Carolina has been able to reduce costs and improve interoperability for all system users.

Source: *Palmetto 800 Radio System, Department of Administration, State of South Carolina*

Illinois' Partnership on STARCOM21

The Illinois Department of Innovation and Technology provides a statewide, 700/800 MHz, P25-compliant radio network to all public safety and public service agencies in Illinois via the STARCOM21 master contract. STARCOM21 is a groundbreaking public-private partnership with Motorola Solutions, commissioned by the state to enable seamless, interoperable communications. The STARCOM21 network is owned and operated by the vendor, while state and local agencies provide the licensed frequencies and pay service fees based on the network area used (e.g., statewide, county, city, or emergencies only) and in-kind contributions. The network currently serves more than 63,000 active subscribers from approximately 920 local, state, and federal government agencies and non-governmental entities.

Illinois maintains management of STARCOM21 services through a governance body, in which the vendor participates as a non-voting member. The partners work closely on system maintenance and upgrade plans covered by the vendor's contract and subsequently offer significant cost-savings to the state. This partnership is in its second 10-year contract and demonstrates a mutually beneficial relationship in which everyone believes in public safety and serving the community.

Source: *STARCOM21, Illinois Department of Innovation and Technology*



Leasing and Licensing Owned Towers and Infrastructure to Other Entities

Agencies that own communications towers and infrastructure may have the ability to generate revenue through leasing or licensing excess tower capacity, or use of infrastructure, to other public and private entities. These funds could pay for ongoing operational, maintenance, and upgrade costs, or payment on debt service bonds.

Public safety agencies should consider the following when leasing or licensing towers and infrastructure to other public and private entities:

- **Some agencies distinguish legal definitions of leasing versus licensing property to maintain oversight and ownership.** In legal terminology, a lease is a contract between a lessor and a lessee that provides the lessee with an exclusive interest in the property. A license, on the other hand, is when the owner/licensor gives permission to a licensee to conduct an action on the owner's property. Licensing offers flexibility and may be better suited to an agency's plans to generate revenue based on the importance of the asset. Regardless of the legal terminology used, public safety agencies must clearly delineate agreements with other entities to protect ownership and result in the desired outcome.

- **States, territories, and municipalities often have different laws and may restrict the ability to lease government property.** States often regulate the ownership and leasing of tower space and access to infrastructure. Agencies should understand the applicable laws and policies, as some states do not permit using their infrastructure in a for-profit venture. If your jurisdiction allows for leasing, agencies should ensure that leasing agreements are compliant with federal, state, and local laws (e.g., environmental planning and historic preservation policies, FCC rules) governing the use of communications towers and facilities. Lastly, agencies need to understand any restrictions on the type of entity interested in a leasing agreement. While other public entities may be permitted, specific private entities may require identification, tracking, limited access, or similarly imposed restrictions.

- **Leasing towers and infrastructure may expose public safety agencies to liability issues.** Agencies may be liable for tower damages or lost telecommunications revenue depending on their agreement. The leasing agreement should include clauses to: 1) define terms and responsibilities of both entities—the leaser/licensor or lessee/licensee; 2) determine whether the lease/license is exclusive or available to other entities; 3) identify fees, payment schedule, and delinquency stipulations; and 4) detail expiration date, renewal option, negotiation conditions, and terms for the end-of-agreement transition. Setting these legal guidelines will ensure the entities are not subject to unexpected costs or obligations.

- **An area's unique market environment determines potential revenue for leasing towers and infrastructure.** Prior to leasing resources, public safety agencies should conduct an assessment to analyze the fair market value and plan for future tower space needs. The U.S. Department of the Interior's Bureau of Land Management (BLM) publishes a fair market valuation formula to determine licensing charges for communication sites, and the U.S. Forest Service (USFS) has adopted a rental fee schedule for communications uses.[7] Public safety agencies can use this rental fee schedule to determine the approximate fees in their area, as well as adjust for other factors (e.g., demand, availability of other communication sites, coverage, population served).

[7] Every 1–2 years, BLM updates the rent schedule to calculate the fair market value for communication site rights-of-way (blm.gov/programs/lands-and-realty/communication-sites) and USFS updates the national rental fee schedule for communications uses (fs.fed.us/specialuses/special_comm.shtml).

Michigan and Vermont benefit from leasing and licensing of state-owned infrastructure to generate revenue, as described in the following examples:

Michigan Law Passed to Permit Leasing Tower Space

In 2014, Michigan passed a law (Act No. 564) allowing the co-location of public safety users' and non-governmental entities' equipment on the Michigan Public Safety Communication System (MPSCS) towers and property. The legislation stipulated that all costs associated with planning, installing, and maintaining co-location equipment are the responsibility of the entity wishing to co-locate on the MPSCS infrastructure. Government agencies could co-locate on the MPSCS towers immediately. In contrast, non-public safety government entities were required to wait three years after the law went into effect to co-locate on the MPSCS towers for any "commercial or business purposes." Further, the legislation required supervision and inspections to ensure that the integrity of the MPSCS was not compromised by co-location. Michigan reserved the right to deny requests to co-locate if the installation, attachment, or co-location would interfere with the "optimum operation" of the MPSCS.

Agencies may reference the law on the Michigan Legislature website, as well as Michigan's co-location project steps and template for evaluating co-location requests on the MPSCS website. Revenue collected from leasing tower space is used for the payment of debt service for bonds that financed the construction of the communications system.

Source: *MPSCS, Co-location*

Vermont Licenses Access and Space to Statewide Communications System

The State of Vermont owns communications towers and infrastructure on several mountaintop sites and charges for facility space to other public and private entities (e.g., U.S. Postal Service, Verizon, AT&T). This practice of licensing access and space creates revenue for the state, which is used for capital improvements and operations costs of the statewide system. Vermont's licensing structure is based on a fair market valuation of the assets based on the site location and population served, while also referencing the U.S. Forest Service's formula. Once Vermont determines the fair market value of a particular asset, it then negotiates with other entities seeking access.

The state also partners with other entities at no cost. For example, Vermont has a rich history of sharing communications sites with the U.S. Customs and Border Protection (CBP) along the United States–Canadian border. CBP offers the use of federally-owned tower space to Vermont, and in return, Vermont permits CBP access to state-owned facilities. This agreement between federal and state agencies has been in place for 30 years, with the additional benefit of interconnecting with Canadian counterparts through CBP's secure gateway links.

Currently, Vermont is working with the FirstNet Authority to use its existing sites that meet FirstNet requirements (e.g., high-speed backhaul). As a best practice when building new communications sites and facilities, Vermont allots space for licensing to other public and private entities for generating revenue or building partnerships.

Source: *Terry LaValley, Director of Radio Technology Services, Vermont Statewide Interoperability Coordinator, Department of Public Safety*



Leasing Equipment

Agencies may choose to lease communications equipment from vendors as a cost-saving measure in the near-term. Leasing equipment allows agencies to acquire assets with minimal initial expenditures, as well as spread costs over several years. Various contract options and terms may also include maintenance services, hardware replacements, or software upgrades based on the leasing agreement.

Public safety agencies should consider the following when leasing equipment:

- **Regulations vary across jurisdictions.** States, territories, and municipalities have different rules governing leased equipment. Public safety agencies must consider all regulations, from procurement (e.g., competitive bidding) through contract expiration, prior to leasing. For example, some jurisdictions have laws that restrict or disallow financing by limiting the number of years an agency may lease equipment. Therefore, public safety agencies should partner with the appropriate legal and financial staff to understand allowability.

- **Tailoring leasing agreements or contracts provides flexibility.** Public safety agencies should consider the various contract options and terms prior to leasing. For example, officials may choose to sign a "lease-to-own" contract, which stipulates that at the end of the contract term, the agency will retain leased equipment. Another option is to lease equipment for a set period, where following contract expiration, equipment is either returned in good condition or with a levied fee if damaged or altered, or a new lease is signed. Both options allow jurisdictions to disperse costs over time instead of purchasing equipment for a substantial up-front fee. Leasing equipment can also help agencies stay on top of the latest advances in equipment and technology.

- **Conducting a value analysis of procurement options is critical during planning and budgeting.** Public safety agencies should weigh the return on investment of leasing equipment to inform their planning and budgeting decisions. Two common drawbacks include inflated costs and outdated equipment. In some cases, leasing equipment over time may be more expensive than purchasing directly from vendors. In other cases, lease-to-own contracts may leave agencies with outdated equipment at the end of an agreement. It is a best practice for agencies to review interest and leasing rates, in addition to the anticipated lifespan of equipment, prior to contracting.

- **Refurbished equipment may provide a cost-effective alternative.** In the event a public safety agency cannot purchase or lease new equipment, refurbishing existing equipment or obtaining another entity's disposed equipment may be a viable option. Agencies that refurbish equipment can often obtain used radios or subscriber units at a reduced cost. While only a temporary measure, refurbishing and reusing equipment shifts the financial burden to maintenance and repairs. Refurbishing also benefits the public safety community as it prevents equipment from reaching obsolescence or falling into malicious hands. In many cases, agencies can utilize refurbished equipment while saving to purchase or lease new equipment.

California leases equipment as needed, as described in the following example:

City of Concord, California Uses Lease-to-Own Option to Obtain Equipment

In 2010, the City of Concord was facing a situation in which its legacy radio system for public safety communications was nearing the end of its useful life. The City Council adopted Resolution No. 10-77. The resolution authorized participation in the East Bay Radio Communications System Authority, issued a bond, and approved participation in the regional interoperable radio system for all responders in Alameda and Contra Costa Counties. This decision required the city to purchase digital P25-compliant radios that operate on the regional system.

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) over time, and then 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." This option allowed the city to budget for the costs, spread out payments, 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.

Source: *City of Concord, California*



Grants

The Federal Government uses grants to fund ideas and projects that provide public services, stimulate the economy, and implement public policies. A grant, as distinguished from a contract, is used to acquire property or services for the direct benefit or use of the recipient or sub-recipients. Grants are often used to pay for capital costs related to public safety communications systems, upgrades, and equipment; however, grants may also support investments in emergency communications planning, training, exercises, and personnel.

Public safety agencies should consider the following for grants:

- **Search for funding opportunities on Grants.gov.** All federal grant guidance announcements, detailed within program-specific Notices of Funding Opportunity (NOFOs), are posted on Grants.gov. As the leading resource for finding federal grant opportunities, this webpage provides a common site for federal agencies to post discretionary funding opportunities and for entities to find and apply to them. Grants.gov also serves as a resource for grant applicants by providing application writing tips, support, and educational opportunities, plus a collaborative workspace for application development. Public safety agencies should work with their grant officials (e.g., State Administrative Agency) to regularly search Grants.gov and identify potential funding opportunities for emergency communications projects.

- **Federal grants have several common requirements and restrictions.** Many laws and regulations are in place to govern federal grants, including: 1) authorizing statutes stipulating the program's purpose; 2) Office of Management and Budget (OMB) Circulars, which provide uniform guidance to agencies; and 3) individual program requirements that detail the grant's goals and objectives, eligible applicants, and the application process. Common requirements for grants funding emergency communications involve compliance with environmental planning and historic preservation laws, adoption of the National Incident Management System, and mandatory risk assessments. Some federal grants require applicants to align project activities to their SCIP, so it is a best practice for all applicants to describe how proposed projects align with strategic goals and performance plans. Common restrictions on federal grant funding disallow commingling or duplicating funds, use of federal funds for cost sharing or matching requirements, and supplanting (or replacing) funds previously allocated for the same purpose.

- **Grant funding levels and priorities vary year-to-year.** Over the past decade, the fluctuation of grants funding emergency communications (e.g., elimination of dedicated funding streams in favor of consolidated programs, required spending on federal priorities) has increased competition for funding. As such, agencies should work with other jurisdictions and disciplines to coordinate resources and projects, facilitate asset-sharing, and avoid duplication of efforts and purchases. Additionally, when developing funding proposals, SLTT grant applicants should work with state-level planning offices and SWICs to incorporate emergency communications needs into statewide plans and to ensure states and territories prioritize communications projects.

- **Partnerships extend eligibility for broader federal opportunities.** Several federal programs are not solely focused on public safety communications (e.g., U.S. Department of Agriculture's Rural Telecommunications Programs), but can be used to support emergency communications projects. For example, programs focused on infrastructure improvements could increase access to 911 services, provide all hazards warnings, improve integration and interoperability of emergency communications, provide critical infrastructure protection and outage prevention, and increase the reliability of standby power to emergency responders. Public safety agencies are encouraged to identify additional funding sources, such as rural grants and loans, and partner with eligible entities for those programs to improve communications infrastructure.

- **SAFECOM Funding Resources are available to assist agencies.** CISA, in coordination with SAFECOM and NCSWIC, develops funding resources to assist public safety agencies in identifying and applying for grants. The main guidance produced through this partnership is the *SAFECOM Guidance on Emergency Communications Grants*, as described in this section's example. CISA also maintains the *List of Federal Financial Assistance Programs Funding Emergency Communications*, which summarizes federal funding opportunities that may support emergency communications investments. Public safety agencies should reference the SAFECOM Funding Resources webpage when prioritizing emergency communications investments and applying for federal grants.

For additional information on emergency communications grant guidance, see the following example:

SAFECOM Guidance on Emergency Communications Grants (SAFECOM Guidance)

SAFECOM Guidance is the essential guide for SLTT government agencies planning and applying for federal funding to invest in emergency communications projects. Updated every year in coordination with federal officials and public safety experts, *SAFECOM Guidance* applies to all federal grants funding emergency communications and addresses all types of communications equipment, including land mobile radio, data exchange, alerts and warnings, and IP-enabled technologies such as public safety broadband and NG911 systems. *SAFECOM Guidance* provides direction to grant applicants on:

- Recommendations for planning, coordinating, and implementing projects that support emergency communications;
- Emergency communications activities typically funded through federal grants;
- Best practices, policies, and technical standards that help to improve interoperability across investments; and
- Resources to promote grant recipient compliance with technical standards and grant requirements

While *SAFECOM Guidance* provides information on national policies, eligible activities, best practices, and technical standards that are common to most federal emergency communications grants, it is important to note that grants are administered by numerous federal agencies and are subject to various statutory and programmatic requirements. Thus, grant applicants should review individual guidance or NOFOs carefully to ensure their proposed activities are eligible, and all standards, terms, and conditions are met. With the caveat to follow program requirements when applying, *SAFECOM Guidance* is recognized as the primary guidance on emergency communications grants by the Administration, OMB, and federal grant program offices.

Furthermore, the Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) grant recipients (including sub-recipients) who receive federal funding for communication projects and related activities must comply with the *SAFECOM Guidance* as detailed in DHS Standard Terms and Conditions. While only DHS and FEMA mandate *SAFECOM Guidance* compliance, all entities are highly encouraged to follow the recommendations to ensure interoperable, resilient, and fully effective communications.

Source: *SAFECOM Funding Resources*

LOOK AHEAD

> According to the 2018 Nationwide Communications Baseline Assessment, most public safety organizations have either no funding or insufficient funding for capital investments in interoperability solutions, interoperability-related operations, or maintenance costs. At the agency level, shortfalls in funding continue to affect the ability to properly maintain systems, conduct overall system lifecycle planning, and make decisions.
>
> *National Emergency Communications Plan*

Today's financial challenges are expected to persist given trends in the emergency communications ecosystem and the technology evolution. Public safety agencies must plan for the integration and alignment of technologies (e.g., LMR, NG911, FirstNet Authority's Nationwide Public Safety Broadband Network, as well as alerts, warnings, and notifications systems) while competing with other priorities for funding. Agencies must also balance fluctuating funding levels due to economic downturns or national events (e.g., public health crisis, geopolitical tensions causing budget reductions). In addition, the public safety community will continue to face hurdles for funding mechanisms (e.g., restrictions on the use of 911 surcharges, partnerships/resource sharing with other agencies) until policy reforms are enacted. All of these factors will affect agencies' abilities to fund mission-critical communications well into the future. With these realities in mind, the public safety community must evolve and adapt to the times.

The rapid rate of technology advancement will continue to outpace the public safety community's acquisition cycle. New technologies have the potential to be expensive while also enhancing public safety capabilities. When considering long-term funding plans, public safety agencies should consider impacts from these advancements, such as mitigation strategies for increased risks (e.g., system failures, cyber attacks, data breaches), recovery planning, and training personnel on the latest security, resiliency, continuity, and operational practices as new technology and methods are made available. Agencies must continuously fund every element of the Interoperability Continuum. For example, integrating and aligning emerging technologies (e.g., wireless data networks, artificial intelligence, mobile communications devices) with existing capabilities will necessitate capital investments and equipment upgrades. Newly integrated technologies will also have impacts on governance, standard operating procedures, use, training, and exercises.

In addition to integrating new technologies, public safety agencies must consider changes to national-, state-, and local-level priorities as they compete for limited funding. Throughout election cycles, agencies should be aware of their jurisdiction's economic and political climate and factor impacts on long-term budget planning. In some cases, shifting priorities may impact the availability of emergency communications funding. For example, the Department of Homeland Security identified four critical priority areas for attention in the FY 2020 grant cycle: cybersecurity, soft targets and crowded places, intelligence and information sharing, and emerging threats. Applicants were required to submit Investment Justifications that addressed these priorities, which impacted the amount of funding available for their area's priority communications projects. To mitigate against potential funding reductions, agencies must anticipate shifting priorities and adapt budget plans as needed. Remaining vigilant and diversifying funding sources will help deflect negative impacts from economic downturns or other causes.

Lastly, there are common state and federal restrictions that impact public safety funding. For example, the FCC currently requires annual reports of fee diversion and supports legislation that would allow penalties to be assessed for 911 surcharge diversion. However, as technology advances, 911 calls will be placed on any internet-connected device, which could support broader collection and use of 911 surcharges. Similar changes could be passed on limitations of private or federal agencies accessing statewide systems, resulting in increased partnerships, resource sharing, and interoperability across the community. Agencies should work with the appropriate legal and financial staff to understand limitations and allowability, and in some cases, attempt to enact change through appropriate legislative, regulatory, or policy-making bodies.

CONCLUSION

While emergency communications is a recognized priority within public safety, funding remains a significant challenge. Acknowledging that effective response requires reliable, secure, operable, and interoperable communications systems, it is imperative for public safety agencies to identify solutions that mitigate budgetary challenges. However, there is no simple, one-size-fits-all solution to funding. Instead, public safety agencies should seek a diverse portfolio of funding mechanisms to ensure mission-critical operations are adequately resourced. Regardless of the funding mechanisms employed, agencies must work with the appropriate decision-makers to identify and advocate for funding throughout the entire system lifecycle. As such, public safety agencies are encouraged to use this guide to find funding solutions and implement budget decisions that are well-suited to their community.

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, SLTT, 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 DHS to share best practices and lessons learned with others.

NCSWIC is comprised of SWICs 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 within and across states and with their international partners along the borders.

The Joint SAFECOM and NCSWIC Funding and Sustainment Committee developed the *Funding Mechanisms for Public Safety Communications Systems* with support from CISA. This document reflects the expertise and knowledge of SAFECOM and NCSWIC members, and the coordination efforts of CISA in bringing stakeholders together to share technical information, best practices, and lessons learned in funding and deploying public safety communications systems. Questions on this document can be sent to: SAFECOMGovernance@cisa.dhs.gov and NCSWICGovernance@cisa.dhs.gov.