LEGISLATIVE RESEARCH COMMISSION

PROGRAM REVIEW AND INVESTIGATIONS COMMITTEE

911 Services and Funding: Accountability and Financial Information Should Be Improved

Research Report No. 383

Prepared by

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Program Review and Investigations Committee

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Research Report No. 383

Legislative Research Commission
Frankfort, Kentucky
lrc.ky.gov

Adopted December 8, 2011

Paid for with state funds. Available in alternative format by request.

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Abstract

Kentucky's 911 service covers all counties, but it is a patchwork of jurisdictions and funding. Local governments operate most call centers and provide most of the funds using a combination of local 911 fees and general revenues. State government operates a few call centers and collects and distributes 911 fees from cell phones. There is limited accountability and little information on the total cost and revenues used for 911. A project is under way to collect that information to assist with needed decisions on how to govern and fund 911 services in the future. This report makes 12 recommendations related to oversight, funding, data collection, and service.

Foreword

Program Review staff wish to thank the director and staff of the Commercial Mobile Radio Service Emergency Telecommunications Board for providing information for this report. Program Review staff would also like to thank officials and staff of the Kentucky State Police, the Auditor of Public Accounts, the Department of Local Government, the Department of Revenue, and the Public Service Commission.

Within the Legislative Research Commission, Program Review staff would like to thank the staff of the following committees: Agriculture and Natural Resources; Appropriations and Revenue; Energy; Local Government; and Veterans, Military Affairs, and Public Protection, as well as the LRC Library.

Staff appreciates the assistance of local officials too numerous to mention. Staff would like to thank the many associations and providers who assisted in this study.

Robert Sherman
Director

Legislative Research Commission
Frankfort, Kentucky
December 8, 2011

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Summary

Since 1968, the digits 9-1-1 have become a nearly universal resource in North America for reaching emergency services quickly. Basic 911 service connects the caller with a public safety answering point. Enhanced 911 also sends the caller's location automatically in most situations. A few Kentucky counties still do not have enhanced 911 for landline phone calls, but all Kentucky counties have enhanced 911 for wireless calls. The automatic location information, however, is variable and in some places unreliable.

Oversight

Responsibility for 911 services is split between state and local government. The state is responsible only to ensure wireless calls are delivered and handled properly and to distribute the wireless 911 fee. Local governments have primary responsibility, and many of them work together to provide 911 services. It appears that some counties and cities never had or could not find written agreements regarding these services. Some local governments have formed interlocal boards to operate or contract for 911 services. Most of the boards receive 911 services through the Kentucky State Police, but local control may be limited in some of those situations.

Recommendation 2.1
All arrangements for 911 services that involve more than one local government should be made by written interlocal agreement. An interlocal agreement for 911 services should be among the local governments only and should empower one local government, or create a 911 board, with the authority to control funds and provide or contract for 911 services. If there is a 911 board, it should designate or contract with a fiscal agent. A 911 board should issue an annual audited financial statement. Local 911 fees should be remitted directly to the empowered local government or 911 board. The General Assembly may wish to consider codifying some or all of these terms.

Recommendation 2.2
In order to preserve local control, state agencies providing local 911 services should do so on the basis of a contract with a local government or 911 board and should not be parties to interlocal agreements for 911 services unless it is required by the Interlocal Cooperation Act. A state agency should not have voting representatives or officers on a 911 board. The General Assembly may wish to consider codifying these terms.

The Commercial Mobile Radio Service Emergency Telecommunications (CMRS) Board certifies the public safety answering point (PSAPs) that are able to handle wireless enhanced 911, known as E911, calls correctly. Certification makes a PSAP eligible for state wireless 911 funds. A geospatial audit, confirming the ability of a PSAP to locate a wireless caller, is required for certified PSAPs but currently is not a prerequisite and is not required to be repeated.

Recommendation 2.3
As it has proposed, the CMRS Board should make passage of a geospatial audit a prerequisite for certification of a public safety answering point and should specify an ongoing program of geospatial audits. The board should also ask its auditors to include sufficient testing to assess the location service accuracy of wireless providers in each jurisdiction and to record that information in their geospatial audit reports.

PSAPs are supported through a combination of local 911 fees, local general funds, and state cell phone fees. The statutes differ on the permissible uses of local and wireless 911 fees. The local 911 statute is vague on this point.

Controls on 911 funds are inconsistent. The state auditor and city auditors have no specific responsibility to audit local 911 funds. The CMRS Board may audit only wireless 911 funds and does so infrequently. Audits are difficult because of differences in the permitted uses of 911 funds and because some PSAP operators commingle local and state 911 funds with each other and with general funds and do not attribute all the actual costs to the PSAPs.

Recommendation 2.4
The General Assembly may wish to clarify the CMRS Board's audit cycles for providers and authorities that operate PSAPs. Regarding providers, the General Assembly may wish to consider whether the board should audit all providers, all major providers with a sample of minor providers, or a sample of providers every 24 months. Regarding PSAP authorities, the General Assembly may wish to clarify whether all should be audited every 24 months or whether a rotating cycle of audits should be permitted. In the absence of such clarification, the board should audit all providers and all PSAP authorities every 24 months.

Recommendation 2.5
The General Assembly may wish to consider requiring that

- local and wireless 911 revenues be maintained in separate restricted funds to ensure expenditures from these funds are easily auditable and distinct from other local funds;
- each entity operating a PSAP create a 911 cost center or have some other means to identify 911 expenses; and
- all entities that collect, receive, transfer, or expend dedicated 911 funds, whether local or wireless or both, be subject to audit by the CMRS Board or another auditing authority.

Funding of 911 in Kentucky

A statutory responsibility of the CMRS Board is to review the sufficiency of the wireless 911 fee. The board has not produced any reports on its reviews since 2005, and the statute is not clear whether reports are required.

Recommendation 3.1
The General Assembly may wish to consider modifying KRS 65.7629(4) to clarify whether the CMRS Board should report on the sufficiency of the rate of the CMRS service charge at least once every 24 months using its audits and the information gathered under KRS 65.7630 and should report the methodology and findings of each review to the governor, LRC, and other officials.

Although the original 911 statute clearly identified local governments as the authorities responsible for 911 services, the wireless 911 statute referred to PSAPs as the recipients of funding and as entities subject to audit. However, PSAPs have no standing as fiscal agents. In all cases, a local or state government entity actually receives and manages the funds. If the statute were interpreted strictly, the CMRS Board would be unable to remit funds to the entities that operate and manage PSAPs. As it is, the board has not audited some of the entities that actually handle the funds.

Recommendation 3.2
The General Assembly may wish to consider whether to amend KRS 65.7621 to 65.7643, when referring to distributing and auditing funds, to replace the term "PSAP" with a reference to state or local government authorities responsible for 911 services. The General Assembly may also wish to clarify how wireless funds should be distributed and controlled when local governments obtain 911 services from a state agency, and whether wireless funds distributed on behalf of a certified PSAP may be used to assist a noncertified secondary PSAP to handle wireless enhanced 911 calls.

The cost of most PSAP operations exceeds 911 funding and requires supplemental general revenues. However, some local governments and interlocal 911 boards that contract with the state police for 911 services have been able to accumulate surplus 911 funds. There is no statutory prohibition or limit on surpluses, except that they may be used only for the original purpose.

Recommendation 3.3
The General Assembly may wish to limit the amount of 911 funds that a local government may hold in reserve for future expenses and to require local governments to reduce 911 levies or return state wireless funds when revenues exceed costs.

Funding Options for 911

Local governments have wide latitude in raising 911 funds, but most levy a monthly fee on landline phones and supplement this with general funds; none has tapped other 911 funding options. Landline fees vary from no fee to $4.25 per month, and revenues have declined. The state wireless fee is 70 cents per month, and revenues may be reaching a plateau. The funding system creates disparities between residents in different jurisdictions and among types of service providers. In addition, individuals with multiple devices pay multiple fees.

Levying a 911 fee on phone service or communications devices is only one of many possibilities. Funding could come entirely from general funds or could be through dedicated 911 fees. If there are dedicated fees, their intended uses need to be clarified, and it would be helpful to determine whether they should pay for those uses entirely or just in part. Other choices that might be considered are who should pay the fees, what the fees should be levied upon, whether different fees and rates should be assessed by different local governments and the state; and whether fees should be distributed uniformly or should support smaller communities at a greater level.

New communications technologies and ways of delivering communications services present challenges to existing dedicated 911 fees that apply to phone lines and devices. The wireless 911 fee is levied differently for postpaid and prepaid cell phone service. Postpaid, or traditional monthly billed subscribers pay 70 cents on each bill. Prepaid providers have a choice of two options, but some providers refused to remit the fee. Courts so far have ruled that the Kentucky wireless fee applies to prepaid wireless service. However, the current prepaid fee model produces significantly less revenue per phone than the postpaid fee and, unlike the other 911 fees, prepaid providers have been paying at least some of the fee from their own revenues.

The wireless industry has proposed a point of sale fee for prepaid service, similar to a sales tax. The National Conference of State Legislatures adopted a model 911 point of sale bill, and several states have passed a version of it. Program Review staff examined the options for a point of sale fee and found that it distributes the fee burden unevenly and has opportunities for potentially large losses of revenue. If such a fee were to be considered, Program Review staff analysis suggests that it would have somewhat less variability in its burden on customers and would be more likely to meet revenue targets if it

- is based on a percentage rather than a flat fee;
- is set initially to a rate that is likely to generate an average of 70 cents per prepaid device;
- requires prepaid providers to submit Kentucky device counts to the CMRS Board at least quarterly;
- empowers and requires the CMRS Board by regulation to adjust the POS fee as needed to ensure that it produces the same revenue per device as the postpaid fee;
- compensates sellers for their reasonable costs of collecting and remitting the fee;
- compensates the Department of Revenue for initial start-up costs if the department can demonstrate the likely start-up costs;
- compensates the Department of Revenue for ongoing costs that it can demonstrate;
- requires the Department of Revenue to disclose detailed remittance information by seller to the CMRS Board upon request; and
- empowers and requires the CMRS Board by regulation to define prepaid wireless service so that all existing and future offerings will be covered and conventional contract wireless and similar services will be excluded.

Lifeline service also should be considered when determining how to levy fees for 911 service. Lifeline is a subsidized service for low-income individuals. Some Lifeline service is landline, some is postpaid wireless, and some is prepaid wireless. Levying a 911 fee, even a point of sale fee, might be difficult for prepaid wireless Lifeline service.

Other states use a variety of methods to administer and fund 911 services. Some approaches are too recent to evaluate yet. One promising approach determines the actual costs of running the PSAPs and sets funding levels using the cost trend over several years.

Statewide 911 Financial Statement

During its 2011 Regular Session, the General Assembly passed Senate Bill 119, which required the CMRS Board to collect information and evaluate 911 funding and expenditures. The board was unable to determine the full cost of 911 services and the contribution of each revenue source toward that cost in time for this report.

It would be helpful to have a comprehensive statewide 911 financial statement showing all 911 costs and revenues before making changes to 911 funding. Because of the complexity of local and state oversight and the wide variety of interlocal arrangements, it probably is necessary for board staff to visit all the entities that operate PSAPs and those that cooperate or arrange with them for 911 services. Other states have used a similar approach.

Recommendation 5.1
The CMRS Board staff should visit all PSAPs and related local governments and boards initially to establish who has the information required by SB 119 and to validate the information. Afterward, CMRS Board staff should visit all PSAPs and related entities periodically to verify SB 119 data or should include data validation in its audit contract. The General Assembly may wish to consider permitting the board to allocate funds to these tasks beyond the current administrative fund limit.

Recommendation 5.2
The CMRS Board should compile a complete statewide 911 financial statement that shows all revenues contributing to and all costs of providing 911 services, covering all primary and secondary, certified and noncertified PSAPs, including

- all dedicated 911 funds starting at their source and indicating all entities that handle them;
- all other funds that flow to PSAPs starting at their source and indicating all entities that handle the funds;
- itemized costs of operating each PSAP;
- the source and full value of facilities, services, or other items received by PSAPs at discounted or no cost for which a PSAP otherwise would have to pay;
- costs of operating any advisory and management boards and any other activities necessary to manage and operate a PSAP, including any costs incurred between a funding source and the PSAP;
- the value of non-911 tasks performed by PSAP staff; and
- any cash balances, other assets, and liabilities related to providing 911 services.

Recommendation 5.3
As part of the statewide 911 financial statement, the CMRS Board should

- examine 911 fee collections on all phone service plans for all telecommunications providers, including the amounts that providers keep to cover 911 fee collection costs;
- determine the amounts paid to all telecommunications providers for delivering 911 calls to PSAPs, whether they are reasonably caused by 911, and whether they represent the actual cost to deliver the calls; and
- assess the need for continued wireless provider cost recovery.

Management of Costs and Service

Despite expectations, consolidation does not appear to generate large savings, but consolidation does seem capable of providing a high level of service. The advantages of consolidation can be improved service, increased flexibility, and moderate cost savings over the long term.

The Kentucky State Police has provided enhanced 911 wireless service for some counties and both landline and wireless 911 service in other counties. The level of service, however, is inconsistent. Responders in some counties have expressed strong dissatisfaction while others have reported good service.

Recommendation 6.1
The Kentucky State Police should conduct a review of its 911 services to counties, including response time measures, compliance with local protocols, and satisfaction of local responder agencies.

Phone service represents a large cost to PSAPs. More information is needed about the prices that landline providers charge to PSAPs and to wireless providers for access to the landline system. Similarly, more information is needed on the costs that wireless providers submit for recovery from the CMRS Board.

Some local governments in Kentucky have developed innovative methods of providing 911 service that have produced significant cost savings. In addition, the effort to move 911 call delivery onto the Internet has potential for even greater cost savings if legal and technical issues are addressed. Newer communication methods such as texting do not work with existing 911 systems but should work with next generation 911. The CMRS Board is positioning itself to implement the transition as soon as possible.

Chapter 1

Overview of 911 Services and Funding

Early phone systems required an operator to patch through every call. When callers wanted emergency assistance, the operator patched them through to the appropriate agency. After direct dialing was implemented, callers still dialed "0" for emergencies, and the phone company operator remained the first choice for reaching emergency responders quickly.

A nationwide direct dialed emergency number was proposed to allow individuals to reach a responder more quickly by removing the operator from the loop, and it relieved phone companies from answering a large number of emergency calls. In early 1968, AT&T agreed to implement 911 as a universal emergency number, and the first local 911 service began shortly afterward.

Enhanced 911, known as E911, allows for identifying the number and location of callers. E911 was implemented in phases and is still being improved while new communication devices are being developed.

Improvements were made through the years. Enhanced 911, known as E911, permitted the call taker at a public safety answering point to see the number and address of the caller's phone. Changes were made to permit cell phone 911 calls to be routed to the correct answering point in most cases. E911 for wireless phones was implemented in phases and is still being improved. Newer communication methods such as voice over Internet protocol and texting are a challenge for 911 and will be addressed in the next generation 911 being planned today.

How 911 Works

Since its inception, 911 has primarily served voice calls.

Since its inception, 911 has primarily served voice calls, first from landline phones and later from cell phones. A new generation of users has adopted other devices and technologies and expects to be able to contact 911 with any of the available methods. Appendix B lists the potential methods of contacting 911 and indicates whether and how each can currently reach 911.

Routing the 911 Call

When someone dials 911, the phone provider has to route the call to the correct public safety answering point (PSAP). There are three basic methods, depending on the type of call.

Calls from landline and cable phones are sent to the correct public safety answering point (PSAP) through a routing device. The router looks up the service address and sends that along with the call.

Landline and Cable Phone Calls. For traditional landline phones and the newer cable phones, the phone equipment determines that the call is a 911 call and sends it from the local exchange to a device called a selective router. The selective router uses the calling phone number to look up the service address in a database. Landline and cable companies in the service area keep the database up to date. Once the address is known, the selective router uses another database to determine which PSAP should receive the call. The selective router sends the call, along with the caller's location, to the correct PSAP.

Smaller phone companies might not use a selective router. Rather, they might run a direct line from each exchange office to the local PSAP. The PSAP can use the phone number displayed on caller ID to look up the service address in a database. This method is used in some Kentucky counties.

Cell phones have no service address, so the provider assigns each cell tower antenna face to a PSAP.

Wireless Calls. Because cell phones have no service address, cell phone numbers do not appear in the address database. Instead, the database contains the cell tower antenna location. Most antennas have three sections called faces that pick up signals from different directions. For antennas located near jurisdictional boundaries, calls may go to different PSAPs based on the face that picks up the call.

When a cell phone user dials 911, the wireless provider determines that it is a 911 call and generates a special location code using the cell tower location and the antenna face that picked up the call. The wireless provider sends the call and the location code to the landline company that handles 911 calls in the region. The landline company's selective router looks up the code in the address database and then looks up the PSAP associated with that antenna face and transfers the call.

The wireless provider also attempts to locate the caller and sends latitude and longitude information to the landline provider's address database. The PSAP will ask the database for updates on this information and plot it on a map display.

Meanwhile, the wireless provider uses a mobile phone location method to try to locate the caller more precisely. If it is successful, the wireless provider sends location information in the form of latitude and longitude to the selective router's address database. At first, only the tower location and face direction are sent, but the provider updates the information in the database as it determines a more accurate location. The PSAP call taker sends requests to the address database to get these updates.

Because the location is in geographic coordinates, the PSAP has no street address information. Instead, the PSAP uses geographic information system software to plot the location on a map and identify the closest street addresses.

The accuracy of cell phone location information can be poor.

The first information that a PSAP receives, then, is the location of the tower and probably the direction from which the call came. After a delay of perhaps 15 seconds, the PSAP requests an update and usually receives coordinates that are closer to the caller's actual location. Further requests can narrow the location further or can follow a caller who is moving. The accuracy of cell phone location information can be poor, however.

Some voice over Internet protocol (VoIP) devices can be moved without the provider's knowledge. It is up to the customer to tell the provider where the nomadic device is.

Nomadic Internet and Telematics Calls. Unlike the fixed voice over Internet protocol (VoIP) services that cable phones provide, there is a form of VoIP called "nomadic." Nomadic VoIP uses a device that the customer can attach to any Internet connection. Vonage is a well-known nomadic VoIP provider. Nomadic VoIP providers do not know where the customer's device is unless the customer registers the correct address every time the device is moved.

Automobile telematics such as OnStar may be able to determine the location of the car, but they cannot usually route a call to a PSAP. National call centers usually handle telematics calls and some nomadic VoIP calls.

Similarly, some automobiles use OnStar or other telematics services that can send requests for emergency assistance. Telematics providers know where the call is coming from based on global positioning system units in the vehicles, but most telematics systems do not have the ability to call 911 directly.

Nomadic VoIP and telematics providers often use a national call center to field emergency calls. Nomadic VoIP callers probably will have to tell the call center their addresses because the Internet provides little information about the location of a connection. Telematics devices usually can send a more accurate location. Even so, the call center staff must identify the correct PSAP and route the call.

Newer Technologies and 911

Several of the newer communications methods cannot connect to 911.

The fixed and nomadic VoIP discussed above are called "interconnected." The VoIP provider assigns each customer a traditional phone number, and the caller can receive calls from and place calls to traditional phone numbers. Noninterconnected VoIP providers, in contrast, do not assign traditional phone numbers and do not offer 911 service. Customers may be able to place calls to traditional phone numbers, but they cannot receive calls from them. Skype is a well-known VoIP provider that is not

interconnected. The Federal Communications Commission is considering whether to treat some of these providers as interconnected for the purpose of 911 if they are able to place a call to a traditional phone number ("In the Matter of Amending").

E-mail, texting, and social networks do not reach emergency services, but the new generation of users seems to expect them to. During the 2007 Virginia Tech shooting, students futilely texted 911 ("In the Matter of Facilitating" 14, 35, 73). In 2009, two Australian girls lost in the Adelaide drain system used a cell phone to update a Facebook page rather than dialing the emergency number. A friend saw the post and called the authorities (Urban).

A PSAP in Waterloo, Iowa, is often cited as the first to accept text messages. However, texts to 911 in Waterloo worked only with one local cell phone provider, and the sender had to provide a zip code. Another trial in Durham, North Carolina, also depended on special programming by the wireless provider. A PSAP in Florida assigned a phone number to receive text messages, but residents have to know the special number. Wireless providers still have no way to determine the location of a 911 text and to route it to the correct PSAP (76 FR 197 63263; McKenna).

Location Accuracy

Location accuracy for landline and cable phones is very good but can be poor for many cell phone calls.

According to interviews with PSAP directors in Kentucky, the location accuracy for landline and fixed VoIP cable phones is extremely good. Service addresses are usually updated within 24 hours of any changes.

Despite public expectations, however, the location accuracy for many cell phone calls is poor. Factors that can interfere with cell phone location accuracy include the number of towers, terrain, forestation, signal reflections in dense urban areas, and being in a large building.

Even call routing can be problematic when the wireless antenna is near a PSAP boundary. In these situations, some cell phone 911 calls will go to the wrong PSAP and will have to be transferred to the correct one. Usually, the automatic location information does not follow the call, so the caller or the original call taker must provide the location verbally.

Public Safety Answering Points

A primary PSAP is one that answers a 911 call. A secondary PSAP receives a call transferred from a primary PSAP.

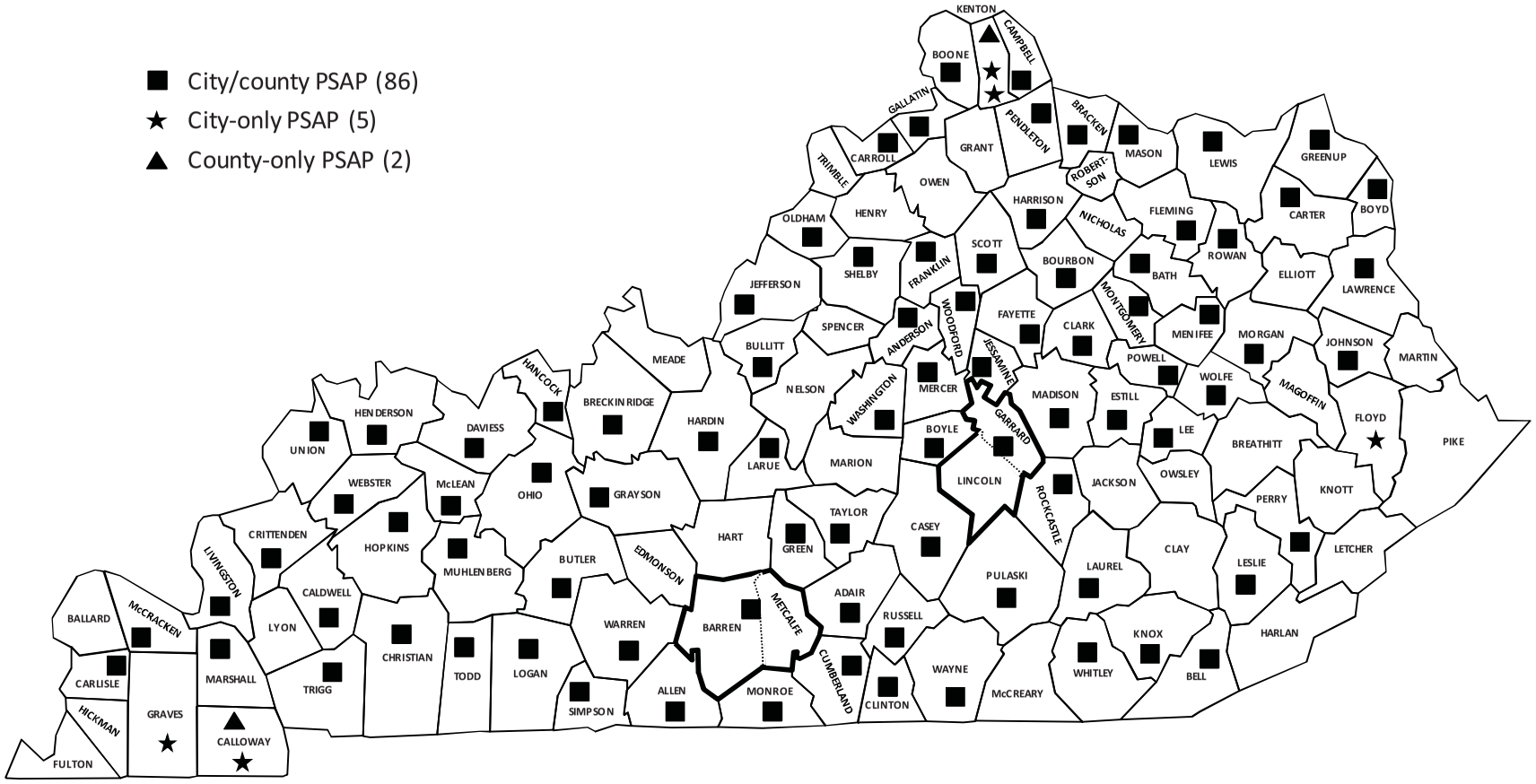
Public safety answering points can be referred to as primary or secondary, certified or noncertified, or a combination of these terms. A primary PSAP receives the initial 911 call asking for assistance. The primary PSAP can dispatch assistance directly or can transfer the call to a secondary PSAP for dispatching of emergency responders. Some PSAPs answer landline calls but rely on another PSAP to answer wireless calls. Such a PSAP would be considered primary for landline calls but secondary for wireless calls.

A certified PSAP has been approved by the Commercial Mobile Radio Service Emergency Telecommunications Board to handle wireless E911 calls. Certification does not imply anything about handling landline 911 calls.

A certified PSAP is one that has received approval from the Commercial Mobile Radio Service Emergency Telecommunications Board (CMRS Board) to receive funding from the wireless 911 fee. Certification requires the PSAP to demonstrate that it has the capability to handle wireless enhanced 911 calls. The board has no jurisdiction over landline enhanced 911 service, but board staff said it is unlikely that a PSAP capable of wireless E911 would be incapable of landline E911.

There are 109 board-certified PSAPs in Kentucky, including 16 at Kentucky State Police posts. Of the remaining 93, 86 answer calls from anywhere in their county, 5 of them are operated by a city and answer only calls made within city limits, and the remaining 2 are operated by the county government and answer only calls made outside city limits. Figure 1.A shows the locations of these PSAPs. Appendix C lists the certified PSAPs in the state.

Figure 1.A
Counties and Cities With Certified Public Safety Answering Points



Note: Counties with a PSAP that serves only the county outside its primary city are Calloway and Kenton Counties.
Cities with a PSAP that serves only a city or a group of cities are Covington, Erlanger, Mayfield, Murray, and Prestonsburg. Erlanger serves 11 cities.
Consolidated PSAPs serve counties and cities in Barren and Metcalfe Counties and Garrard and Lincoln Counties.
Source: Program Review staff compilation of information from the CMRS Board.

Levels of 911

Every county in Kentucky has 911 service, but the level of service varies and depends on whether the call is placed by a landline or cell phone.

Basic 911 Counties

Six counties have only basic 911 landline service, meaning the phone service provider does not send the caller's address.

For landline calls, six counties have what is known as "basic 911," meaning a call to 911 would be routed to a PSAP without the caller's location and phone number. Elliott, Magoffin, Marion, Martin, Owsley, and Robertson Counties provide basic 911 service for landline emergency calls. Wireless calls made from these counties are answered by the Kentucky State Police.[1]

In 2011, the CMRS Board committed $1 million from its grant fund to assist basic 911 counties to migrate to enhanced 911. In September 2011, the board gave its first such grant to Marion County.

Basic 911 still exists in Kentucky either because the local landline phone company does not have the capability to provide location information or because the county cannot ensure that all residences and businesses have street addresses that meet criteria required for E911. The latter is an expensive process and often generates opposition from property owners.

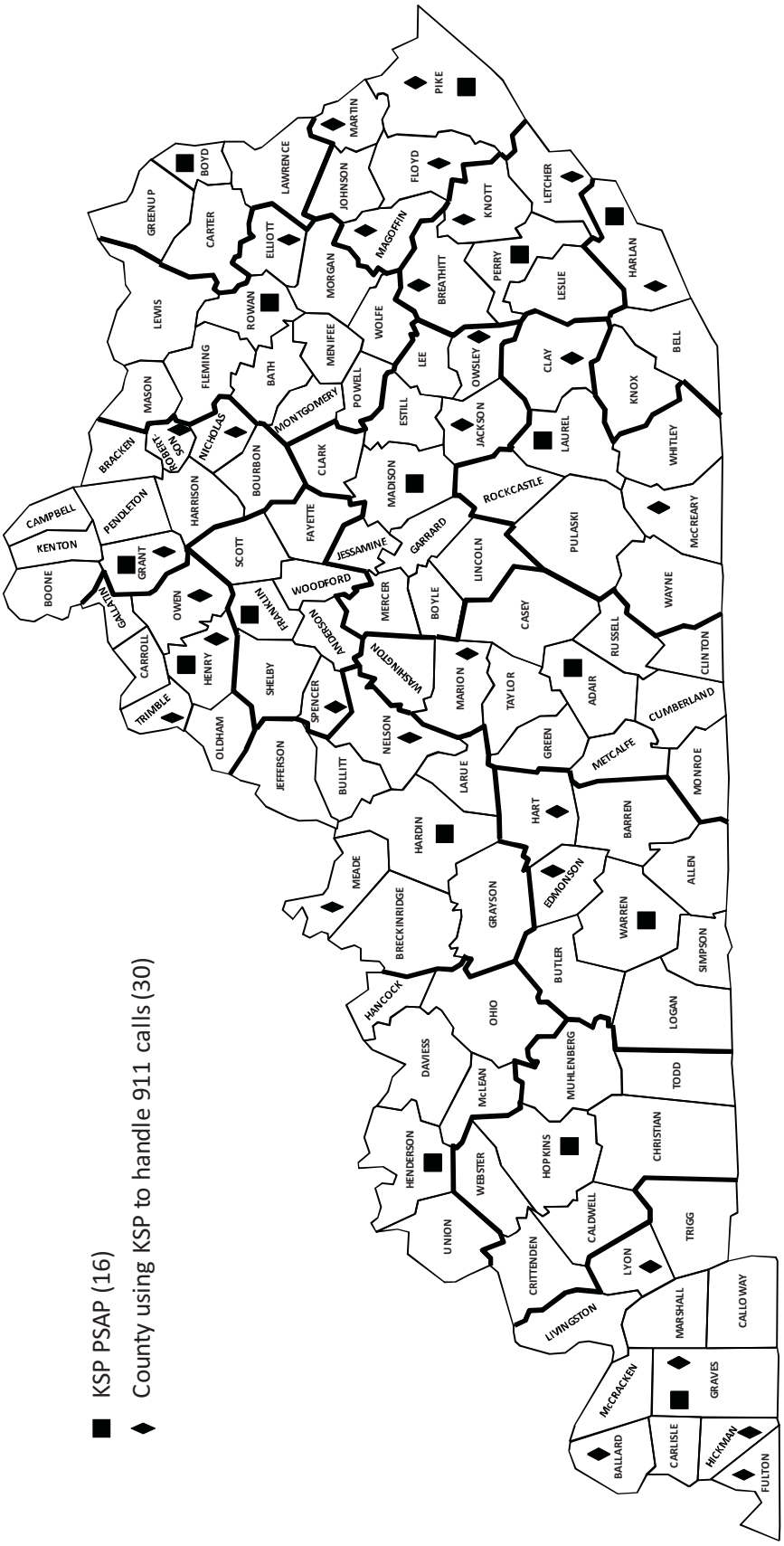
E911 Kentucky State Police Counties

Some PSAPs that answer E911 landline calls do not answer their own 911 cell phone calls. A Kentucky State Police post answers those emergency calls.

Some PSAPs that answer E911 landline calls do not answer their own 911 cell phone calls. Their cell phone calls go to PSAPs at Kentucky State Police (KSP) posts for transfer to a noncertified PSAP. In other counties a KSP post answers E911 calls from both landlines and cell phones. The locations of KSP posts and the counties they serve are shown in Figure 1.B. The counties receiving 911 service from KSP are listed in Appendix C.

[1]Kentucky State Police Post 6 also answers basic 911 landline calls for Robertson County.

Figure 1.B
Counties Receiving 911 Service From the Kentucky State Police



Source: Program Review staff compilation of information from the CMRS Board.

E911 Service Operated by Counties and Cities

Most certified PSAPs serve single counties and the cities within them.

Eighty-six certified PSAPs that answer landline and wireless E911 calls serve single counties and usually serve all the cities in each county. Two counties have certified PSAPs that do not serve all their cities. Five other certified PSAPs serve individual cities or a group of cities.

Consolidated PSAPs

Some of the PSAPs mentioned above are consolidated because at one time a county and one or more cities in the county had their own PSAPs. Program Review staff counted them among the county PSAPs because now they serve all the jurisdictions in their respective counties.

Among the county PSAPs are three consolidated certified PSAPs that serve multiple counties or multiple cities. Barren and Metcalf Counties have a consolidated PSAP. Bluegrass 911 serves Lincoln and Garrard Counties. The city of Erlanger operates a PSAP that serves 11 cities in Kenton County.

Noncertified PSAPs

The number of noncertified PSAPs is unknown. In addition to those operated by local governments, some are operated by public universities, airports, or military bases.

The number of noncertified PSAPs is unknown because there is no agency that oversees them. In addition to noncertified PSAPs operated by local governments, there are also noncertified PSAPs operated by public universities, airports, and military bases. In most cases, such a PSAP can receive the initial landline 911 call made from its premises, but the capability to answer the initial wireless 911 calls varies. Appendix C describes these noncertified PSAPs in detail.

Next Generation 911

Next generation 911 (NG911) is planned to provide a nationwide Internet-based method of connecting a caller with emergency services. NG911 standards have not yet been implemented, but some elements are already in place in Kentucky.

Next generation 911 (NG911) is a proposed system that eventually will provide a nationwide Internet-based method of connecting an individual with emergency services. Using the Internet instead of the traditional phone system has the potential to reduce costs dramatically, expand the types of communication that individuals may use, and make the routing and handling of emergency calls more reliable.

Standards for NG911 communications devices have been proposed but not implemented. However, there are elements of NG911 in

place today, particularly in central and northern Kentucky. The CMRS Board has drafted a request for proposals for a statewide Emergency Services Information Network that would join similar systems in Indiana and a few other states as the beginnings of the NG911 transition.

Major Observations and Conclusions

In January 2011, the Program Review and Investigations Committee authorized a study of 911 services and funding. During its 2011 Regular Session, the General Assembly passed Senate Bill 119, which required the CMRS Board to collect information and evaluate 911 funding and expenditures. The bill also required legislative staff to assess funding options. Appendix A explains how the study was conducted.

This report has six major conclusions.

This report has six major conclusions.

1. A few Kentucky counties still do not have enhanced 911 for landline phone calls. All Kentucky counties have enhanced 911 for wireless calls, but caller location information is variable and in some places unreliable. The Kentucky State Police has provided enhanced 911 wireless service for several counties. The level of service, however, is inconsistent. Responders in some counties have expressed strong dissatisfaction; others have reported good service.
2. Responsibility for 911 services is split between local and state government. Local governments have primary responsibility. Some local governments have formed interlocal boards to operate or contract for 911 services. The state is responsible only to ensure wireless calls are delivered and handled properly and to distribute the wireless 911 fee.
3. The CMRS Board was unable to determine the full cost of 911 services and the contribution of each revenue source toward that cost in time for this report. A comprehensive statewide 911 financial statement would be helpful if changes to 911 funding were to be made.
4. Local governments have wide latitude in raising 911 funds, but most levy a monthly fee on landline phones and supplement this with general funds. None uses other 911 funding options. Landline fees vary from no fee to $4.25 per month, and revenues have declined. The state wireless fee is 70 cents per month, and revenues may be reaching a plateau. What residents pay varies by jurisdiction and type of service.

5. Courts so far have ruled that the Kentucky wireless fee applies to prepaid wireless providers. However, the prepaid fee produces significantly less revenue per phone than the postpaid fee and, unlike the other 911 fees, prepaid providers have been paying at least some of the fee from their own revenues.
6. Controls on 911 funds are inconsistent. The state auditor and city auditors have no specific responsibility to audit local 911 funds. The CMRS Board may audit only wireless 911 funds and does so infrequently. Audits are difficult because of differences in the permitted uses of 911 funds and because some PSAP operators commingle local and state 911 funds with each other and with general funds and do not attribute all the actual costs to the PSAPs.

Chapter 2 provides an overview of 911 oversight in Kentucky. Current funding is described in Chapter 3. Certain funding options are discussed in Chapter 4. The statewide 911 financial statement that derives from SB 119 is considered in Chapter 5. Chapter 6 is a review of some cost and service management issues.

Chapter 2

Oversight of 911

Governance

Federal law requires the Federal Communications Commission (FCC) to designate 911 as the universal phone number within the United States for reporting an emergency to appropriate authorities and requesting assistance. Landline and wireless phone providers must reserve the number 911 for emergency service. Kentucky law implements the same requirement. The phone company must assign this number only to a public body or other applicant for the establishment of 911 emergency phone service.

Federal and state laws require that the number 911 be reserved for emergency calls, but there is no statutory requirement that governments establish and operate 911 dispatch services.

Neither federal nor Kentucky law requires state or local governments to establish 911 service. All telecommunications providers must transmit 911 calls to a PSAP if one has been established. Otherwise, providers must transmit 911 calls to a designated statewide default answering point or to an appropriate local emergency authority (47 CFR 64.3001). In practice, all 911 calls in Kentucky are transmitted to PSAPs.

Implementing Enhanced 911 Service

PSAPs and phone companies are not required to offer enhanced 911 service. State and local governments are responsible for paying phone companies for landline 911 service.

Landlines. States and local jurisdictions establish timetables for their PSAPs to have the necessary E911 equipment to receive and display caller location information that the call taker can relay to police, fire, and rescue services. However, the landline phone company may have limited capability to offer E911 services, and there is no requirement that it do so.

Landline providers incur costs associated with providing 911 service and they may recover such costs, consistent with federal and state laws, through the filing of tariffs, via negotiated agreements, or by other appropriate mechanisms. There do not appear to be any federal or Kentucky laws or rules specifically governing how landline providers set rates and recover their costs for 911 services, but it remains the responsibility of local or state governments to pay for them ("In the Matter of IP" sec. 7). These costs include selective routing of the calls, updating and operating the location database, providing phone trunk lines to PSAPs, and providing any necessary equipment at the PSAP.

Wireless. Wireless E911 was implemented in phases. Currently, the CMRS Board certifies only PSAPs that are capable of Phase II wireless E911, the highest level.

Funding for equipment upgrades needed for the establishment of wireless E911 is provided by state and local governments.

The FCC has control only over the readiness of providers to accommodate an emergency service's technology needs once E911 capability has been established at a PSAP. States and local jurisdictions determine when PSAPs will be able to handle wireless E911 calls. State and local governments must fund the equipment upgrades needed by their PSAPs for wireless E911 service (US. Government 2-3, 13).

Wireless providers interconnect with local landline phone companies to provide 911 service. The FCC requires a landline phone company to provide the type of interconnection reasonably requested by a wireless provider within a reasonable time after the request.

In Phase II E911, wireless providers convey to a PSAP the location of 911 calls by latitude and longitude. Once a PSAP indicates that it is ready to receive Phase II calls and requests the wireless provider to begin the service, the provider must, within 6 months, install the necessary hardware and software and begin delivering Phase II enhanced 911 service to the PSAP.

Although not required by the Federal Communications Commission, Kentucky continues to reimburse wireless providers for some costs related to providing wireless E911 service.

The FCC's requirement that states cover the costs of wireless providers' E911 service was dropped in 1999. Kentucky and many other states continue to reimburse wireless providers for some of their costs of E911 service. Some states, such as Colorado, Indiana, Massachusetts, Michigan, New York, North Dakota, and Rhode Island, no longer do so (Association).

Local Control and Local Revenues

Local governments have chosen a landline 911 fee levy out of many options. Statute limits the use of 911 revenues to expenses incurred by "a 911 emergency communications system," but fails to define such a system. Most local governments supplement 911 revenues with general funds.

Beginning in 1984, Kentucky statute at KRS 65.750 to 65.760 established local control of 911 emergency services and defined funding mechanisms. KRS 65.750 to 65.760, often called the "landline statute," is the basis for 911 services in Kentucky.

Cities, counties, or urban-county governments may pass ordinances to levy any special tax, license, or fee to fund 911 emergency services. KRS 65.760(3) specifically authorizes a levy on landline subscribers on an individual exchange-line basis. Most counties have chosen the latter option.

The statute does not limit the amount of a special 911 levy, but any such levy must be expended solely for the establishment, operation, and maintenance of a 911 emergency communications system. What constitutes "a 911 emergency communications system" is not defined.

Local governments are free to appropriate their own general funds to support the operation of the 911 system. Most of them do appear to supplement their dedicated 911 fees with general funds.

State Control and State Revenues

In 1996, the FCC mandated that wireless providers connect callers to a public safety 911 system where one was in place. The Kentucky General Assembly enacted KRS 65.7621 to 65.7643 in 1998 to implement the federal requirements for wireless 911 service.

The Commercial Mobile Radio Service Emergency Telecommunications (CMRS) Board is the statewide authority overseeing the wireless 911 surcharge and services, but its authority does not extend to landline 911 funding or service delivery.

The CMRS Board is charged with administering a fund to promote and support wireless E911 service and the improvement of E911 service generally in Kentucky. The board sets standards for wireless E911 PSAP certification but does not have any authority over how landline calls are handled.

The CMRS fund consists of revenues from the wireless 911 service charge or fee. The fee is imposed on each cell phone, with some exceptions. No charge other than the CMRS service charge can be levied by any person or entity for providing wireless 911 service (KRS 65.7627). This appears to mean that local governments cannot levy a charge on cell phone service.

The board's funds help local governments and wireless providers defray some of the cost of providing a level of wireless E911 service similar to that which landline users receive (Commonwealth. Commercial. Overview). The board offers grant funds to help upgrade PSAP equipment and encourage PSAP consolidation.

Governance Options

Nationally, PSAPs are most often under direct local control. State authority is usually limited to the establishment of PSAP training and performance standards.

Nationally, the direct management authority over PSAPs is almost always a local government or a regional entity. State authority usually is limited to ensuring that 911 calls reach PSAPs correctly with the necessary information and to setting PSAP performance and training standards. Occasionally, PSAPs may be operated and managed by a state entity, such as the Kentucky State Police.

Standards often are enforced indirectly through granting or withholding state funds or through auditing of local government accounts. Some states have no state office or agency that directly oversees 911 services or controls access to funding.

The greatest variation is in the way 911 funds are collected and controlled. The three models identified in FCC annual reports on 911 funding are

- state collection in 19 states and the District of Columbia,
- Local authority in 11 states, and
- a hybrid model in 19 states including Kentucky (US. Federal. "Second" 4-5).[1]

There are numerous variations within each model in the permitted uses of 911 funds. For example, Maine collects all 911 fees but uses them exclusively to fund the statewide 911 call delivery system through the landline phone company. Local governments pay for all PSAP costs out of their general funds. Minnesota and North Carolina also collect all fees at the state level but distribute them to local governments to cover at least some PSAP costs.

Some states have more centralized oversight. The federal government has encouraged states to move in that direction.

North Carolina and Washington have more centralized oversight. Their state agencies review and set standards for both wireless and landline 911 services. Some reasons that a state might want to monitor and set standards for all 911 services are

- to ensure a uniform level of service for callers,
- to support prudent consolidation,
- to assist in managing costs, and
- to manage and implement a statewide NG911 system.

Efforts to encourage states to designate a statewide coordinator for all 911 functions include the former E911 Grant Program administered by the National 911 Program within the Department of Transportation. Under the ENHANCE Act of 2004, these grants required that a state have a statewide 911 administrator. The Act also required a state to ensure that all dedicated 911 funds are used solely for their designated purposes.

In order to secure a grant under this program, the governor named the CMRS Board administrator as the Kentucky 911 coordinator. This is not a statutory position, but it supports the idea that Kentucky might benefit from having a state agency that has oversight for all 911 matters.

[1]Louisiana and Mississippi did not respond to the FCC's survey.

This grant expires at the end of September 2012, but Kentucky has not spent all the funds. So long as the funds are unspent, they are subject to return if there is no state 911 coordinator or if any of the 911 funds are spent for other purposes.

Local Governance in Kentucky

How local governments establish, maintain, and fund locally operated PSAPs varies greatly.

Although a few counties and cities in Kentucky operate PSAPs alone, most counties have a single PSAP that serves the county and one or more cities. Often, the primary city operates the PSAP for the county as a whole. Larger consolidated PSAPs usually have an interlocal governing board. There also are groups of counties that have formed regional boards to obtain 911 services through KSP.

Kentucky law specifically permits local governments to enter into interlocal cooperation agreements for the purpose of creating a joint 911 emergency phone service (KRS 65.760(2)). Under Kentucky's Interlocal Cooperation Act, KRS 65.210 to 65.300, local governments may cooperate with each other and with state agencies to provide services and facilities if the governing bodies of the respective entities take legal action to approve entering into a cooperative arrangement. The agreement must describe any separate legal entity that will be created by the partnership, such as a board, that may be legally created otherwise.

Interlocal agreements must be approved by a state agency, depending on the parties to the agreements. The Department for Local Government approves agreements between cities and counties, and the Office of the Attorney General approves agreements that include state agencies as partners.

Most PSAPs serving an entire county require the cooperation of the county and one or more of the cities. In many cases, the PSAP is operated by a city, but the county is responsible for the 911 revenues. Based on visits and interviews by Program Review staff, it appears that for some such arrangements, the parties either never had or were unable to find formal interlocal agreements and did not form governing boards.

Interlocal agreements between contracting parties can reduce conflict and misunderstandings regarding service and funding expectations.

Without these agreements, confusion and conflict between the city and county are more likely. For instance, the city of Lawrenceburg operates the certified PSAP that covers all of Anderson County. The CMRS payment is remitted to the Anderson County Fiscal Court and not to the city. In 2010, the mayor of Lawrenceburg asserted that the fiscal court was not remitting to the city the total amount of wireless funds and that the city was required to use its general funds to sustain PSAP operations.

On at least one board formed to obtain 911 services from the Kentucky State Police, KSP has a seat and chairs the board. Program Review staff suggest that KSP should be considered a service vendor in these arrangements and that the interlocal agreements should be exclusively among the local governments in order to form a regional entity to negotiate a contract with KSP. If such an arrangement is permitted under the Interlocal Cooperation Act, it would preserve local control over 911 services.

Program Review staff suggest regional 911 boards designate or contract with a fiscal agent to manage wireless and landline 911 funds.

Interviews with regional 911 board members indicated that there sometimes is confusion about who is responsible for managing the funds; Program Review staff suggest that 911 boards should designate or contract with a fiscal agent. For example, at least one board has contracted with an area development district to provide fiscal services. Another board has designated the financial department of one of the participating cities.

It is important that the cooperating local governments either empower one local government or create a 911 board to control funds and provide or contract for 911 services. Any 911 boards should be accountable for the funds that are designated for 911 purposes. Program Review staff suggest that the member local governments should designate a board to receive 911 revenues directly from the entity that collects them, whether it is a local phone company, a local taxing authority, or the CMRS Board.

Recommendation 2.1

Recommendation 2.1

All arrangements for 911 services that involve more than one local government should be made by written interlocal agreement. An interlocal agreement for 911 services should be among the local governments only and should empower one local government, or create a 911 board, with the authority to control funds and provide or contract for 911 services. If there is a 911 board, it should designate or contract with a fiscal agent. A 911 board should issue an annual audited financial statement. Local 911 fees should be remitted directly to the empowered local government or 911 board. The General Assembly may wish to consider codifying some or all of these terms.

Recommendation 2.2

Recommendation 2.2

In order to preserve local control, state agencies providing local 911 services should do so on the basis of a contract with a local government or 911 board and should not be parties to interlocal agreements for 911 services unless it is required by the Interlocal Cooperation Act. A state agency should not have voting representatives or officers on a 911 board. The General Assembly may wish to consider codifying these terms.

CMRS Board

The CMRS Board is an independent board with its own revenues and hiring authority. Its numerous powers and duties relate mostly to wireless 911.

Under current law, the CMRS Board is an independent board with its own revenues and hiring authority. The statute specifies that the General Assembly may not appropriate CMRS funds. The governor appoints the board members, and the board hires its administrator and staff.

The CMRS Board's statutory powers and duties include

- promulgating regulations to implement the wireless E911 law;
- developing standards for the approval or disapproval of cost recovery plans from wireless providers and requests for CMRS funds by local governments and providers;
- collecting the wireless 911 service charge, or fee, from each CMRS connection and administering and disbursing funds according to the statute;
- reviewing the fee at least once every 24 months;
- at its discretion, decreasing the fee or recommending that the General Assembly increase it;
- completing at least one cost study by July 1, 1999, on whether the fee can achieve the purposes of the statute;
- retaining an auditor to complete audits of the board, wireless providers, and PSAPs once every 24 months;
- developing standards and protocols for "the improvement and increased efficiency of 911 services," not just wireless 911;
- providing grants to establish, improve, or make more efficient 911 services, not just wireless 911; to help providers improve 911 infrastructure; and to encourage PSAP consolidation; and
- under SB 119, determining, gathering, and reporting information necessary to evaluate 911 funding and costs beginning August 1, 2011, and each August 1 thereafter.

The board administrator serves as a member of the board, conducts the day-to-day operations of the board, and is responsible for promoting the expansion and improvement of all E911 capabilities and responses, not just wireless E911.

Selected Board Activities. Until September 2011, the CMRS board did not formally ask all providers how many wireless subscribers were prepaid versus postpaid, which method providers were using to remit the fee on prepaid service, and how much of the revenues remitted came from each. This information was needed to properly assess the revenues received from the various revenue sources. In response to SB 119, the board did request this and other relevant information from providers.

The CMRS has sued two prepaid wireless providers for not remitting the surcharge as required. Both cases were decided in favor of the board, but both decisions have been appealed.

Over the past few years, the board took action to enforce the collection of 911 fees on prepaid wireless service under existing statutes. Two court cases arose. The board filed a case against Virgin Mobile for deducting disputed fees from its remittances. The case was decided by the Jefferson Circuit Court in 2010 in favor of the board, but is under appeal. The second case, against TracFone, was heard in the US District Court, Western District of Kentucky. A decision in September 2011 found in favor of the board and awarded previously unpaid fees, interest, and attorney's fees to the board. On October 7, TracFone filed an appeal.

Program Review staff reviewed how CMRS calculates the wireless fund payments to PSAPs. Staff confirm the accuracy of the methods used by CMRS and have verified the total payments remitted to certified PSAPs as being correct.

The CMRS Board has hired a consultant to assist in the migration to NG911.

In anticipation of NG911, the CMRS Board hired a consultant to assess the needs and requirements for the eventual implementation of next generation systems. The board also is in the process of issuing a request for proposal for the first stages of an emergency services information network.

Statewide geographic data is important for NG911. The CMRS board has contracted with the Commonwealth Office of Technology to compile statewide geographic information system data from all PSAPs so that there will be a comprehensive database of PSAP boundaries, roads, addresses, and other data necessary for E911. To support this process, the board implemented a requirement that PSAPs submit standardized geographic data. The technology office also will assist PSAPs with preparing and correcting their data.

Senate Bill 119. In May 2011, Program Review staff sent the CMRS Board an information request outlining in detail the kinds of information needed to satisfy SB 119 as staff best understood it at that time. The request also pointed out unknowns that needed to be explored in order to determine certain information needs and ways to collect data.

The CMRS Board was unable to meet the August 1, 2011, deadline set by SB 119 for reporting of information. A report submitted on that date did not fulfill the requirements established by statute.

The board was unable to meet the August 1, 2011, deadline set by SB 119 for reporting data to evaluate 911 funding and costs. The report issued on that date did not fulfill all the requirements of the statute. The statute authorized the board to hire a consultant to assist in obtaining the necessary 911 data; the board chose to hire an interim employee. The board may have been able to obtain more data had a consulting firm or multiple interim employees been hired sooner. Because of the ongoing nature of this mandate, however, Program Review staff suggest that the board hire permanent staff for the purpose.

Program review staff suggest the CMRS Board provide comprehensive statewide financial data by August 1, 2012.

The board was unable to provide the information needed for a comprehensive review of 911 revenues and costs in time for inclusion in this report. As of November 2011, board staff are in the process of collecting more information. Program Review staff suggest that the board plan to have data for a thorough statewide 911 financial statement available by August 1, 2012, for fiscal years 2008 through 2011 and, if possible, 2012.

Certification of PSAPs for Wireless E911

In order to receive wireless 911 funds, a PSAP must become and remain certified by the CMRS Board.

The CMRS Board certifies whether PSAPs are capable of properly handling E911 wireless calls. In order to receive wireless 911 funds, a PSAP must become and remain certified.

Annual Data Reporting

To maintain certification, the board requires PSAPs to submit a detailed list of documents and information including 911 call counts, types of equipment used, service providers, as well as information regarding the number of staff employed. Information must be reported to the board no later than February 1 each year.

Geospatial Audits

Certified PSAPs must also pass a geospatial audit after certification. The PSAP's equipment must be able to display the location of a wireless call on a map and identify the closest street address or, in the absence of a call location, the system must show the antenna location. To test the PSAP's address data, the auditors make test 911 calls from the field for which the system must identify the address within a tenth of a mile of the known location. For these tests, the PSAP is not penalized for inaccuracies in the wireless provider's location data.

The CMRS Board supports regulatory change requiring PSAPs pass geospatial audits prior to being certified.

Under current regulations, each certified PSAP must pass one geospatial audit (202 KAR 6:100). CMRS Board staff stated that the board intends to require repeated geospatial audits, possibly auditing one-third of PSAPs each year. Board staff also reported the intent to promulgate a regulatory change to require new PSAPs seeking certification to pass a geospatial audit before being certified.

According to regulation, if a PSAP fails the geospatial audit, it has 90 days from receiving notification of failure to remedy the identified problems. After the board receives the PSAP's response to the audit failure, the board may schedule a reaudit. The regulation states that a PSAP should be decertified if it fails to remedy the problems identified by the audit or fails the reaudit.

PSAPs can appeal decertification, and during the appeal process, the PSAP's CMRS payments are to be held until the resolution of the appeal. If the appeal is unsuccessful, the held funds are disbursed to the remaining certified PSAPs.

Geospatial audits could serve an important additional function. Because FCC regulations permit wireless providers to exclude counties from location accuracy requirements, as described in Appendix D, it is possible that many Kentucky counties will continue to experience poor location service. Geospatial audits could supplement the wireless providers' testing and provide an independent record of the accuracy of location services over time for all counties.

Recommendation 2.3

Recommendation 2.3

As it has proposed, the CMRS Board should make passage of a geospatial audit a prerequisite for certification of a public safety answering point and should specify an ongoing program of geospatial audits. The board should also ask its auditors to include sufficient testing to assess the location service accuracy of wireless providers in each jurisdiction and to record that information in their geospatial audit reports.

Sanctions Against PSAPs

The board has limited sanctions available and may benefit from a broader array of intermediate sanctions.

The CMRS Board has limited sanctions available. For instance, regulation requires a certified PSAP to resolve problems identified in a geospatial audit within 90 days of the audit results in order to continue to receive CMRS funds. However, many of the PSAPs that failed their audits were given many months or even years to

resolve location errors, and during this time they continued to collect CMRS funds. The board might benefit from a broader array of sanctions, such as a partial withholding of payments. If the board finds it cannot provide partial sanctions by regulation, then it should suggest solutions to the General Assembly.

Auditing and Financial Controls

Only one report of misuse of 911 funds has been documented. However, there are deficiencies in the current 911 financial controls.

Program Review staff were told by phone service providers, public safety officials, and others that local governments had used 911 funds for ineligible purposes. However, there was only one documented instance of misuse, and that was found in a CMRS audit. None of the individuals who expressed concern about fund misuse pointed to a specific example. The auditors to whom Program Review staff spoke indicated that they were unaware of any misuse of local 911 funds

Nevertheless, there are deficiencies in the current approach to auditing 911 funds with responsibility split between local governments and state government. State government's responsibility applies only to the delivery and handling of wireless 911 calls and the collection, distribution, and use of wireless revenues. At the local level, cities and counties are subject to audits, but those audits generally do not consider 911 funds. Some counties have formed regional boards that are not subject to any audit requirements.

Accounting Procedures

There is no requirement to separate local 911 and wireless 911 revenues. Commingling of funds increases the difficulty of determining the legitimacy of fund expenditures.

Local governments are not required to separate local 911 and wireless revenues. Local 911 revenue can be commingled with wireless revenue as well as commingled with general fund money. There are no standards that establish how accounts should be maintained and this lack of accounting standards makes it difficult for auditors to determine how funds were used.

The key question is whether the local accounting system can determine which revenue source paid for each expense or portion of an expense. When the funds are commingled, it becomes impossible to determine which type of fund was used. In that case, the auditor would have to make assumptions about the allocation of revenue sources.

One auditor estimated that about half of the local accounting systems were able to trace expenditures to specific funding

sources, a little fewer than half could distinguish 911 funds from general and other funds but could not distinguish local 911 funds from wireless 911 funds, and a few could not distinguish any of the revenue sources.

The Kentucky State Police budget does not separate the cost of operating its PSAPs and therefore is unable to determine the cost of providing 911 service.

Another issue is the assignment of expenses to cost centers. In order to have a full accounting of a PSAP's funding and expenses, all the relevant expenses should be identified. This would require the accounting system to have a separate cost center for the PSAP. In many locations, this is not the case. As a result, some of the costs of PSAPs actually appear in other parts of a local budget. The Kentucky State Police also does not have separate cost centers for its PSAPs and 911 management, so KSP is unable to determine its 911 costs.

North Carolina is an example of a state that requires local governments to maintain separate accounts for 911 funds. For full accountability, local governments and state agencies that operate PSAPs should track 911 revenue sources separately and should have cost centers that capture all the costs of their PSAPs. They should have accounting systems that can attribute expenses to specific funds.

County and City Audits

County financial statements are subject to annual audits by the Auditor of Public Accounts. Most cities are required to submit audited financial statements to the Department for Local Government.

Current auditing standards employed by the auditor's office and city auditors do not specifically address local 911 funds or determine whether the funds are expended properly. Therefore, most local 911 operations are audited only when their expenses appear in a random selection of expenses or when a specific audit is requested.

To ensure 911 fund expenditures are audited, the fund must be designated as a "major fund." Only nine counties did so in FY 2010.

The exception is when the PSAP's budget is a "major fund," which means it constitutes 10 percent or more of the local government's budget or the local government designates it as major. For jurisdictions that have placed landline 911 revenues in a major fund, audit procedures would require that a sample of expenditures from the fund be tested to ensure compliance with budgetary and legal requirements. In fiscal year 2010, only nine counties had a major fund for 911 revenues.

It is unlikely that expenditures of 911 revenues maintained in a nonmajor fund would be tested for compliance with budgetary and legal requirements.

For government entities that do not maintain the local 911 landline funds in a major fund but instead use a separate nonmajor fund or include 911 with the budget of a larger department, a sample of all expenditures would be tested for compliance with budgetary and legal requirements. In this instance, it is unlikely that a test sample would contain any 911 expenditures. Therefore if local 911 landline revenue is not placed in a major fund, it is possible that improper expenditures of 911 funds could occur and not be detected during the audit process.

CMRS Audits

KRS 65.7629(13) requires the CMRS Board

> To retain, with approval by the Auditor of Public Accounts, an independent certified public accountant who shall audit, once every twenty-four (24) months, the books of the board, CMRS providers, and PSAPs eligible to request or receive disbursements from the CMRS fund under KRS 65.7631…

The statute appears to require CMRS audits of all providers and PSAPs every 24 months. The board currently audits a random sample of providers and PSAPs every 24 months.

As written, the language of the statute appears to require CMRS to conduct an audit of all providers and PSAPs every 24 months, which is contrary to the sampling method currently used by the board. One-third of wireless providers operating in the Commonwealth are selected for auditing every 24 months; the two largest providers, based on surcharge remittances, are chosen each audit cycle. One-third of certified PSAPs are selected for auditing every 24 months; one of the two largest PSAPs, based on total payments from CMRS, is randomly selected to be audited every 24 months.

Provider Audits. Audits of wireless providers verify the accuracy of the surcharge collections and remittances as well as the cost recovery invoices submitted to and paid by the CMRS Board. To verify the accuracy of the surcharge collected and remitted, auditors review a provider's billing system, subscriber reports, and surcharge amounts collected and remitted. For prepaid accounts, auditors identify and document the method used for collecting and remitting the surcharge. While any inconsistencies in reporting or audit exceptions are noted in the finalized audit report provided to CMRS, the audit report does not provide detailed information to the board regarding the number of subscribers or the amount of surcharge collected and remitted for prepaid or postpaid services.

Auditors also verify the legitimacy of cost recovery paid to providers by reviewing the expenses for which cost recovery reimbursements were received and test a minimum of 20 percent of the total dollar amount received. Any exceptions are noted in the auditor report.

Statute authorizes the CMRS Board to audit "PSAPs." The board actually audits the entities that operate PSAPs. CMRS audits cover only the wireless 911 funds.

PSAP Audits. Kentucky statutes currently refer only to the term "PSAP" when discussing the remittance and auditing of CMRS funds. PSAPs do not generally have the authority to make their own financial decisions or pay their own bills; they operate under the governance of a local or regional board or a state or local governmental entity. The CMRS Board has interpreted the statute to allow it to review the expenses of the entity that operates a PSAP.

CMRS funds paid to PSAPs are audited. Auditors determine whether CMRS funds are maintained in a separate bank account, commingled with other revenue sources, or labeled with accounting codes to differentiate them from other revenues. If 911 expenditures are not distinguished as being paid out of wireless or local 911 funds, auditors test expenditures and track the funding source to determine if the expenditures were in accordance with statutory limitations placed on 911 wireless expenditures. Auditors hired by CMRS do not review how local 911 funds are spent by the PSAPs.

PSAPs may not be aware of the funding provided by CMRS for its operations. Better controls and greater transparency are needed among fiscal agents, certified PSAPs, and the CMRS Board.

Future Audits. In September 2011, the CMRS board drafted a request for proposal (RFP) for a personal service contract from individuals and organizations qualified to provide financial auditing services.

The RFP established auditing procedures new for this audit cycle that include requiring auditors to

- determine the number of a provider's subscribers and distinguish prepaid customers from postpaid customers,
- confirm the total earned wireless revenue by provider with respect to prepaid customers in the state,
- determine what percentage of surcharge remittances are attributable to prepaid and postpaid subscribers, and
- identify and verify all revenues from whatever source received by the PSAP or budgeted to 911 use.

The RFP again specified the practice of sampling certified PSAPs and providers for auditing, rather than auditing all of them in each cycle. However, the CMRS Board has requested responders to the RFP to estimate the cost to conduct audits on all PSAPs and providers instead of continuing the sampling method currently being used. A board official stated that the contract might be modified to include audits of all entities, depending on the estimates.

Status of 911 Boards

It appears that 911 boards formed by interlocal agreement for the purpose of contracting with Kentucky State Police are not audited by any state or local government entity.

The 911 boards formed by interlocal agreement appear not to be required to produce financial statements or submit to regular audits under any statute. Local 911 funds in the possession of these boards are not audited even under the limited scope of city and county audits. An official with the Department for Local Government expressed the opinion that 911 boards are accountable only to the local governments that created them.

In some instances, CMRS funds allotted to the Kentucky State Police have been designated to be paid directly to a local or regional 911 board that contracts with KSP, although such a distribution might be questionable under the current statute. The CMRS Board audits the wireless funds that KSP receives but, because the statute appears to permit the board to audit only a PSAP itself, the CMRS Board has never audited a regional 911 board that receives wireless funds and also has not audited any 911 board fiscal agents or participating local governments. A recommendation to consider expanding the statute beyond PSAPs alone appears in Chapter 3.

In the absence of audits, it is not possible to determine whether local and wireless 911 funds maintained by regional boards are being spent appropriately.

In addition to handling local and wireless 911 revenues, some of the boards also have surplus 911 funds. In the absence of audits, it is not possible to be certain that local and wireless 911 funds are being spent appropriately. Chapter 3 includes a recommendation about surplus funds.

Recommendation 2.4

Recommendation 2.4

The General Assembly may wish to clarify the CMRS Board's audit cycles for providers and authorities that operate PSAPs. Regarding providers, the General Assembly may wish to consider whether the board should audit all providers, all major providers with a sample of minor providers, or a sample of providers every 24 months. Regarding PSAP authorities, the General Assembly may wish to clarify whether all should be audited every 24 months or whether a rotating cycle of audits should be permitted. In the absence of such clarification, the board should audit all providers and all PSAP authorities every 24 months.

Recommendation 2.5

Recommendation 2.5

The General Assembly may wish to consider requiring that

- **local and wireless 911 revenues be maintained in separate restricted funds to ensure expenditures from these funds are easily auditable and distinct from other local funds;**
- **each entity operating a PSAP create a 911 cost center or have some other means to identify 911 expenses; and**
- **all entities that collect, receive, transfer, or expend dedicated 911 funds, whether local or wireless or both, be subject to audit by the CMRS Board or another auditing authority.**

Chapter 3

How Kentucky Funds 911 Services

Funding of 911 services in Kentucky is not uniform. Many sources of revenue contribute.

Funding of 911 services in Kentucky is not uniform. Local governments may rely on a variety of revenue sources to fund the cost of maintaining PSAPs or to pay for contracts with the Kentucky State Police for answering local 911 calls. Local 911 funds, the state wireless 911 fund, local general funds, and other miscellaneous funding sources all contribute.

Local 911 Funds in Kentucky

Local governments have broad latitude in raising 911 revenues, but most have chosen to levy a fee on landline phone service.

Local governments have broad latitude in raising 911 revenues. KRS 65.760(3) permits cities, counties, and urban-county governments to levy any special tax, license, or fee for 911 emergency phone service that does not conflict with the Kentucky Constitution and statutes.

The statute specifically authorizes a fee on landline phone accounts, and most Kentucky counties levy such a fee. Where there are landline fees, they range from 50 cents to $4.25 a month. Two counties assess a percentage tax on phone rates: Boyd County charges 17 percent of the base phone rate, and Wolfe County assesses a 3 percent tax on all local phone charges and long distance tolls. Appendix E lists the local 911 fees in Kentucky.

Fees on Landlines

Some competitive landline phone companies might not be remitting 911 fees. Another issue is the landline providers' collection costs. Local governments should consider whether they could enhance revenues by looking at these issues.

In each county, there is one or a small number of so-called incumbent providers that own the phone lines and switching equipment. Usually, there are several competitive providers that lease and resell service from an incumbent provider. Based on interviews with PSAPs and local financial officers, it appears that most local officials are not aware of all the competitive providers. It also appears that some competitive providers might not be collecting and remitting 911 fees.

Most competitive providers seem to have relatively few customers, so the loss probably is not great, but it would be helpful for local governments to verify whether they are receiving all the revenue they should. The Public Service Commission (PSC) requires all providers to register, so local governments could obtain a list of competitive providers and ask them about their compliance with 911 fees.

Another issue is the amount of collection cost being kept by landline providers. Generally, local ordinances authorize the phone company to keep a portion of the revenue collected. Collection cost deductions range from 1 percent to 3 percent, and some are capped at a fixed dollar amount. Windstream, for example, capped its collection cost at $680 under its PSC tariff. Local governments should consider whether collection costs can be reduced and should attempt to verify that the local phone providers are deducting the correct amounts.

Fees on Voice Over Internet Protocol Services

Major voice over Internet protocol providers are paying landline 911 fees, but some are not. Local governments should ensure fees are properly remitted.

Voice over Internet protocol transmits voice communications over the Internet instead of traditional phone lines. Fixed interconnected VoIP services, like phone service through a cable provider, are linked to a physical address. Twenty-five PSAPs reported assessing a VoIP 911 surcharge; most counties levy the same rate for VoIP and landline services.[1] Based on Program Review staff visits and conversations with PSAPs, it appears that many counties that collect fees from VoIP providers do so under existing landline ordinances that do not mention VoIP explicitly. Insight and Time Warner, the two major cable companies in Kentucky, reported that they collected and remitted fees for most of the counties that they served and that levied fees.

Nomadic interconnected VoIP services, such as Vonage and similar providers, do not require a fixed physical location, but customers can call 911. Some counties told Program Review staff that Vonage was remitting landline 911 fees. Others reported that it was difficult to contact Vonage in order to start collecting or that they had not attempted to contact Vonage. It can be difficult to know which nomadic VoIP providers have customers in a county because they do not have to register with the PSC.

The VoIP market nationally has grown more than 35 percent since 2006, and continued high rates of growth are expected (IBISWorld). Counties have reported fewer landline phones contributing to 911 revenues, and some of those subscribers have switched to VoIP. Jurisdictions not levying or enforcing a surcharge on VoIP services are failing to recapture some of the revenues lost to this new technology. Local governments should take steps to ensure they are collecting these fees.

[1]This is based on respondents to the CMRS 2011 data review sheet that reported assessing a 911 surcharge on VoIP services. Not all counties completed the questionnaire.

Local 911 Fee Summary

The amount of revenue generated from local 911 fees is difficult to determine. Local governments levy the fees, but there is no state entity that is charged with the responsibility of determining the amount levied or its appropriateness. The CMRS Board should collect revenue information as part of its new responsibilities under SB 119.

There is no good source of information on local 911 revenues. County revenue data contains errors, and cities and interlocal boards are not required to keep separate 911 accounts.

Counties that levy 911 fees are supposed to assign them to a specific account code and include them in their reports to the Department for Local Government. However, the information seems to be unreliable in many instances; and city, urban-county, and merged governments and interlocal boards are not bound by this rule. The CMRS board should consider working with the Department for Local Government to determine whether county 911 fee revenue information can be made more accurate.

Kentucky Wireless Surcharge

The wireless 911 fee is 70 cents per month and appears to cover only a portion of costs related to handling wireless 911 calls.

KRS 65.7629 established the monthly surcharge for wireless phones at 70 cents in 1998, and it remains at that level in 2011. For most PSAPs, wireless calls now outnumber landline calls. Although the CMRS Board has interpreted the statute to permit the use of the wireless fund for all PSAP operations related to handling wireless calls, it appears from interviews and preliminary data that the wireless fund covers only a portion of those costs. Among respondents to the 2011 CMRS data review sheet, of those that had a local 911 fee, more than 61 percent reported that local 911 revenues, mostly based on a landline fee, still exceeded wireless.

The CMRS Board must review the rate of the wireless fee every 24 months, but it is unclear whether the board must issue a report on the reviews.

According to KRS 65.7629(4), the board must review the rate of the CMRS service charge at least once every 24 months. The board, at its discretion, may decrease the rate or recommend that the General Assembly increase the rate if the board determines a rate change is needed.

The board was required to complete the first cost study on or before July 1, 1999. The statute is unclear whether or not there should be cost studies associated with each rate review. Staff turnover and a loss of institutional knowledge at the CMRS Board resulted in Program Review staff being unable to confirm whether the first cost study was completed. The board prepared a letter in 2004 asking that the fee be increased to $1. A conference committee version of the 2004 budget bill proposed to do so, but the bill did not pass (2004 RS HB 395 CCR1 Part III.45).

In 2005 the board issued a report recommending two significant changes to wireless funding: decreasing the surcharge to 65 cents and changing the funding formula. The report failed to explain the reasoning for either recommendation. When recommending changes to wireless funding, the board should clearly explain its reasoning.

No subsequent cost studies were found. There is no evidence from board minutes that any other cost studies were done, and no one at the board could remember or locate any other studies. There was an "equities study," described below, but it did not involve a rate review.

Recommendation 3.1

Recommendation 3.1

The General Assembly may wish to consider modifying KRS 65.7629(4) to clarify whether the CMRS Board should report on the sufficiency of the rate of the CMRS service charge at least once every 24 months using its audits and the information gathered under KRS 65.7630 and should report the methodology and findings of each review to the governor, LRC, and other officials.

In 2001, KRS 65.7629 was amended to require the CMRS Board to conduct a study on the equity of the formulas used to distribute funds to PSAPs. The board commissioned a study examining expenses and revenues of all CMRS-certified PSAPs to determine whether any group was receiving more funds than were necessary to maintain operations (Commonwealth. Commercial. *Equities* 7).

At the time of the study, the board had been using the funding formula for only a little over a year, and there was insufficient data from each PSAP regarding call volume to determine the fairness of the disbursement model. It was also determined that PSAPs were not receiving more funds than necessary to maintain operations and that the method of distributing funds to PSAPs should not be altered at that time (Commonwealth. Commercial. *Equities* 8).

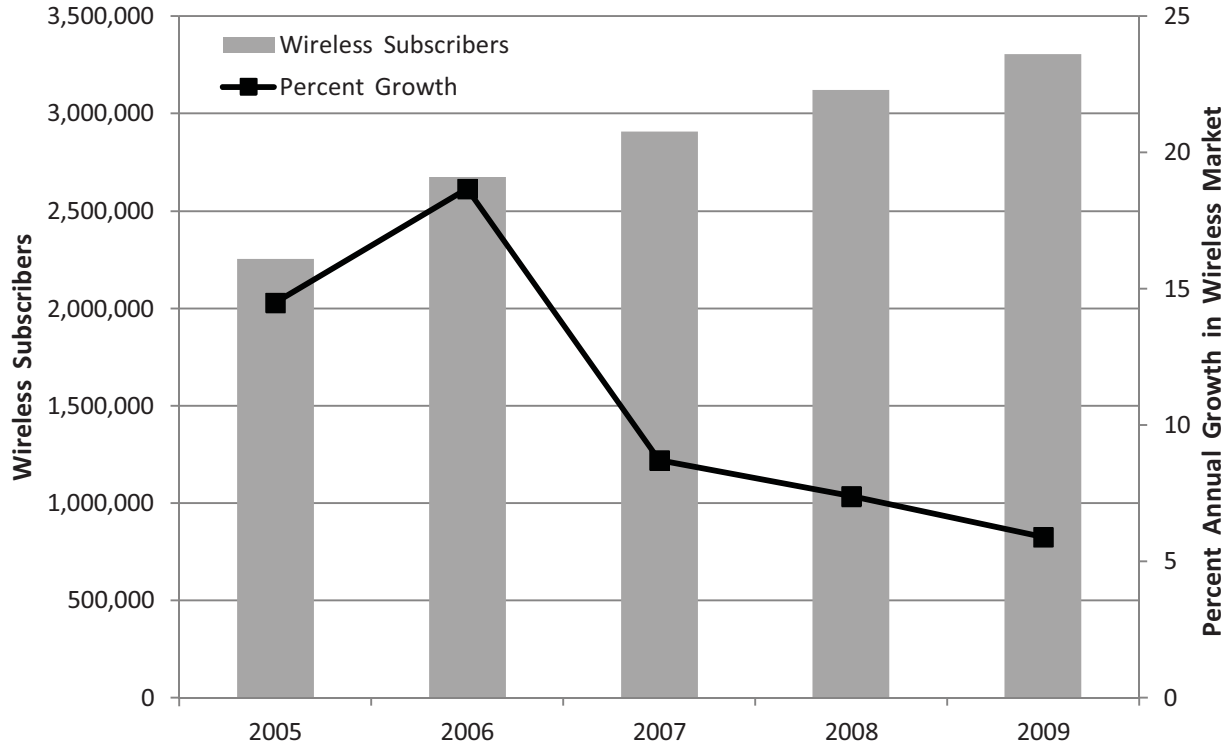
Wireless Industry Growth

Many consumers are switching from landlines to cell phones, but the wireless market may be reaching saturation.

Many consumers are eliminating their landlines in favor of wireless communications, but the growth of the wireless industry has slowed. In 2006, there were 2.25 million wireless subscribers in Kentucky. By FY 2010, that number had increased nearly 47 percent to 3.30 million (Commonwealth. Commercial. Data). As shown in Figure 3.A, the rate of growth of wireless subscribers

has declined annually since FY 2007. The annual growth rate in the wireless phone market between FY 2009 and FY 2010 was 6 percent, less than half the growth rate experienced between FY 2005 and FY 2006. Figure 3.A shows the percentage growth in the wireless market and the number of wireless phone subscribers in Kentucky by fiscal year.

Figure 3.A
Growth in the Wireless Phone Market and Number of Wireless Phone Subscribers in Kentucky Fiscal Year 2006 to Fiscal Year 2010



Source: Prepared by Program Review staff from information provided by the CMRS Board.

The FCC noted a similar pattern of slowing growth at the national level ("In the Matter of Implementation" 109-110). If this growth trend continues, the wireless market might become saturated, resulting in stagnant wireless revenue collection. The CMRS Board may wish to study the sufficiency of the current wireless surcharge rate.

Surcharge Remittance and Distribution

Since FY 2006, the CMRS Board has remitted $88.3 million to board-certified PSAPs or their designees. Table 3.1 shows the CMRS payments to PSAPs for FY 2006 to FY 2011.

Table 3.1
CMRS Payments to PSAPs
Fiscal Year 2006 to Fiscal Year 2011

Fiscal Year	Payments
2006*	$8,311,216.98
2007	11,888,593.64
2008	15,479,516.48
2009	16,361,536.22
2010	18,748,161.40
2011	17,578,692.81
Total	$88,367,717.53

*The funding formula was changed in 2006 effective in FY 2007.
Source: Prepared by Program Review staff from information provided by the CMRS Board.

Most wireless providers remit 70 cents per subscriber less a 1.5 percent collection surcharge. Some prepaid providers are remitting an average of 38.5 cents. TracFone has not remitted fees since November 2003 except for direct sales since September 2009. Some other providers also might not be remitting.

Most wireless providers remit 70 cents per subscriber minus a 1.5 percent collection surcharge. Some providers do not keep the surcharge. Some prepaid providers remit far less than 70 cents for their prepaid subscribers under the average revenue per user option. Based on a widely cited industry figure, providers using this option remit an average of 38.5 cents per prepaid device.[2] TracFone did not remit the 911 fee at all from November 2003 until September 2009 and remitted only fees for direct sales from that point forward.

[2]This is based on $27.50 average revenue per user (Flannery).

Providers submit subscriber counts by zip code to the board each month. Because there is a significant difference between the nominal fee of 70 cents and the amount actually received per subscriber, Table 3.2 shows both how the nominal 70 cents would have been allocated and how the actual receipts from the third quarter of FY 2011 were allocated.

Table 3.2
Allocation of Wireless 911 Surcharge by Fund Type
Nominal Compared With Actual Revenues as of Third Quarter Fiscal Year 2011

Revenue Description	Per Subscriber		Percent of Fee
	Nominal	Actual	
911 Fee	$0.70	—*	
Less collection cost recovery at 1.5% of gross revenues**	0.01	—	1.5%
Net revenues to CMRS	0.69	0.60	98.5
Less CMRS administrative costs at 2.5% of net revenues	0.02	0.02	2.5
Less CMRS grants at 10% of net revenues***	0.07	0.06	9.8
Funds for distribution	0.60	0.53	86.2
Less PSAP pro rata shares at 40% of funds for distribution	0.24	0.21	34.5
Less PSAP volume shares at 40% of funds for distribution	0.24	0.21	34.5
Provider cost recovery—all remaining funds	0.12	0.11	17.2

Note: Some numbers do not add to subtotals because of rounding.
*The nominal fee is 70 cents, but some prepaid wireless providers remit at a significantly lower rate or not at all. The actual average fee collected per device is unknown.
**Most providers keep 1.5%, but some providers do not retain any collection cost recovery.
***Any grant fund balance exceeding $2 million is allocated for distribution.
Source: KRS 65.7631 and CMRS Board financial information for FY 2007 to FY 2011.

The board retains 2.5 percent of all remittances for administrative costs and places 10 percent into the CMRS Grant Fund. The remaining funds are then allocated 40 percent to the PSAP pro rata fund, 40 percent to the PSAP volume fund, and 20 percent to the provider cost recovery fund.

PSAP Funding Formula

The statutory formula allocates 48 cents of the fee directly to PSAPs. Based on the actual receipts, PSAPs receive about 42 cents from each subscriber.

Under the statutory formula, a 911 fee of 70 cents would result in 48 cents for the PSAPs. The actual receipts are lower than 70 cents, so the monthly amount available for PSAPs is about 42 cents per subscriber.

One part of the PSAP fund goes into equal shares. The other part is allocated according to the number of subscribers.

The PSAP payment is based on a formula that calculates the PSAP's wireless call volume and pro rata shares. The PSAP volume payment is based on the number of wireless phone users served by the PSAP. The PSAP's wireless volume is calculated by using the number of wireless subscribers per zip code. Zip codes

are assigned to the appropriate PSAP based on the PSAP's jurisdictional boundaries. In the case where a zip code can be served by more than one PSAP, the PSAPs claiming a portion of the zip code determine the percentage to be allocated to each PSAP.

The available pro rata fund is divided by the number of certified PSAP shares. Consolidated PSAPs that were certified separately by the CMRS Board for at least 3 years prior to their merger continue to receive separate pro rata payments. For example, Lincoln County and Garrard County operated certified PSAPs prior to consolidating into Bluegrass 911 Central Communications; therefore, Bluegrass 911 Central Communications receives two shares of the pro rata payment instead of one share.

To demonstrate the PSAP funding formula allocation, Program Review staff created hypothetical PSAP scenarios with various subscriber and pro rata amounts. The average payment amount is what the hypothetical PSAPs would have received for an average month in the third quarter of FY 2011 under these scenarios. Table 3.3 shows that smaller PSAPs and consolidated PSAPs generally receive more per subscriber than larger PSAPs or PSAPs serving one jurisdiction. A more detailed illustration of the progression of funds from collection through distribution appears in Appendix F.

Table 3.3
Hypothetical CMRS Payments to PSAPs
Monthly Average Based on Third Quarter Fiscal Year 2011

PSAP	Average Subscribers	Pro Rata Shares	Average Total Payment	Payment Per Subscriber
A	4,000	1	$7,510	$1.88
B	20,000	1	10,892	0.54
C	30,000	1	13,006	0.43
D	40,000	2	21,785	0.54
E	50,000	3	30,563	0.61
F	75,000	2	29,184	0.39
G	100,000	1	27,804	0.28
H	200,000	2	55,609	0.28
I	300,000	1	70,084	0.23
J	600,000	1	133,504	0.22

Source: Prepared by Program Review staff from information provided by the CMRS Board.

Under the funding formula, smaller PSAPs receive a greater amount per subscriber than larger PSAPs do.

The pro rata payment ensures each PSAP gets a fixed percentage of the wireless revenue, regardless of the number of wireless subscribers in its jurisdiction. Program Review staff calculated the amount per subscriber each PSAP receives from the wireless surcharge. Because the current formula allots equal funding for the pro rata fund and the volume fund, metropolitan PSAPs with greater numbers of subscribers generally subsidize their less-populated counterparts. Table 3.4 shows the number of PSAPs receiving CMRS funding by amount per subscriber.

Table 3.4
CMRS Funding Per Subscriber
Fiscal Year 2011

Amount Per Subscriber	PSAPs
$0.23 - $0.42	28
0.43 - 0.62	29
0.63 - 0.82	17
0.83 - 1.02	11
1.03 - 1.22	11
1.23 - 1.42	4
1.43 - 2.30	5

Note: 105 of 108 PSAP shares were included. The three KSP posts without subscriber counts were excluded.
Source: Prepared by Program Review staff from information provided by the CMRS Board.

At the November 4, 2011, CMRS Board meeting, the board determined that in order to comply with KRS 65.7631(5)(b), KSP posts not providing 911 coverage to local governments would no longer be eligible for payments through the PSAP funding formula. The three posts not currently under contract with local governments will be paid an amount yet to be determined from the CMRS grant account until a permanent funding decision regarding these PSAPs can be made. According to board staff, the board is expected to resolve the funding issue prior to June 30, 2012.

The decision by the board to remove the three PSAPs from the funding formula will reduce the total pro rata shares from 114 to 111, slightly increasing the amount of pro rata funding each certified PSAP will receive.

Other Funding Sources

For many PSAPs, the money received from the local 911 fund coupled with the wireless fund is insufficient to cover the cost of operating the PSAP. This section describes some of the other sources of revenue.

General Funds

Most PSAPs receive local general funds as part of their budgets. In many places, general funds represent a significant portion.

Of 107 PSAPs that responded to the 2011 CMRS data review sheet, 91 were operated by local governments, and 68 indicated receiving general funds from a local government. In most cases, the amount of general funds was not reported, but one PSAP reported half its funding was from general funds and another reported one-third. Visits and interviews by Program Review staff suggest that in many places general funds are a significant portion of the 911 budget.

Kentucky State Police receives state general funds, some wireless 911 funds, and some payments from counties for its 911 service. It has not been able to determine its actual cost of 911 service.

KSP maintains a PSAP at each of its 16 posts. Thirteen posts provide 911 services for one or more counties. The other three posts dispatch KSP troopers and provide backup or overflow service for counties in their regions. State general funds are used to pay for the operation of these PSAPs. In addition, the 13 posts that serve counties receive volume payments from the CMRS Board and may charge their counties for 911 services.

KSP has been unable to determine its actual cost of providing 911 services. The amounts being charged to local governments in most cases are based solely on an estimate of additional dispatcher salaries. These estimates in many cases are many years out of date. The cost estimates do not include the cost of trunk lines, equipment, utilities, or facilities. It appears, therefore, that state general funds are being used for some of the cost of KSP 911 services to counties.

Miscellaneous Funds

While 911 revenues are typically derived from phone surcharges, other miscellaneous fees do exist to supplement 911 funding. Examples include the ambulance and hospital fees of Cumberland County, the addressing fees of Shelby County, and the alarm panel monitoring fees of Boyd and Laurel Counties. Dispatch fees from responder agencies are used by Carter, Greenup, and Todd Counties. Oldham County charges a fee to the responder agencies to offset some equipment costs.

Federal Grants Awarded to Kentucky

In 2009, the National Highway Traffic Safety Administration and the National Telecommunications and Information Administration awarded more than $40 million in grants to help 911 centers implement next generation technology. The grants could be used for hardware, software, training, or consulting service that enables PSAPs to upgrade their operations in anticipation of moving toward next generation technology. Twenty-seven states were awarded grants ranging from less than $400,000 (Kansas) to more than $5 million (Texas). Kentucky was awarded $1.17 million that will be used to develop and acquire an Internet protocol network in preparation for NG 911 deployment.

Grants Awarded to Local Governments for 911

The CMRS Board has awarded more than $4.8 million in grants since 2006. Grants help noncertified PSAPs become certified, encourage consolidation, and support improvement in 911 services.

CMRS Board. Since 2006, the CMRS Board has awarded more than $4.7 million in competitive grants. The grants have been awarded to single counties, multiple counties, and the Kentucky State Police. Local governments operating noncertified PSAPs can receive grant funding to help them purchase items needed to work toward becoming a certified PSAP. Appendix G lists each grant awarded by the CMRS Board since 2006.

Noncompetitive grants are also available to communities interested in consolidating PSAPs. KRS 65.7631 was amended in 2006 to include grant funding to encourage PSAP consolidation. Since then, the CMRS Board has awarded $1 million in consolidation grants. The consolidation grant is limited to $100,000 per PSAP, not to exceed $200,000 per county, to any PSAP that consolidates with a CMRS-certified PSAP or creates a newly consolidated Phase II PSAP.

According to statute, when counties merge and receive the consolidation grant money, the CMRS Board is prohibited from certifying a new PSAP in the county for a period of 10 years. For PSAPs that have already been awarded a consolidation grant, additional counties may join their 911 center, but they will be ineligible to receive another consolidation grant until 10 years have passed since their last consolidation grant award.

CMRS grants declined significantly in FY 2010 and FY 2011 because the board received the federal next generation grant that required a 100 percent match of funds, and the majority of the board's grant money was used to meet the matching requirement. Table 3.5 summarizes CMRS grants awarded since 2006 by type.

Table 3.5
Grants Awarded by the CMRS Board
Fiscal Year 2006 to Fiscal Year 2011

Fiscal Year	Single County	Multi-County	Consolidation	Other	Total
2006	$659,102	$284,280	$0	$0	$943,382
2007	777,741	483,860	200,000	0	1,461,601
2008	980,849	435,912	400,000*	32,788**	1,849,549
2009	960,944	0	200,000	0	1,160,944
2010	0	0	0	0	0
2011	125,000	125,000	200,000	50,000**	500,000
Total	$3,503,636	$1,329,052	$1,000,000	$82,788	$5,915,476

*Two consolidation grants were awarded; one grant was not completed, and no funds were expended on it.
**The 2008 grant was to the Kentucky State Police. The 2011 grant was to landline providers for an NG911 proof of concept project.
Source: Prepared by Program Review staff from information provided by the CMRS Board.

In spring 2011, the CMRS Board committed $1 million from the grant fund to assist noncertified PSAPs operating under landline basic 911 with their migration to enhanced 911. Board staff identified six counties as potential grant recipients: Elliott, Magoffin, Marion, Martin, Owsley, and Robertson. In September 2011, Marion County was the first of the six counties awarded a grant to assist in acquiring the technology needed for enhanced 911.

The Kentucky Office of Homeland Security administers federal grant funds that may be used for 911 purposes.

Kentucky Office of Homeland Security. The Kentucky Office of Homeland Security (KOHS) receives grant funds from a variety of federal agencies, including the US Department of Homeland Security, the US Department of Commerce, and the National Oceanic and Atmospheric Administration. KOHS then awards and administers grants to local communities within the state.

Since 2005, the amount awarded by KOHS to local communities for 911 equipment has declined by more than 95 percent. An agency official attributed this reduction mostly to reduced federal funding and greater needs by local communities in other communications areas, most notably in radio equipment. Appendix G lists 911-related grants awarded by KOHS since 2005.

Other States

Most states fund 911 with a monthly surcharge on phone service, but there are other options. Fee amounts vary widely.

The most common 911 funding approach is a monthly surcharge on landline and wireless phones, but some states use percentages of the monthly bill, percentages of a tax base, or have a universal service fund.[3] A few states have capped the surcharge a local government may assess. Some states have elected to charge the same fee for all types of call delivery, although they usually have a separate fee for prepaid wireless phones.

The monthly fees charged for landline phones vary from no fee to $5.34. Wireless fees for 911 range from no fee to $3 per month for contract or postpaid wireless phones. For those states that reported a different fee for prepaid wireless phones, the monthly fees range from 20 cents to $1. Some states charge a point of sale fee for prepaid wireless phone. These fees range from 1.4 percent to 6 percent of the retail sale or may be a flat fee of 25 cents to $1 per transaction. Appendix H lists the state 911 fees.

States use their fees to cover different types of expenses.

States pay for different types of expenses with their fees. Some states pay only for the cost of getting the call to the PSAP; others pay for dispatcher salaries and other operating expenses. As in Kentucky, it is likely that the 911 fees do not fully cover even the expenses for which they are designed to pay.

Handling of 911 Funds

The wireless statute names PSAPs, not local governments, as the recipients of funds and targets of audits.

The original 911 statute, KRS 65.750 to 65.760, made it clear that 911 services are created and controlled by local governments. The wireless 911 statute, KRS 65.7621 to 65.7643, created ambiguity by referring to PSAPs as the units for distribution of funds and for application of audits. The CMRS Board is to award grants and distribute wireless 911 funds to PSAPs, not to local governments. The statute also indicates that PSAPs, not local governments, should be audited to ensure the proper use of the funds.

CMRS money is disbursed to certified PSAPs only, unless the PSAP designates another entity. Depending on the arrangements between the local governments, board staff send fund payments to a PSAP directly; to a fiscal court; or, in the instance of some KSP arrangements, to a regional board. A KSP post that has contracted with a regional board may request that its CMRS payment be

[3]The Vermont universal service fund is a surcharge on all retail telecommunications services provided to a Vermont address. It is used in part to fund enhanced 911 (State of Vermont).

routed to that board. The regional board then pays KSP an agreed amount.

However, every PSAP operating in Kentucky belongs to some larger government entity, most through a city-county agreement. It is the managing authority that deposits the funds, controls the accounts, and approves spending. The board may send its funds to a PSAP, but those funds go to the managing authority. Local or regional 911 boards may even contract with an outside agency to handle accounting for 911 funds.

There is some question as to whether CMRS funds may be used to support noncertified secondary PSAPs. Statute and CMRS regulation require a PSAP be certified to receive funds from the PSAP distribution formula, but it is unclear whether the recipient of CMRS funding may then use that funding on noncertified secondary PSAPs to support the cost of responding to wireless emergency calls.

Recommendation 3.2

Recommendation 3.2

The General Assembly may wish to consider whether to amend KRS 65.7621 to 65.7643, when referring to distributing and auditing funds, to replace the term "PSAP" with a reference to state or local government authorities responsible for 911 services. The General Assembly may also wish to clarify how wireless funds should be distributed and controlled when local governments obtain 911 services from a state agency, and whether wireless funds distributed on behalf of a certified PSAP may be used to assist a noncertified secondary PSAP to handle wireless enhanced 911 calls.

Surplus 911 Funds

Some counties and regional 911 boards that receive services from KSP have fund surpluses. There is no prohibition on having 911 fund surpluses.

Few local governments have 911 funds that exceed their costs of providing 911 services. However, because KSP offers 911 services at a lower cost than most counties can, some counties and regional boards that have contracted with KSP do have surpluses. The combination of local 911 and wireless funds is more than the amount KSP charges for 911 services. In some cases, the surpluses have become substantial.

One county reported a surplus of about $300,000 that was held for possible future expenses related to 911. According to a county official, the county paid KSP $112,000 per year and the post also received the CMRS funds.

One regional board reported a surplus of almost $1 million in FY 2011, which does not include local surcharge surpluses held by the member counties. The KSP post answering 911 calls for the member counties received less than $63,000 in FY 2011 from the regional board for providing the service; however, the board received more than $170,000 in CMRS PSAP payments on KSP's behalf.

There is no prohibition on having surplus 911 funds. As 911 funds, they should be used only for permissible local or wireless 911 expenses, depending on the source of the funds.

If costs decline as expected, it is possible that other counties will have 911 fund surpluses.

As aspects of next generation 911 are implemented, it is possible that costs will decline for other PSAPs to the point that local governments might have surplus 911 funds. Program Review staff did not determine whether this has happened yet for the counties involved in the NG911 projects in Kentucky.

There does not appear to be a statutory limit on the amount of surplus funds that a local government may retain. There also is no requirement that local 911 fees be reduced or that state wireless fees be returned. The only restriction is that the funds may be used only for 911 purposes.

Recommendation 3.3

Recommendation 3.3

The General Assembly may wish to limit the amount of 911 funds that a local government may hold in reserve for future expenses and to require local governments to reduce 911 levies or return state wireless funds when revenues exceed costs.

Chapter 4

Funding Methods

This chapter describes issues and choices involved in funding 911 services, most basically, the choice between general revenues and dedicated 911 funds. For dedicated 911 funds, it describes the choices between full and partial funding and among different ways of levying a 911 fee. The chapter then considers the current fee structure for landlines and wireless services, describing the different fees and some of their implications. It outlines the disagreements between the prepaid wireless industry and Kentucky's CMRS Board and considers the option of a point of sale 911 fee for prepaid wireless service.

The 911 funding implications of subsidized or free phone services are discussed. The last section describes the North Carolina approach to funding 911 services.

General Revenues as a Funding Source

State and local governments generally have supported 911 with dedicated funding, mostly through phone service fees. Providers have expressed dissatisfaction with this approach.

State and local governments have long considered 911 an essential public service and established specific funding methods to help support it. The National Emergency Number Association and other public safety groups support dedicated 911 funding to ensure that 911 receives a reliable amount of baseline revenue. The federal ENHANCE Act of 2004 provided grants only to states that protected 911 funds from other uses. History and expectations in the United States appear to favor dedicated 911 funding.

Most 911 fees appear on customers' phone bills. Phone service providers have expressed dissatisfaction with the number and amount of taxes and fees that they must collect (Mackey). Others have pointed to the disparities between the fees levied on different kinds of phone service and different jurisdictions (Hamilton).

A state may fund 911 entirely from general revenues, as most European countries do. There is concern that 911 typically has been underfunded and would not receive adequate funding from general revenues.

A state is free to fund 911 entirely from general revenues and include 911 in the budget process with other public safety services. According to an official of the European Emergency Number Association, a general revenue system is used in most European countries to fund emergency number services. Such a system eliminates the need to collect special fees and to monitor their use.

A concern of the National Emergency Number Association about using only general funds for 911 services is that 911 is typically underfunded and "will not receive its fair share of funding if there are not specific funding sources for 9-1-1" (8).

Dedicated funding increases the likelihood, but does not guarantee, that those funds will reach PSAPs. Legislatures and local governments may exercise their legitimate authority to appropriate the funds for other purposes.[1] For example, the 2006 budget bill transferred $351,400 from CMRS funds into the general fund for FY 2006 (2006 RS HB 380 Part V.A.4). According to an FCC report, several states transferred 911 funds to state general funds and other uses in 2009 (US. Federal. "Second" 10-12).

There might be ways to obtain adequate 911 funding without dedicated funds. One possibility would be to establish the reasonable costs required for PSAPs to meet a standard level of service and put reporting requirements in place to ensure that the General Assembly and local governments are aware of the funding needs of 911 service.

The following sections describe this and other policy issues and related recommendations. Many of the policy decisions will depend on having a comprehensive statewide 911 financial statement.

Dedicated 911 Fees

Opinions differ on what dedicated 911 funds should be used for.

It is important to clarify what purposes dedicated 911 fees may be used for. From 1984, Kentucky gave local governments the flexibility to raise funds for 911 services using any means not prohibited by the Constitution or state statute. This included the authority to levy a newly created landline surcharge. The original intent may have been to cover only the extra costs of routing the 911 call so an existing and already funded agency could answer it. Maine takes this approach.

Some Kentucky jurisdictions attempt to draw the line for local 911 fee spending between answering a call and dispatching the responders. Others include dispatcher salaries and certain other dispatcher costs such as the radio equipment in the PSAP. Some local governments also include in their 911 surcharges the radio repeaters necessary to reach responders in other parts of the county or region. A few PSAP directors expressed the opinion that local

[1]For local governments, this would apply only to local 911 funds.

911 fees should be available for radios and mobile data units for the responders themselves.

Some states draw an additional line between infrastructure and personnel. North Carolina, for example, pays for all PSAP equipment but does not cover call taker and dispatcher salaries with its 911 funds. It also does not pay for the facility itself.

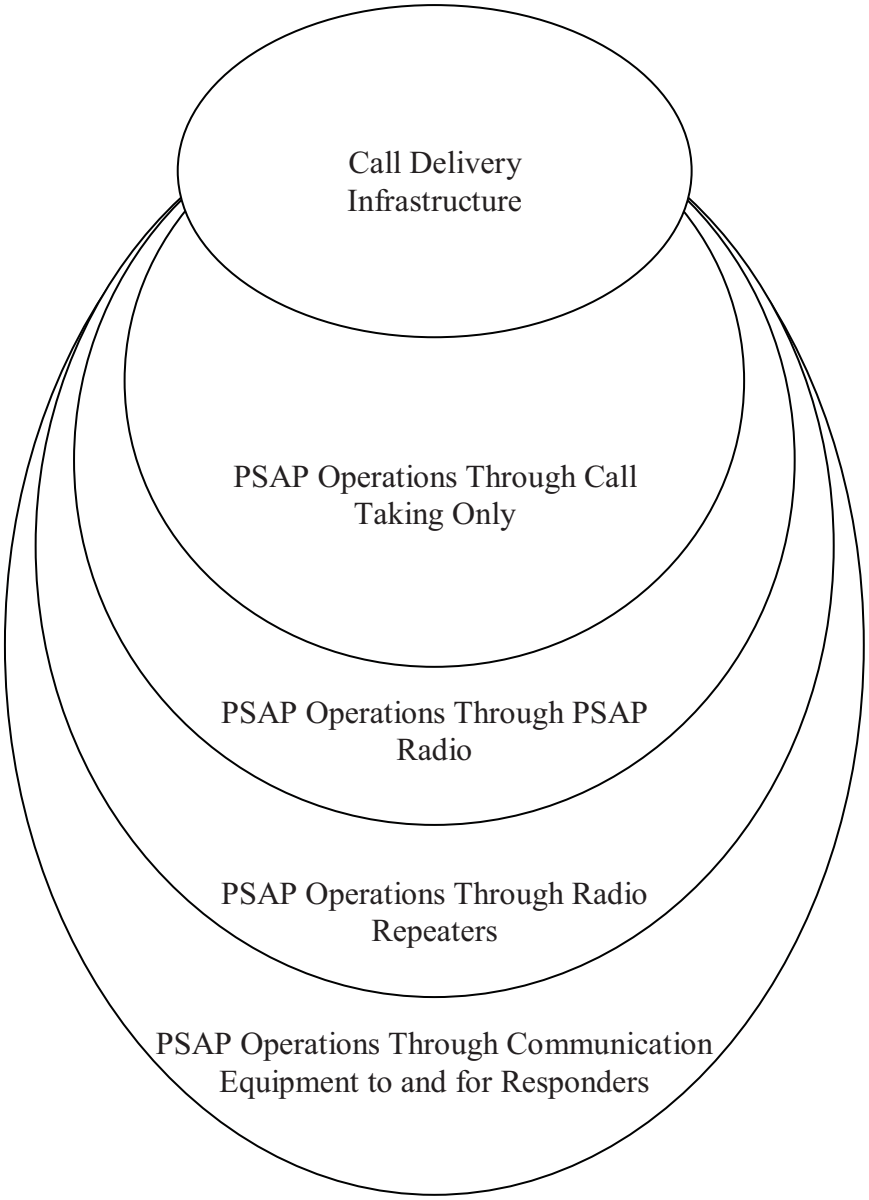
States vary so widely in the scope of use of 911 fees as to make a meaningful comparison difficult.

States vary so widely in the scope of use of 911 fees as to make a meaningful comparison difficult. In order to compare the amounts of fees assessed in each state, it would be necessary to look at the scope of fee usage and the amount of general funds also applied to 911 services.

States also vary on how limitations on fee usage are implemented. Some make them statutory or regulatory; others simply publish guidelines that are not necessarily binding, although abidance by the guidelines may affect further funding.

Figure 4.A provides a picture of the ways 911 funds might be used. It distinguishes infrastructure on the left from personnel costs on the right. Infrastructure includes the communication lines, equipment, furniture, utilities, and facility costs.

Figure 4.A
Uses of Dedicated 911 Funds



Note: For any of the uses shown beyond call delivery infrastructure, use of funds might be permitted for infrastructure, personnel, or both.
Source: Program Review staff compilation.

The local 911 fee statute has been interpreted broadly.

KRS 65.760 states that all revenues from a local tax or fee expressly levied to fund 911 emergency services shall be expended solely for the establishment, operation, and maintenance of "a 911 emergency communications system." Some local governments have interpreted the local 911 fee statute broadly. Most seem to include expenses through the radio equipment in the PSAP that is used to communicate with responders. A few include radio repeaters in other locations.

Some PSAP expenses might not fall even within a broad interpretation of this statute. For example, some PSAPs operate a "reverse 911" system that alerts residents by phone when there is an impending disaster. Such a system does not appear to qualify as a 911 emergency communications system as contemplated in the statute. Other expenses outside the PSAP, such as police, fire, or ambulance vehicles, seem outside the scope of 911 funding.

The wireless 911 fee was intended primarily to support conversion to E911 and to help cover the incremental costs of receiving 911 calls. Regulations specify clearly what is permitted.

Kentucky's wireless 911 fee, administered at the state level, was originally intended primarily to support wireless service providers and PSAPs in the conversion to wireless E911 and to help cover the incremental costs of receiving wireless 911 calls. The CMRS Board has promulgated regulations that specify how wireless 911 funds may be used. These funds may be expended only for costs that are directly attributable to the provision of enhanced 911 service involving calls from wireless consumers (202 KAR 6:090 Sec. 2(1)).

The types of allowable expenses that may be paid for from CMRS funds are

- personnel costs, including salaries;
- facility costs;
- training and membership expenses;
- hardware, software, connectivity, and peripherals;
- vehicle costs directly attributable to the delivery of 911 service;
- professional services such as attorneys, consultants, auditors; and
- public information and education expenses.

PSAPs may choose which of these to pay with CMRS funds, but they may not pay for other types of expenses. A more extensive list is in Appendix I.

Adequacy of 911 Fees

Policy makers also need to decide whether dedicated 911 fees should cover all the costs within their scope rather than also using general funds. A statewide 911 financial statement would help with that decision.

If the current system of dedicated 911 fees is kept in place, policy makers must decide whether dedicated 911 revenues should cover all or only part of the costs that the revenues are permitted to be used for. The available information indicates that most jurisdictions find the 911 revenues inadequate and supplement 911 fees with general funds.

If there were a statewide 911 financial statement, policy makers would know how each of the areas outlined in Figure 4.A is paid for. Based on interviews and the limited information available, it appears that in most states and certainly in most Kentucky

counties, the local and wireless 911 revenues do not fully pay for PSAP operations. Local governments almost always make up the difference with general funds, and the state police appears to subsidize its PSAPs using state general funds.

Sources of 911 Fees

Most funding assumes the users of 911 should pay for it. Historically, most households had one line and paid one fee, but today a person may have multiple devices and pay multiple fees.

At the foundation of 911 funding is the assumption that the users of a 911 service should pay for it. Most jurisdictions in the United States attempt to accomplish this by levying a fee on phone service.

Basis of 911 Fees

Historically, the vast majority of households with a phone had only one line, so the fee usually amounted to a payment of one 911 surcharge per household, regardless of the number of people living there. Today, individuals may own two or more devices that can contact 911, such as a landline, a cell phone, and a VoIP connection. Instead of one fee per household, each individual may pay multiple 911 fees. To the extent that a person will use only one device at a time to contact 911, it might be more equitable to charge only one fee per person or household.

Businesses also have to be considered. Landline fees for business are limited in most states, including Kentucky, to a maximum number of lines per account. Kentucky's limit is 25 lines. There is no similar limit on cell phone accounts. Program Review staff have no information on whether businesses account for more or fewer calls per phone line than residences, so it is not possible to recommend a specific method for businesses to support 911.

Sourcing, or determining the place of primary use, is a challenge for cell phone and VoIP providers.

Another challenge with a device-based fee is called sourcing, or determining the place of primary use. The place a wireless subscriber primarily uses the cell phone might be in a different county or state from the billing or home address. For example, college students often live most of the year in different towns or states from their billing addresses. Fees collected on these devices will, in a sense, accrue to the wrong jurisdiction.

Prepaid cell phones also present sourcing difficulties. The provider asks for a zip code when the phone number is assigned. The zip code determines the area code and the group of exchanges from which the number is drawn. However, the provider does not know

whether the customer has moved to another location unless the customer informs the provider.[2]

Nomadic VoIP service providers such as Vonage, magicJack, and netTALK do not know where their customers have installed their devices. These providers offer E911 service, but they depend on their customers to register a current address every time they move the devices. Such nomadic service providers have to collect and remit fees based on this limited and possibly erroneous location information.

As new communications technology or business models arise, the 911 fees may have to be modified to ensure support.

Every time a new communications technology or business model arises, there seem to be new difficulties adapting the 911 fee system to ensure support. For example, some states have enacted statutory language that specifically requires interconnected VoIP providers, both fixed and nomadic, to pay fees equivalent to the 911 fees already established for older technologies. Michigan has attempted to anticipate future communication methods by stating that all providers of a communication service within a 911 service district shall bill and collect a state 911 charge from all users of the service (MCL 484.1401a, Sec. Sec. 401a. (1); MCL 484.1102). Even with this approach, Michigan handles prepaid wireless charges separately.

The federal and state governments so far have not found it feasible to place requirements on all such services in advance. Probably, only the federal government could require that providers of new communications technologies be able to communicate with 911 and collect 911 fees as conditions for entering the market. Absent such a requirement, state governments must continually play catch-up with device-based 911 fees.

Other 911 fee options include surcharges on sales or property taxes, utility bills, and income taxes.

One option is a 911 surcharge on sales taxes, which Missouri has implemented. The burden of a sales tax surcharge would vary depending on spending patterns. In Kentucky, local governments could not levy a sales tax surcharge; it would require state action and might violate the Streamlined Sales and Use Tax Agreement.

Another option is to levy a 911 surcharge on property taxes, as some counties in Nevada do. The burden of a property tax surcharge would vary depending on property ownership.

[2]Although the provider might be able to examine the customer's calling pattern to guess a place of primary use, the wireless industry indicated that doing so would require significant system changes. It also presents practical problems.

Utility surcharges have been proposed by public safety advocates. Electric power or water bills could carry a surcharge to most households. However, they would not result in a fee per person and would not account for some renters and boarders with shared utilities.

The wireless industry association proposed adding a line to the Oregon personal income tax form. The fee would be based on the number of personal exemptions listed on the form and it could be added to the total tax liability. However, this proposal would fail to collect from anyone who does not file or appear on an income tax return.

Another funding option is to assess a fee on service providers themselves as a cost of doing business.

The providers of communications services that can access 911 could support the system as a cost of doing business, paying the fee instead of their subscribers. A uniform provider fee could be imposed on all telecommunications providers based on revenues or subscriber counts.

A proposed method, similar to one used in Europe, would charge PSAP costs back to the providers that carried the calls.

A Vermont 911 official proposed that PSAPs could use the call identification data to determine the caller's service provider and send a bill periodically to each service provider to cover the cost of 911 calls it carried. The providers could build that cost into their pricing as what would be a kind of 911 insurance plan. Such a system would be similar to the method used in Ireland and the United Kingdom, according to the European Emergency Number Association. However, it would require a significant change for PSAPs and providers. It also fails to account for differing 911 fee rates and costs across state lines.

There does not appear to be an ideal model for collecting a uniform fee from all individuals, households and businesses, or devices. For the options described above, Program Review staff were unable to estimate the number of individuals or households that might be missed or counted in the wrong jurisdiction. An assessment of jurisdictional imbalances would require a comprehensive statewide 911 financial statement, which is not yet available.

Device-based 911 Fees

This section assumes the continuation of the current policy of levying a different 911 fee on different devices in different places. It describes the current scenario and some policy options.

Multiple 911 Fees

Local governments were solely responsible for 911 costs until 1998, when the state implemented the wireless 911 fee.

In Kentucky, local governments were solely responsible for paying for 911 services until 1998. By then, cell phones had proliferated, and the FCC ordered wireless providers to provide 911 service wherever a PSAP requested it. Rather than permit local governments to levy a 911 fee on cell phones, the General Assembly levied a statewide fee on wireless service and provided a method to distribute it to PSAPs.

Local 911 fees vary widely, but considered with general revenues and other local funding, total funding is probably comparable to the needs of each jurisdiction.

Local 911 fees, mainly landline fees, already varied greatly by jurisdiction, and the wireless fee added another disparity. Today, local landline fees range from no fee to $4.25 per month. The wireless fee remains 70 cents per month.

In most cases, the local disparities probably are offset by other funding. Local governments usually experience a gap between the total cost and 911 funds. The gaps vary, but local governments use general funds to cover them. In this way, total local funding probably is comparable to the needs of each jurisdiction.

The difference between the state wireless fee and local fees might create a competitive disparity.

The state levy on wireless service might create a competitive disparity. Unlike 1968, telecommunications today is a competitive environment. Traditional landline phone companies, cable companies, VoIP companies, and wireless phone companies compete for subscribers. If the landline 911 fee is $4 and the wireless 911 fee is 70 cents, subscribers might more seriously consider dropping their landlines.

Local governments contracting with Kentucky State Police take advantage of a lower-cost service that residents across the state subsidize. The wireless 911 fund also subsidizes smaller PSAPs.

Subsidies. Local governments that contract with KSP take advantage of a lower-cost service; they may need to spend no general funds and might be able to reduce their 911 fees. Residents across the state effectively subsidize these arrangements. In addition, the wireless fund distribution formula is designed to give more support to smaller PSAPs than to larger ones.

If there is a dedicated 911 fee associated with communication devices, then one option is to assess a uniform fee. Distribution might be uniform by population or might support smaller communities at a greater level.

Summary of Options. If there is a dedicated 911 fee associated with communication devices, one option is to assess a uniform fee on all devices. Some states, including North Carolina and Maine, have a single fee for all devices except prepaid wireless. Distribution of funds might be uniform by population or it might support smaller communities at a greater level.

Prepaid Wireless Service

Prepaid cell phones initially focused on customers with poor credit. The phone number is assigned according to the zip code that the customer says will be the place the phone will be used the most. Minutes are purchased in advance.

Prepaid wireless service initially focused on customers without sufficient credit to qualify for conventional service contracts. Typically, such a customer purchases a cell phone and a prepaid card. When activating the phone, the provider asks the customer for the zip code in which the phone will be used the most. Using that location, the provider assigns a standard phone number with a corresponding area code and exchange. The phone will work as long as it has a balance of minutes or service time. The customer is responsible for adding service—known as recharging—as needed.[3]

Some prepaid providers asserted that 911 fee statutes did not apply. Some states adopted a 911 fee model specifically for prepaid that has options from which a provider may choose. Kentucky effectively has two options.

Prior to 2006, some prepaid service providers paid the wireless 911 fee for their customers; others asserted that the existing statutes did not apply to their business models and withheld payments. In response, some states adopted versions of what has come to be known as the "Tennessee model." In 2006, Kentucky adopted this model as KRS 65.7635. It offers a prepaid service provider three payment options:

1. Deduct the value of the fee from the customer's account each month if there is a sufficient positive balance, also known as the decrement method.
2. Estimate the number of devices by dividing the total revenue received from customers in the state by $50 and remit the value of the fee for each. The intent was to estimate the number of customers by assuming the average revenue per user (ARPU) was $50.
3. An authorization permitting the state wireless 911 authority to promulgate an alternative by regulation.

The CMRS Board has declined to promulgate a regulation to provide a third option. In Kentucky, therefore, there are only two effective options.

Most providers remitted under one of the two available options. Virgin Mobile attempted to recover fees paid under the previous statute. TracFone declined to remit under either statute.

The CMRS Board was not certain which method providers have used. For providers that the board audited, the board had information on the method used at the time, but the audits occurred every 2 years, and the board did not require providers to submit updated information on the method used. It is known that AT&T uses the decrement method for Kentucky and many other states. As of Sept. 29, 2011, AT&T listed 15 states and Puerto Rico for which it deducted time for 911 fees (AT&T. "GoPhone"). Cincinnati Bell remitted under that provision until 2010. Some prepaid providers remitted under the ARPU method. Others asserted that the statute was flawed and refused to remit.

[3]Any cell phone, whether in service or not, can dial 911.

Virgin Mobile decided to remit under the new statute but contended that it should not have owed a fee under the old statute. The company then withheld funds to repay itself for fees it had remitted under the old statute.

TracFone asserted that all the accounting of air time occurred inside its phones, so it did not track its customers' use of minutes and had no mechanism to deduct minutes from its customers' balances.

In order to recover the fee from prepaid providers that refused to remit, the CMRS Board brought separate lawsuits against Virgin Mobile and TracFone. The Virgin Mobile case did not address the new statute but the decision found that the prepaid provider was obligated to remit under the prior statute. The TracFone decision found that the provider was obligated to remit under both statutes. Both cases are under appeal.

Discussion of Existing Prepaid Fee Statutes

The original wireless statute expected the subscriber to pay the 911 fee as listed on the provider's bill and held the provider harmless if the subscriber failed to pay the fee (1998 Ky. Acts ch. 535, sec. 8). As amended in 2006, the statute still holds that expectation for postpaid contract subscribers (KRS 65.7635(1)), but it now requires prepaid providers to remit a 911 fee whether or not they are able to recover it from the customer. Even so, both of the Kentucky statutory methods for collecting prepaid wireless 911 fees present difficulties.

The original wireless statute expected the subscriber to pay the 911 fee. The amended statute retains that provision for postpaid subscribers, but prepaid providers have to pay at least some of the fee for their customers.

Little information is available on how providers implemented the decrement method, so it is not possible to say whether it was done correctly. This is a question the CMRS Board should raise with providers.

The statute appears to require providers using the decrement method to remit 70 cents from each customer whose balance has that much value or more and to deduct that value from the customer's balance. As described in detail in Appendix J, the provider is unable to deduct the full value and has to pay some of the fee from its own revenues unless the provider finds another way to recover the cost.

Under the ARPU method, the provider pays the fee out of its own revenues and then is free to attempt to recover it, either by deducting value from the customer's balance, by building it into the wholesale price, or by any other legitimate method. Program Review staff are unaware of any provider that recovers the fee from its customers for resold service. For direct sales, at least one provider collects the fee from its customers.

The ARPU method, however, does not generate 70 cents per customer. Rather, it probably generates on average about 38.5 cents. The amount per customer will also vary because providers have different average customer revenues. Appendix J describes the calculations in detail.

The average revenue per user method (ARPU) would be consistent if each provider used its own actual ARPU. However, the only reason for having the ARPU method is to estimate the number of subscribers that owe the fee. This appears to be unnecessary because providers are already submitting subscriber counts.

In order to meet revenue targets and be consistent across providers, the ARPU option would have to be changed. Each prepaid provider would divide the total revenues attributable to Kentucky by its own currently published ARPU, giving the total number of devices on which the fee is owed. South Dakota has implemented this approach. Such a calculation would come close to generating 70 cents per device.

The only reason for having the ARPU method is the assumption that some prepaid providers cannot determine how many devices there are in the state. However, prepaid providers have been submitting customer counts to the CMRS Board, so the ARPU method does not seem necessary.

Another method would require prepaid providers to remit 70 cents per subscriber.

The intent of both the decrement method and a modified ARPU method is that the state should receive the full 70 cents for each device. Another method would be to require prepaid providers to remit 70 cents for each device attributable to Kentucky. Providers would be free to develop a way to recover the fee if they chose to do so.

A policy question is whether Kentucky should have several different 911 fee systems with potential competitive and distributional differences

A policy question is whether Kentucky should have several different 911 fee systems with potential competitive and distributional differences. It is important to establish whether multiple approaches such as these are acceptable because future technologies may require additional methods to collect 911 fees.

Prepaid Wireless Point of Sale 911 Fee Method

The prepaid wireless industry proposed a point of sale (POS) fee collection method, and the National Conference of State Legislatures (NCSL) adopted a model POS bill. A POS fee would avoid some of the difficulties with the current method but would introduce others.

The prepaid wireless industry has proposed a point of sale (POS) fee collection method to replace the other prepaid 911 fee methods. On July 20, 2009, the National Conference of State Legislatures (NCSL) adopted a model POS bill (National Conference. Executive. "NCSL"). As of July 1, 2011, 17 states and the District of Columbia had enacted some version of the POS model (CTIA 2). This section summarizes the main points regarding a POS fee.

The NCSL model bill has the following significant features (National Conference. Executive. "Model").

1. Sellers collect a separate, nontaxable 911 fee when prepaid wireless service is sold and remit it to the state Department of Revenue in the same manner as a sales tax. It is then transferred to the appropriate 911 office or agency.
2. "States may choose to impose either a flat fee per retail transaction or a percentage of each transaction."
3. "The fee should be set at an amount that is not more than one-half of the state's monthly postpaid E911 charge."
4. The fee should be collected on all prepaid wireless service transactions that occur at a business location in the state or that meet the state's criteria for taxable out-of-state transactions by phone, mail order, or the Internet.
5. Under a percentage fee, if service is bundled with the device, the fee would apply to the entire purchase unless the value of the service is specifically stated or can reasonably be separated from the total cost.
6. If the postpaid 911 fee changes, the POS fee should be changed proportionately.
7. Sellers keep 3 percent of the amount collected. The Department of Revenue keeps up to 2 percent of the amount collected.

A POS fee for prepaid wireless service would avoid some of the issues associated with collecting a 911 fee through the service providers. However, a POS fee introduces some additional difficulties.

Nonuniform Fee

Customers are likely to pay significantly different amounts depending on their purchasing patterns and on whether the fee is a flat amount per transaction or a percentage of the purchase. Given the market of prepaid service, a POS fee would be regressive.

Like the ARPU method, users or devices will pay different amounts each month toward the 911 fee. With a flat POS fee, the amount the customer will contribute depends on the number of transactions each month. KSE Partners developed an estimate of purchasing patterns for the wireless industry association. It

estimated that about 5 percent of customers make four purchases a month and another 30 percent make one purchase every 2 months. If the POS fee were 70 cents, the first group of customers would pay $2.80 a month and the second group would pay 35 cents a month. In fact, the smaller group would contribute more total 911 revenue than the larger group. Table 4.1 illustrates this difference.

For a percentage POS fee, the difference will depend on how quickly customers use their service and on the size of each purchase. If the rate is 2 percent, a customer who buys a $60 card and uses it over a period of 3 months will contribute 40 cents per month. A customer who buys a $60 card each month will contribute $1.20. The cost per minute also varies depending on the amount purchased at one time. A T-Mobile customer who uses 120 minutes a month buying four $10 cards will contribute 80 cents to 911 revenues. Another T-Mobile customer who uses even more minutes but buys a 130-minute card at $25 will contribute 50 cents to 911 revenues.[4]

In addition to the uneven distribution of the fee, a POS fee may be regressive. According to an analysis by the FCC, prepaid service has tended to focus on younger and poorer customers ("In the Matter of Implementation" 67). It seems reasonable to assume that customers with less income will purchase smaller increments more frequently. As illustrated above, both a flat fee and a percentage result in a higher fee contribution for such purchase patterns.

Revenue Targets

Most states have received little or no revenue from prepaid in the past. The objective is not to generate more revenue but to generate the same revenue per customer as postpaid service does.

Wireless industry representatives have frequently asserted that 911 POS fees in other states have generated more revenue than the state received previously from prepaid services. This is generally true, but only because most states have received little or no revenue from prepaid services in the past.

If the intent is to collect the same fee from each device, the correct benchmark is to compare the revenues from a POS fee with what would be generated by the postpaid fee applied to all prepaid devices. First, it is essential to know or estimate the number of prepaid devices in the state. From that, it is possible to determine the amount that the fee should raise. For every 100 prepaid devices in Kentucky, the 911 fund should receive $70 per month. The revenue estimates for a POS fee should be compared with that target.

[4]T-Mobile used for illustration. Based on advertised prices in October 2011.

The rate advice in the NCSL model bill produces less than half the target revenue.

In order to achieve revenue targets, it is first necessary to estimate an initial POS fee. This must be done differently for a flat fee and a percentage fee. Unfortunately, the rate advice in the NCSL model bill produces less than half the target revenue in either case.

A flat POS fee of 72.5 cents rather than 35 cents probably would produce revenues equivalent to the postpaid fee.

Flat Fee Target. Kentucky might adopt a flat fee of 35 cents as recommended in the model bill. In that case, using the KSE Partners estimated purchasing pattern, the revenue generated per 100 devices would be $33.83, less than half the expected $70. In general, if the purchasing pattern estimate is correct, a fixed POS fee should be slightly higher than the monthly postpaid device fee. Table 4.1 shows that a POS fee of 72.5 cents would come closest to producing $70 of revenue.

Table 4.1
Flat 911 Point of Sale Fee Revenue Estimates Per 100 Customers

	Percent Customers	Revenue at 35 cents	Revenue at 70 cents	Revenue at 72.5 cents
Recharge 4 times a month	5	$7.00	$14.00	$14.50
Recharge once a month	60	21.00	42.00	43.50
Recharge every 2 months	30	5.25	10.50	10.88
Recharge every 3 months	5	0.58	1.17	1.21
Revenue per 100 devices		$33.83	$67.67	$70.08
Revenue per device		$0.34	$0.68	$0.70

Source: KSE Partners and calculations by Program Review staff.

Beginning in FY 2011, Indiana levied a fixed POS fee at half its postpaid fee. According to the state 911 director, after a year Indiana's prepaid revenues were 38 percent below previous prepaid fees, even though not all providers remitted under the previous statute. Therefore, the POS revenues probably were significantly more than 38 percent below the target.

Maine and North Carolina established fixed POS fees equal to their postpaid wireless monthly fees instead of the NCSL recommendation. Maine, however, did not determine the number of prepaid devices and so does not have a total revenue benchmark for comparison. North Carolina also has no information on the number of prepaid devices, and its fee will not be effective until 2013.

Percentage Fee Target. With a percentage fee, the NCSL advice is to set the rate at no more than half the current rate. For Kentucky, it would be possible to determine the current percentage rate by dividing the 70 cents monthly fee by the average monthly

retail sales per user.[5] The resulting percentage would generate the same revenue as the current monthly fee would. Therefore, setting the POS fee at half that rate would produce half the revenue target, no matter what the average monthly sales amount turned out to be.

Unfortunately, there is no good source of total or average prepaid sales. Program Review staff asked the prepaid wireless industry for this information, but industry representatives did not submit it. Program Review staff recognize that providers should know roughly the face value of the cards that have been sold, but it might be difficult for providers to determine the value sold during any given time period to customers in a specific state.

A percentage POS fee of 2.5 percent probably would come close to generating revenues equivalent to the postpaid fee.

A rough estimate can be made based on the prepaid industry's ARPU. A widely cited Morgan Stanley estimate of prepaid ARPU from 2009 was $27.50 (Flannery). Some portion of sales is via the provider's website or phone directly to the customer. The retail value of those sales is included in ARPU. The remainder of sales is through resellers, so only the wholesale value appears in ARPU. Using this ARPU figure for Kentucky without adjusting for retail markup gives just over 2.5 percent. Adjusting for the retail markup would reduce this figure by an unknown amount, but concerns about being able to collect all the fees owed probably justify keeping the rate at the higher percentage.

Texas implemented one of the earlier POS fees on prepaid wireless service. The Texas postpaid wireless fee is 50 cents per month. Based on the estimation method above, a percentage prepaid POS fee would be set at 1.8 percent. The Texas fee was set slightly higher, at 2 percent. It is not possible to compare the Texas POS revenues with postpaid wireless because postpaid 911 fee collections are combined with landline revenues, and some of those revenues go through different offices.

The calculations above do not take into account collection cost and noncompliance. These issues are described later.

Maintaining Target Revenues

The NCSL advice for adjusting a POS fee is unlikely to keep revenues equivalent to postpaid revenues. Other methods would use subscriber counts or estimates to monitor POS revenue per user and adjust the fee as needed.

The NCSL model bill provides that the POS fee should change only in proportion to changes in the postpaid 911 fee. This provision ignores the fact that the postpaid fee is collected per subscriber per month, while a POS fee is collected per transaction.

[5]This is not the average revenue per user. ARPU is a mix of wholesale and retail receipts depending on whether the provider made the sale through a reseller (wholesale) or directly to the customer (retail).

A POS fee, therefore, will vary according to shifting purchase patterns, service prices, and market share. Depending on the trends in these factors, if the POS fee rate is tied to the postpaid fee rate, the POS fee is likely to drift away from the goal of matching the per-device revenue from postpaid devices.

An apparently straightforward method would require prepaid wireless providers to continue to submit subscriber counts to the CMRS Board as they do now. A less accurate method would be to estimate the number of prepaid devices from FCC and market survey information. Either way, board staff could calculate the target amount of the 911 POS fee by multiplying the total prepaid subscriber count by the postpaid fee amount. The board could be given responsibility to promulgate regulations to adjust the POS fee up or down so that revenues continued to meet the target.

Uncollected POS Revenue

A POS fee is difficult to enforce for purchases by phone or the Internet.

It is easy to know that a POS fee applies to purchases that take place in a store physically located in the state. When the customer purchases service by phone or the Internet, not only is it difficult to know whether a POS fee applies, but it is difficult to enforce. This is also a well-known problem with sales taxes.

A remote seller is required to collect a POS fee only if it has a substantial business presence, or nexus, in Kentucky.

The sourcing rules for a POS fee or sales tax determine which state's fee or tax should be applied. Because of the rules of interstate commerce, sellers are required to collect and remit taxes and fees only for states in which they have a substantial business presence, called a nexus.

In the absence of a national solution, NCSL and the states developed the Streamlined Sales and Use Tax Agreement (SSUTA), which Kentucky has adopted. Member states use the same or very similar rules for sourcing transactions, offer sellers subsidized tax administration software, and provide sellers with a standard database detailing their taxable items and rates. In exchange, some sellers without a nexus voluntarily collect and remit taxes for member states.

When a remote seller does not collect a state's tax or fee, in most cases the customer becomes responsible for paying it as a use tax (KRS 139.105(1)(b) and 139.310). In Kentucky, for example, the personal income tax return includes a line for reporting out-of-state purchases on which sales tax was not paid. However, compliance with such self reporting and payment is thought to be low (Nellen).

Program Review staff examined 10 online prepaid service resellers. None of them would collect a Kentucky POS fee. However, the market share for these sellers is not known.

In the prepaid wireless market, there are many websites that resell prepaid cards. Program Review staff conducted an Internet search and reviewed or contacted the first 10 found. Of those sites, nine indicated that they did not collect any sales taxes or fees. Several sites prominently displayed a notice to that effect. The 10th indicated that it collected sales tax only for the state in which it operated. These online resellers are within their rights not to collect taxes and fees for Kentucky, although some of them might be violating their own states' laws.

Program Review staff were unable to find any information on the market share of such remote sellers. Representatives of the prepaid wireless industry stated that they had no data on the amounts resold through websites other than their own.

The prepaid industry reported that all providers acknowledge nexus in all the states they serve and so collect POS fees and sales taxes from customers that purchase directly from the providers by phone or website. These customers pay using a credit card, and the provider collects sales taxes and a POS fee, if any, based on the billing address.

Another potential loss of revenue involves crossing state lines. If a state imposes a POS fee and neighboring states have a lower POS fee or none at all, some customers might purchase their service in the neighboring state in order to reduce their cost. It seems likely that this loss would be relatively small except for individuals who routinely visit and shop in the neighboring state.

Noncompliance with POS taxes and fees is an acknowledged issue. Unlike a fee based on a relative handful of providers, thousands of sellers must know about, collect, and remit a POS fee. The Department of Revenue has to audit sellers to ensure that they are collecting and remitting the proper amounts of sales tax. If a prepaid 911 POS fee were implemented, that fee would be covered by the same audit process.

None of the states contacted by Program Review staff was able to provide definitive information about compliance with their POS fees. Their fees were implemented so recently that the revenue agencies have not yet completed an audit cycle. State and local officials in Louisiana indicated anecdotally that some noncompliant sellers have been found by 911 personnel while doing their own shopping. A 911 official in Colorado asserted that compliance was low.

Some portion of a POS fee would be uncollected. Setting the fee to generate a revenue target might place a slightly greater burden on customers who purchase through sellers that collect the fee.

Assuming that some portion of 911 POS fees owed by Kentucky residents would be uncollected, setting the fee to generate a revenue target might be place a slightly greater burden on customers who purchase service through a channel that does collect the fee. On average, those customers would, in effect, pay slightly more than 70 cents per month to compensate for customers who are not paying the fee.

Bundled Transactions

If Kentucky were to adopt a percentage prepaid 911 POS fee, it would be important to include the model bill's provisions related to bundling of service with the original device purchase. There are many bundles in the market that include large numbers of minutes, so the fee on bundles could be an important source of revenue.

Covering the Cost of Collection

Sellers' costs of collection may be highly variable.

Sellers experience a cost for collecting sales taxes. Few studies have looked at the actual cost sellers experience collecting a POS tax or fee. PriceWaterhouseCoopers published a study in 2006 that found compliance costs varied greatly by size of seller and the number of states in which the seller had nexus. The study's literature review pointed to a small number of other studies with similar results. Smaller sellers operating in a single state averaged 13.5 percent of the taxes collected, while large sellers operating in a single state had a cost of 3.65 percent. Large sellers that operated in multiple states had significantly lower costs—1.3 to 1.9 percent. The overall average compliance cost was just over 3 percent, which is very close to the amount suggested in the NCSL model bill (3-4; 19).

It seems likely that the model bill's 3 percent reimbursement would not cover the collection cost of small sellers, but an unlimited 3 percent reimbursement might be profitable to large multistate sellers.

The compliance studies showed that smaller sellers experienced a much higher cost per dollar collected and, therefore, the compensation would not cover their costs, even at 3 percent. At the other extreme, the NCSL model does not cap sellers' compensation. It seems likely from the available studies that large multistate sellers would earn a significant profit from the unlimited 3 percent compensation.

The Department of Revenue also would incur costs, but it is not clear whether the model bill's 2 percent is appropriate.

The NCSL model also suggests that the state's Department of Revenue keep 2 percent of the amount collected to offset its costs. Some states have included a one-time payment to offset the revenue agency's startup cost. States have varied in the amount given to the revenue agency. Texas, for example, allocated no

revenue offset, while Louisiana granted its revenue department $800,000 for startup costs and 2 percent thereafter.

Program Review staff asked the Kentucky Department of Revenue for estimates of startup and ongoing costs for a POS fee, but the department did not provide specific amounts. A department official commented that estimating the costs of collection and enforcement would require additional review.

The current cost of collecting wireless fees is about 2 percent, and the model POS bill's cost is 5 percent.

Under the existing wireless 911 fee structure, providers keep 1.5 percent to offset the cost of collection. CMRS Board members and staff monitor the providers, handle the remittances, and perform related administrative duties. Board staff estimated the board's cost of administering the fee as 0.5 percent. The combined cost of collecting and administering the current fee is 2 percent of the amount collected. Under the NCSL model bill, the cost would be 5 percent, or more than twice as much.

Monitoring Receipts

Existing point of sale laws often prevent disclosure of collected amounts. The state 911 agency has a strong interest in compliance and should have access to this information.

Officials in Louisiana, Maine, and Texas told Program Review staff that their revenue agencies were prevented by law from giving their 911 agencies detailed information about the amounts that each seller was remitting under the POS fee. The Maine official advised that the state 911 agency should have access to that information in order to assess compliance by prepaid providers and other sellers. The 911 agency has a stronger interest in such enforcement and may have information and methods not readily available to the revenue agency.

Defining Prepaid Service

The definition of prepaid service is subject to interpretation. It would be important to ensure that the definition applies to the correct service and not to other types of service.

If a POS fee is adopted, it will be important to define prepaid service so that the fee applies to all the desired service offerings and to no others. SSUTA and the NCSL model POS bill both define "prepaid wireless telecommunications service" as one

> which… must be paid for in advance… [and] is sold in predetermined units or dollars of which the number declines with use in a known amount (Streamlined. Sec. 315.M; National. Executive. "Model" Sec. 3).

One issue with this definition is that it is not clear how it applies to unlimited prepaid plans that last for a predetermined time, typically a month. It is possible that "units" could be interpreted to refer to calendar time rather than minutes, but it might be better to make this explicit.

Also, conventional contract postpaid service arguably falls within these definitions. Contract service typically is paid a month in advance with packages at a predetermined price that have a predetermined number of minutes included per month, and the number of remaining minutes declines with use in a known amount. The primary differences are that the postpaid provider has an ongoing contractual relationship with the subscriber and the contract permits the provider to charge the subscriber for excess usage on the next month's bill.

Finally, it is possible that some providers will claim that their service plans do not fit either the prepaid or postpaid categories. A Texas Comptroller official indicated that such claims were made during the rule-making process for the POS fee. Rather than defining prepaid service in statute, it might be preferable to grant the CMRS Board or another agency the responsibility to define the types of service that a POS fee would cover.

Summary of Point of Sale Fee for Prepaid Wireless

Program Review staff suggest points to take into account if a 911 POS fee is considered.

Under the POS fee proposal, prepaid customers pay different amounts from each other and from postpaid subscribers. In addition, there are opportunities for potentially large losses of revenue. If a POS fee were to be considered, Program Review staff analysis suggests that it would have somewhat less variability in its burden on customers and would be more likely to meet revenue targets if it

- is based on a percentage rather than a flat fee;
- is set initially to a rate likely to generate an average of 70 cents per prepaid device;
- requires prepaid providers to submit Kentucky device counts to the CMRS Board at least quarterly;
- empowers and requires the CMRS Board by regulation to adjust the POS fee as needed to ensure that it produces the same revenue per device as the postpaid fee;
- compensates sellers for their reasonable costs of collecting and remitting the fee;
- compensates the Department of Revenue for initial startup costs if the department can demonstrate the likely start-up costs;
- compensates the Department of Revenue for ongoing costs that it can demonstrate;

- requires the Department of Revenue to disclose detailed remittance information by seller to the CMRS Board upon request; and
- empowers and requires the CMRS Board by regulation to define prepaid wireless service so that all existing and future offerings will be covered and conventional contract wireless and similar services will be excluded.

Lifeline Service and 911 Fees

Lifeline is a subsidized phone service for low-income individuals.

The FCC subsidizes landline and cell phone service for low-income individuals through a program called "Lifeline." The subsidy comes from the federal Universal Service Fund (USF) that the FCC collects from providers to support universal access to phone service.

> Lifeline provides discounts on one basic monthly telephone service ([landline]… or wireless) for qualified subscribers. These discounts can be up to $10.00 per month, depending on your state. Federal rules prohibit qualifying low-income consumers from receiving more than ONE Lifeline service at the same time. That is, qualifying low-income consumers may receive a Lifeline discount on either a home telephone or wireless telephone service, but may not receive a Lifeline discount on both services at the same time (US. Federal. "Lifeline").

Landline and postpaid wireless providers should collect the 911 fee from Lifeline customers.

Landline phone service subsidized by Lifeline should pay the local 911 landline fees where they are levied. Program Review staff did not verify this, however, and it might be worthwhile for local governments to check with their landline providers. The CMRS Board should include this question in its data collection from landline providers.

Lifeline cell phone service usually is provided on a conventional billed or postpaid contract. Program Review staff verified with some, but not all, postpaid providers that they do collect the wireless 911 fee on the monthly bill. The CMRS Board should verify that all postpaid Lifeline cell service providers collect and remit the fee.

Some Lifeline service is prepaid. TracFone's SafeLink and Virgin Mobile's Assurance are free services. Prepaid Lifeline service, especially a free service, presents challenges for collecting fees with the current methods and under a POS fee.

Some Lifeline cell phone service is provided on a prepaid basis. Program Review staff are aware of only two such providers, TracFone and Virgin Mobile, but there may be others. TracFone offers its service under the SafeLink brand, and Virgin Mobile offers its service under the Assurance brand. SafeLink and

Assurance are offered as free wireless services with limited minutes each month. Presumably, the providers receive $10 from the USF for each device each month. The customer has the option to purchase additional service. Program Review staff sent TracFone and Virgin Mobile requests for information on remittance of 911 fees on their Lifeline service but did not get a response in time for this report.

Several potential difficulties are apparent with prepaid Lifeline service under the current wireless 911 fee statute or under a point of sale fee.

- If a provider chose the current decrement method, the value of the minutes to the customer is so low that the minutes deducted to reach 70 cents might be a significant portion of the customer's monthly allotment. In the case of a free service, the base minutes would have no monetary value at all, so this method would not work.
- If a provider chose the current ARPU method:
  - If the Lifeline USF revenues were included in the provider's total revenues, the method would operate in the manner described earlier.
  - If the provider did not include the USF revenues in its total revenues, the ARPU method would generate even lower 911 revenues per device. For a free service, only additional purchased service would add marginally to 911 revenues.
- If Kentucky were using a modified ARPU method based on each provider's actual ARPU, it appears that Lifeline customers would support 911 at 70 cents per subscriber.[6]
- If a state had a POS fee for prepaid service:
  - For a flat POS fee, the customer should have to pay the fee at least once per month unless the service itself were free.
    - For a free service, it is not clear whether each month's increment of minutes would be considered a taxable transaction. A fee would be collectible on any additional minutes purchased.
  - For a percentage POS fee, the amount collected would be based on the subsidized price, which might be very low. For a free service, the only fee collected would be on additional minutes purchased.
- If Kentucky required providers to remit 70 cents per device, there would be no issue with Lifeline service.

[6]The modified ARPU method might not work if the Lifeline service were free, the provider excluded the USF contribution from its revenues, and no customers purchased additional service.

Lifeline service demonstrates the difficulty of designing a funding method that will work as markets and technology change. It needs to be considered in any plan to collect 911 revenues from phone service providers, devices, or customers. At this time, the subject needs more study and Program Review staff cannot make a recommendation.

North Carolina Model

North Carolina's innovative approach to raising revenues and paying for 911 services has generated interest. Full implementation began in July 2011.

North Carolina has generated a great deal of interest because of its innovative approach to raising revenues and paying for 911 services. Unfortunately, full implementation began in July 2011, and there has not been enough time to determine how well it will work in the long term.

The first steps involved determining the total costs that were covered by existing local and state 911 fees. East Carolina University compiled information on the allowable 911 expenditures at each PSAP over 4 fiscal years and, in some cases, 5 fiscal years. Allowable costs covered the services and equipment needed to get a 911 emergency information request from the caller to the radio equipment at the PSAP for dispatching the request to responders.

The NC model does not include personnel or facilities costs.

Allowable costs did not include personnel or facilities costs such as salaries, benefits, utilities, and floor space. These costs were covered by local governments out of their own funds.

According to the North Carolina 911 Executive Director, allowable costs were found to be about $42 million per year. Revenues for 911 were determined to be about $69 million.

The NC General Assembly expanded the state 911 board's authority to include all 911 communication methods and to collect and distribute all 911 fees. Fees were made uniform and capped at 70 cents.

In 2007, the North Carolina General Assembly amended the 911 statutes to expand the state 911 Board's authority to include all 911 communication methods. Effective January 2008, the new statute made the board responsible for collecting and distributing both local landline and state wireless 911 fees. The statute also established a uniform 911 fee capped at 70 cents and gave the board the authority to adjust the fee. The board was made responsible to propose a new fund distribution method based on the costs determined in the cost study.

In exchange, PSAPs were guaranteed the same amount of revenue they had been receiving until the new distribution system was implemented. Some PSAPs had unspent fund balances of several

million dollars. The new law permitted a local government a onetime option to use half of the current unspent balance for any public safety purpose and placed a cap on future balances.

Under the new system, PSAPs receive an amount equal to their average costs over the past 5 years. All but one PSAP received less funding than before.

The new fund distribution method was adopted by the North Carolina General Assembly in 2010, effective July 1, 2011. It provides each PSAP with revenues equal to a rolling average of the past 5 years' actual expenditures. Total outlays under the new method were $46.4 million, compared with almost $63.3 million the previous fiscal year.

The 911 director reported that only one PSAP received more funding under the formula than it had received in the past. He stated that 24 of 129 PSAPs appealed their new funding allocations and fewer than 10 received additional funding.

The North Carolina model also includes grant funds that the 911 Board may use to assist PSAPs with unanticipated expenses or equipment upgrades. The model also allows PSAPs to carry over up to 20 percent of each year's 911 fund.

The NC 911 fee was reduced to 60 cents.

By 2010, the 911 fee was reduced to 60 cents and might be reduced further if conditions permit. One factor is the passage of a POS fee on prepaid wireless service, effective July 1, 2013. North Carolina was not collecting 911 fees on prepaid service, so this will represent new revenue that might permit the overall rate to be lowered.

Future funding amounts will depend on the spending patterns of PSAPs as the moving average picks up new years and drops old ones. Over time, it will be determined how well this formula works to provide adequate funding and to create a level playing field among PSAPs that used to vary greatly in spending.

The initial impression of Program Review staff is that in an economy that has any amount of inflation, the moving average will result in lower real revenues over time. As costs for any PSAP exceed revenues, that PSAP will need to appeal its allocation. Any increased allocation will increase the moving average, but not enough to sustain the increase, probably leading to repeated appeals unless costs level off.

If this impression is correct, then PSAPs that have spent at higher levels will eventually be forced to reduce spending to a more frugal level, while PSAPs that have spent at lower levels will need to appeal for more funds on a regular basis.

The NC model has not been in place long enough to determine its success. Fee reductions appear to be from eliminating surplus fees and imposing cost controls. Comparison with Kentucky is problematic.

At this time, the North Carolina model has not been in place long enough to determine its success. The fee reductions so far appear to be primarily from eliminating surplus fees and imposing cost controls rather than from an inherent advantage of the funding approach. Comparison of the North Carolina fee with Kentucky's is problematic because Kentucky permits personnel and facilities to be paid from its 911 fees, and only a few Kentucky counties appear to have surplus fees. Program Review staff do not have enough information yet to make a recommendation.

Summary of 911 Funding Policy Choices

The current mix of jurisdictions and fees in Kentucky is complex, is not clear about permitted fund uses, and does not fully fund 911 services. It may require further change. Many choices related to funding might be considered.

The current mix of jurisdictions and fees is complex, is unclear about permitted fund uses, and does not fully fund 911 services. It may require further change as new communications technologies and business models arise. Prepaid wireless fees have proven contentious, and a point of sale 911 fee for prepaid service has been proposed.

Some of the choices that might be considered are

- whether 911 services should be funded wholly through local and state general funds or whether there should be dedicated 911 fees and
- if there are to be dedicated 911 fees,
  - whether to specify the scope of use for 911 funds,
  - whether 911 funds should fully fund all costs within their scope,
  - what the fees should be levied on and who should pay them,
  - whether different fees and rates should be assessed by different local governments and the state,
  - whether fees should be distributed uniformly or should support smaller communities at a greater level,
  - whether different fee methods should be applied to different communication methods and business models, and
  - whether to adopt a point of sale 911 fee for prepaid wireless service.

It would be helpful to have a thorough understanding of 911 funding and costs before determining how to address these issues. Chapter 5 describes an approach to developing a statewide 911 financial statement in order to gain that understanding.

Chapter 5

Statewide 911 Financial Statement

There is no true 911 "system." Local governments generally control 911, resulting in a patchwork of governing arrangements, fees, funding mechanisms, and accounting methods.

There is no true 911 "system" in Kentucky. While the wireless surcharge is administered and distributed by the CMRS Board, and PSAPs capable of providing enhanced 911 service for wireless communications are certified by the board, PSAPs generally remain under the authority of local governments. As a result, there is a patchwork of governing arrangements, fees, funding mechanisms, and accounting methods that makes it difficult to determine the current costs and funding for 911.

It would be helpful to have information on the actual costs of 911 statewide and how those costs are paid. SB 119 gave the CMRS Board responsibility to gather this kind of information.

It would be helpful for the General Assembly to have information on the actual costs of 911 across the state and how those costs are currently paid. Recognizing this, 2011 Regular Session Senate Bill 119 gave the CMRS Board the responsibility to collect information on 911 costs and revenues going back to FY 2008 and continuing in future years. This effort is referred to in this report as developing a 911 financial statement for Kentucky.

For the first time, SB 119, codified as KRS 65.7630, gave an agency the authority to gather information from all sources related to 911, including landline and wireless providers, local governments, and individuals. The bill contained a short list of information that must be collected at a minimum but required the board to determine any additional information that it needs.

The sections below describe the requirements of KRS 65.7630 and how a 911 financial statement might be used. Throughout this report are other references to ways that a statewide 911 financial statement would be helpful.

CMRS Board Annual PSAP Data Review

Prior to SB 119, the CMRS Board collected information from PSAPs annually. The questionnaire used was incomplete and included some flawed questions. The information obtained was of limited usefulness.

Prior to the passage of SB 119, the CMRS Board required certified PSAPs to complete an annual data review sheet to maintain certification. The 2011 version was collected via an online questionnaire. While more comprehensive than previous years, the questionnaire was incomplete, lacked appropriate instructions to ensure lay persons responding would be able to answer completely and accurately, and included some flawed questions.

The questionnaire requested the annual operating cost per PSAP but failed to define what aspects of a 911 center should be included in those costs. In addition, the online questionnaire did not handle decimal points, so some dollar amounts were off by a factor of 100.

The budget questions failed to ask explicitly for general funds used for PSAP operations. Instead, the questionnaire asked for other funding sources and did not provide a field to enter an amount; rather, the description and amount, if given, were part of a text field. Of the 68 PSAPs that indicated the use of general funds, only 5 provided usable numbers.

Another issue was the KSP response. Because the questionnaire was sent to PSAPs, the state police could not answer some questions. For example, collecting information about local government revenues should not be KSP's responsibility. Similarly, if KSP did not answer landline 911 calls for a county, it should not have to collect information on those providers.

There were some additional problems. KSP reported the same operating budget for all 16 posts, even though they are of various sizes and some answer calls for counties and others do not, and the budgets did not show how much was from state general funds. The state police also reported the same wireless revenue for 15 of the posts, even though the CMRS Board supplied the revenue information for each post. KSP failed to report how CMRS funds were used, stating that all CMRS funds were deposited with "court" when some funds go directly to KSP and the rest go to regional boards overseeing KSP contracts. At the writing of this report, CMRS Board staff reported that KSP had not submitted complete responses.

A 911 financial statement also should contain a balance sheet, showing assets, including cash on hand, and liabilities that are tied to the provision of 911 services. The CMRS data review sheet did not ask about these items.

As a result, the 2011 data review sheet probably cannot be used to accurately determine the revenues and costs of PSAPs. There may be useful information about individual PSAPs, and there are good ideas for future questionnaires.

Scope of SB 119

To comply with the requirements of SB 119 and to determine the cost of operating a 911 center and assess current funding methods, the CMRS Board must gather extensive information from PSAPs, phone service providers, and local governments.

To comply with the requirements of SB 119, to determine the costs of operating a 911 center, and to assess the adequacy of current funding methods, the CMRS Board needs to gather an extensive list of information from PSAPs, phone service providers, and local governments covering fiscal years 2008 to 2011.

The board should extend its information gathering beyond certified PSAPs to include local governments or regional boards that levy or handle 911 fees, operate noncertified PSAPs, or contract with certified PSAPs for 911 services. The board should obtain a comprehensive list of data on funding that includes all revenue sources at all levels of governance and detailed PSAP expenses.

The management and funding structures are so varied that CMRS Board staff should follow the lead of other states and visit every jurisdiction to collect information.

Based on Program Review staff's interviews with numerous PSAPs, local governments, and phone service providers, it does not seem possible to gather the required information using a standardized questionnaire. There are so many different relationships between local governments and PSAPs and so many different ways that PSAPs account for their funds that a more customized and labor-intensive approach is needed.

Like the cost discovery process in North Carolina and the cost review process in Washington, it probably will be necessary for CMRS Board staff to visit every jurisdiction to interview the local government and PSAP officials who handle 911 funds and manage PSAPs, to examine local accounts, and to understand how 911 works in each location. In future years, the board should consider adding SB 911 data validation to its local government audit process or continuing to send its staff into the field as needed.

Local and Regional Governance Questions

Because there are so many variations in local PSAP governance, it is important to know the exact relationships in each jurisdiction.

Because there are many variations in local PSAP governance, it is important to know the exact relationships among the local governments and agencies operating PSAPs. Although a few counties and cities operate PSAPs alone, most counties have a single PSAP that serves the county and one or more cities. Often, the primary city operates the PSAP for the county as a whole. Consolidated PSAPs usually have an interlocal governing board. There also are groups of counties that have formed regional boards to contract with the state police for 911 services. These arrangements might be the most difficult to characterize.

The city/county model is the most common. Visits to PSAPs and interviews by Program Review staff suggested that some, perhaps many, such arrangements either never had or were unable to find written interlocal agreements. Under SB 119, it would be useful to collect information on the relationships between all the parties involved in managing and funding PSAPs, including their written interlocal agreements and ordinances or policies covering such matters as 911 fees and E911 addressing procedures. With that information, the board and the General Assembly could identify opportunities for local governments to improve ordinances and comply with the statute on interlocal cooperation agreements.

Local Funding and Spending Questions

Because of the variety of PSAP managing authorities, questions need to be tailored to different types of management and funding.

Perhaps the most important consideration is that PSAPs do not control their funds or make spending decisions. Despite being named as the recipients of funding and the targets of auditing in Kentucky's wireless 911 statute, each PSAP belongs to some larger local governmental entity. It is the managing authority that actually deposits the funds, controls the accounts, and determines spending.

Managing authorities range from single city or county governments to interlocal regional boards to the Kentucky State Police. There are many variations and hybrid arrangements. It would be nearly impossible to track funds from local 911 fees, wireless fees, general funds, and other sources without having a customized approach to each of the several kinds of management structures.

For example, the questions for Kentucky State Police PSAPs probably should not ask how local governments raise 911 funds. Similarly, KSP questions probably should ask about state general funds, but questions for local PSAPs probably should not.

Some PSAP budgets cover expenses that others receive free or at a discount. The differences can be significant.

Even two apparently similar management structures probably will handle their costs and revenues differently. For example, one PSAP might pay for a person to maintain the E911 addresses and mapping systems, while another PSAP might receive that service from another department or agency.

An earlier CMRS Board study found the same issues. In 2002, to comply with a mandate from the General Assembly, the board commissioned a study of the equity of the wireless fund distribution formula. The consultant visited 62 of the 78 certified PSAPs. His report stated that few PSAPs isolated their costs in

local budgets because PSAPs were often housed in facilities used by other local agencies and frequently shared personnel with those agencies (Commonwealth. Commercial. *Equities* 9).

This situation remains today. Costs that Program Review staff identified as paid by some PSAPs and not by others include

- 911 call routing services (selective router and location database);
- 911 phone trunk lines;
- telephone customer premises equipment;
- facilities (floor space);
- utilities (electricity, water, phones other than 911 trunks);
- employee benefits; and
- payroll processing.

Sometimes PSAP staff perform duties that are unrelated to 911.

Another factor that should be considered is the activities that PSAP staff might perform that are unrelated to 911. Especially in smaller communities, PSAP staff might spend significant time assisting with the work of other agencies. For example, they might assist jailers with making rounds or help law enforcement agencies with paperwork. It would be helpful to identify and, if possible, quantify the value of this staff time and account for it separately in the statewide financial statement. These activities are important when considering the costs and savings of PSAP consolidation.

In addition, some differences occur because of different interpretations of the permitted uses of 911 funds. One expense frequently mentioned was the cost of radio repeaters outside the PSAP. Some local governments pay that expense out of 911 funds; others do not.

Any statewide funding formula would need to take these differences into account. When one PSAP spends funds on a 911 cost and another does not, it might be considered unfair for 911 funds to cover the cost for one and not for the other. In the case of a PSAP whose staff perform non-911 tasks and another whose staff do not, it might be considered an improper use of 911 funds if the General Assembly decided to fully fund PSAPs with 911 revenues.

Some local governments and regional boards, primarily those contracting with KSP, have significant balances in their 911 fund accounts. It will be important to obtain information on the balances in those accounts and any reserve accounts that may have been set up.

Program Review staff reviewed some local PSAP budget documents and found that often they did not include enough information for a thorough cost analysis. It seems likely that in most jurisdictions, CMRS Board staff would have to examine reports from local government accounting systems in order to find the details needed.

State General Fund and Spending Questions

KSP uses state general funds to support its PSAPs. The Department of Criminal Justice Training might also use general funds for 911 staff training.

State general funds that go directly into operating state police PSAPs need to be accounted for. As recommended in Chapter 2, KSP should create a 911 cost center and attribute all PSAP costs to the cost center.

CMRS Board staff pointed out that the Department of Criminal Justice Training provides classes for telecommunicator certification. Some state general funds might be helping cover the cost of this required training.

Conclusions About Gathering Cost and Revenue Data

North Carolina commissioned a study of costs and funding. The Kentucky task is greater, in part because the permitted uses of 911 funds are unclear.

The North Carolina 911 board commissioned a study to identify and collect data on PSAP costs. East Carolina University developed a list of expenses based on the state's permissible uses of 911 funds and visited local jurisdictions to collect the information. The board later used the analysis to design an adjusted uniform 911 fee that would cover all permissible expenses.

Kentucky has a larger task. It is important that the CMRS Board identify everything that reasonably could be paid from 911 funds under the current statutes or under reasonable extensions of those statutes. Then the board should determine for each PSAP the total cost of each item, including the full value of items partially or entirely provided by other agencies.

Revenue receipts, fund balances, assets, and liabilities are needed from all levels of government and management that handle 911 funds or manage 911 activities.

That information will tell the General Assembly both the actual expenses and in-kind or donated value for the categories of items illustrated in Figure 4.A. With revenues and balances, it will be possible to make informed decisions such as

- which expenses and what portion of them dedicated 911 funds should cover;
- which expenses and what portion of them state or local general funds should cover; and
- how much variation there should be among the dedicated 911 revenue sources.

PSAP Characteristics

Information about PSAP operations and capabilities would be helpful in an analysis of cost variations, efficiencies, and best practices.

On its expanded PSAP data review sheet in 2011, the CMRS Board included questions about the telecommunications companies serving each PSAP, the addressing and mapping operation, call-taking hardware and software, staffing, secondary PSAPs, call counting, and other operational issues. Although some of the questions were poorly designed, this was a commendable effort.

In order to learn about the operation and capabilities of PSAPs themselves, a questionnaire like the data review sheet might work if modifications were made. Modifications should include clearer questions with more meaningful options, thorough explanations of what is needed, and detailed instructions. CMRS should review responses and contact PSAPs to confirm or correct questionable data as needed.

With detailed information about local 911 budgets and PSAP operations from FY 2008 forward, the CMRS Board will be able to investigate the causes of cost variations and to identify efficiencies and best practices among Kentucky's PSAPs. In addition, it will be relatively easy to determine whether or not consolidation creates real cost savings in the near or long term.

Provider Questions

SB 119 authorized the CMRS Board to collect any needed information from landline and wireless providers. This section describes some of the issues and types of information that would help address them.

Information about landline providers would be helpful to ensure they are remitting 911 fees properly and charging a reasonable collection cost.

Landline Providers. In most Kentucky counties and some cities, landline providers collect and remit a landline 911 fee. Generally, local government officials are aware of the incumbent phone companies, those that own the lines and equipment. However, it appears that local officials are not aware of all the competitive phone companies that lease and resell phone service in their communities. Many competitive phone companies have very few customers, but some might be a significant source of revenue.

In addition to asking local officials which phone companies are remitting landline fees, the CMRS Board could ask the PSC for a list of competitive providers. The board then could ask the providers to list the local governments in whose areas they have customers and the amounts of landline fees they collect. Cross-referencing this information would identify any fee collection problems.

Another issue is the amount of collection cost being kept by landline providers. Part of the SB 119 data collection should be determining the amounts providers keep to cover collection costs. It would be useful to compare that information across jurisdictions and to cross-check the amounts against the amounts authorized by local ordinances.

It would be helpful to know what it costs landline providers to deliver 911 calls and compare that with the prices they set.

Landline providers also route and deliver 911 calls to PSAPs through their networks and trunk lines. They cover their routing and delivery costs either by charging PSAP authorities for equipment and services or by charging these costs back to their customers. This is of special concern when the provider charges the costs back to customers and may never have negotiated prices with PSAP authorities. It would be helpful to know the prices charged to PSAP authorities and the total amount collected from customers in each jurisdiction.

It is unknown whether landline providers lose money, break even, or profit from 911 services. Although the information might be proprietary, it would help the General Assembly determine whether to regulate the prices charged for those services.

Information about special phone plans would be helpful in case any of them are not supporting 911.

The CMRS Board should confirm with landline phone companies that they are collecting 911 fees on subsidized Lifeline plans and any other special phone plans. Special phone plans might include prepaid landline service, which is available in a few communities nationally. If there were special landline phone plans not currently supporting 911, local governments and possibly the General Assembly would need to determine how to collect 911 fees from them.

Until 2011, information was not available on the breakdown of postpaid and prepaid subscribers and 911 fees.

Wireless Providers. Wireless providers by statute remit a 911 fee to the CMRS Board. Until 2011, the board had not collected sufficient information to know the breakdown of conventional postpaid versus prepaid 911 fees and subscribers. The board also did not know the current method of collection for prepaid fees from most providers. As part of its SB 119 data collection effort, the board has asked wireless providers for detailed information on these topics. The board also should ask these providers about 911 fees on their wireless Lifeline offerings.

Wireless providers' fee collection costs and costs of delivering 911 calls should be examined.

Like landline providers, wireless providers keep a portion of 911 revenues they collect to offset the cost of collection. It is not straightforward to determine whether the collection cost is appropriate because of the complexities of remitting fees on prepaid service, but the board should consider ways to assess the providers' actual collection cost.

Wireless providers incur costs to comply with the FCC's 911 caller location requirements and to deliver the calls to the landline phone network. Wireless 911 revenues include a fund to reimburse these costs. Although some providers have stopped submitting requests for cost recovery, others continue to do so, and the fund has been insufficient to cover all requests. It would be helpful to have a full accounting of the reasons that providers do or do not seek recovery of the various kinds of costs.

Even though SB 119 did not mention VoIP providers, the CMRS Board should attempt to identify and collect information from them.

VoIP Providers. SB 119 did not specifically mention VoIP providers. However, the CMRS Board should attempt to identify all fixed and nomadic interconnected VoIP providers that have customers in Kentucky. The board should collect the same information from these providers as from landline providers regarding fee collection and collection costs; location and number of customers; and treatment of any prepaid, Lifeline, or other special service plans.

Adequate information about provider costs and prices will help the state and local governments make informed decisions about revenues and payments to providers.

Provider Information Uses. With adequate information about provider costs and prices, it will be possible for the General Assembly to make informed decisions on the future of landline and wireless cost recovery and methods of levying 911 fees. The CMRS Board will be better able to enforce the collection of existing wireless 911 fees and to make decisions about wireless cost recovery payments. Local governments will be better able to monitor collection of local 911 fees, to set limits on fee collection costs, and to negotiate service prices with landline phone companies.

Conclusion and Recommendations

SB 119 created an opportunity for Kentucky to base funding and governance decisions on solid information in the form of a comprehensive report from the CMRS Board on the state's 911 revenues and costs.

A thorough job of data collection might require additional CMRS Board staff.

If done thoroughly, the task might require the CMRS Board to hire more staff, at least initially, and to retain some permanent staff for the future. The statute currently permits additional administrative funds for the review of the workload formula, and it could be broadened to cover funds for the statewide 911 financial statement.

Recommendation 5.1

Recommendation 5.1

The CMRS Board staff should visit all PSAPs and related local governments and boards initially to establish who has the information required by SB 119 and to validate the information. Afterward, CMRS Board staff should visit all PSAPs and related entities periodically to verify SB 119 data or should include data validation in its audit contract. The General Assembly may wish to consider permitting the board to allocate funds to these tasks beyond the current administrative fund limit.

Recommendation 5.2

Recommendation 5.2

The CMRS Board should compile a complete statewide 911 financial statement that shows all revenues contributing to and all costs of providing 911 services, covering all primary and secondary, certified and noncertified PSAPs, including

- **all dedicated 911 funds starting at their source and indicating all entities that handle them;**
- **all other funds that flow to PSAPs starting at their source and indicating all entities that handle the funds;**
- **itemized costs of operating each PSAP;**
- **the source and full value of facilities, services, or other items received by PSAPs at discounted or no cost for which a PSAP otherwise would have to pay;**
- **costs of operating any advisory and management boards and any other activities necessary to manage and operate a PSAP, including any costs incurred between a funding source and the PSAP;**
- **the value of non-911 tasks performed by PSAP staff; and**
- **any cash balances, other assets, and liabilities related to providing 911 services.**

Recommendation 5.3

Recommendation 5.3

As part of the statewide 911 financial statement, the CMRS Board should

- **examine 911 fee collections on all phone service plans for all telecommunications providers, including the amounts that providers keep to cover 911 fee collection costs;**
- **determine the amounts paid to all telecommunications providers for delivering 911 calls to PSAPs, whether they are reasonably caused by 911, and whether they represent the actual cost to deliver the calls; and**
- **assess the need for continued wireless provider cost recovery.**

Chapter 6

Management of Costs and Service

This chapter discusses ways to improve management of 911 costs and service. Consolidation of PSAPs is often considered a way to decrease costs, but it primarily seems to improve service. Some innovations based on new technologies appear to have greater potential to save money with the same or better service. Provider costs deserve a closer look because they comprise much of a PSAP's expenses other than salaries.

Consolidation of PSAPs

Despite expectations, consolidation does not appear to generate large savings, but consolidation does seem capable of providing a higher level of service.

Despite expectations, consolidation of PSAPs does not appear to generate large savings, but consolidation does seem capable of providing a higher level of service. The advantages of consolidation are improved service, increased flexibility, and perhaps moderate cost savings over the long term (Communications. Working Group 1A 29).

According to an FCC advisory working group report:

> In most cases, having an emphasis on improving service with cost saving as a result was a much more realistic goal than placing the emphasis on cost savings and hoping for service improvements as a result. The benefit of technology consolidation is the shared infrastructure that helps speed up communication, information access and dissemination yielding lower [faster] response time, improved quality of service and enabling collaboration between different agencies during an incident (Communications. Working Group 1A 29).

Consolidating small PSAPs does not appear to generate large savings. Small PSAP staff often provide valuable services outside the PSAP that need to be accounted for.

Although several studies appear to show that the annual cost to operate a small PSAP is around $160,000, simply consolidating small PSAPs does not appear to generate large savings. Even though small PSAPs often have light call loads, the staffs of these call centers often perform other duties unrelated to 911 (Bono). The value of these other duties can be significant and should be accounted for. Most cities in an Ohio feasibility study reported that dispatchers provided functions "such as jail matron, clerk of courts, records clerk" and others. The study found at least $1.4 million of annual pay going to nondispatch duties (Cleveland State University 44).

The Ohio figure may have been low because it omitted several cities. In addition, the cities paid their staffs differing amounts. Program Review staff calculations showed that, depending on the salary structure at a consolidated PSAP, the total personnel costs might actually increase.

Some PSAPs perform nonemergency dispatch services and receive payment for them.

Some small PSAPs also provide nonemergency dispatch services. PSAPs may field calls for animal control agencies, water and sewer agencies, and sometimes forestry or parks security forces. Sometimes these agencies pay the PSAP's governing authority for those services. These services and funding sources need to be included in planning for consolidation.

There are concerns that a consolidated PSAP would not have as close a relationship with the community.

A focus group of PSAP directors told Program Review staff that dispatchers at smaller PSAPs also have a closer relationship with the responding agencies and with residents in the community. They know intimate details of the geography and landmarks. Participants expressed doubt that a consolidated PSAP could provide that level of service but also pointed out that responders and residents in more populous counties probably were already used to the less intimate relationship and would not notice much difference.

A consolidated PSAP might have to dispatch a large number of responding agencies, which can become difficult if responders use different procedures.

A related issue is the number of responding agencies that a PSAP can reasonably handle. Each sheriff or police department, fire department, or ambulance service probably has distinct preferred procedures for dispatching and responding to calls. Call takers and dispatchers need to request and present the emergency information using the procedures of the specific responder. A KSP dispatcher explained that a post has a description of responder protocols in a notebook or on the dispatch computer. The dispatcher explained that when the number of responding agencies is large, it can become difficult to learn and easily follow all the protocols. Even so, the Louisville MetroSafe PSAP and its satellites appear to dispatch effectively for 59 agencies.

Consolidation offers more opportunities for cooperation among responders.

When several responding agencies are dispatched through the same PSAP, there are more opportunities for cooperation than when they are dispatched from different PSAPs. Coordination of purchasing can speed the adoption of shared computer software, compatible radio equipment, common response protocols, and standardized geographic data. As a result, consolidated PSAPs can serve more agencies with a higher level of service and cooperating agencies can back each other up more effectively.

Success of consolidation depends on ensuring that all jurisdictions and responding agencies are permitted to help make decisions.

Published guidelines invariably insist that the most important factor for success of consolidation is ensuring that all jurisdictions and all responding agencies are permitted to help make the decisions about consolidation. This includes determining the type of PSAP, its location, contributions to its funding, the management of the PSAP, how the dispatchers will treat calls for each responding agency, what will happen to existing PSAP staff, what salaries will be paid, and many other decisions that need to have the acquiescence, if not consent, of all parties.

Local and Regional Consolidation

The Campbell County and Lincoln-Garrard PSAPs have been successful consolidation efforts that support the concepts described above.

Program Review staff reviewed information from two consolidated PSAPs in Kentucky. The results supported the concepts described above.

Campbell County, Newport, and Fort Thomas consolidated operations in 2001. The original consultant's report stated that the existing PSAPs were insufficiently staffed to handle high-volume call events and the expected increase in cell phone calls, yet the PSAPs did not have enough volume on average to justify their operation. The Campbell County Consolidated 911 director indicated that cost savings were moderate and did not appear at once. He reported improved equipment and service as valuable benefits.

Lincoln and Garrard Counties formed Bluegrass 911, which became operational in May 2008 with the assistance of a $200,000 consolidation grant from the CMRS Board. Although Bluegrass 911 has shown some savings, Program Review staff found that most of the savings resulted from elimination of part-time positions. The remainder was a result of moving personnel out of the county retirement system and benefits into individual retirement arrangements and lower-cost insurance. This reduction of benefit costs was possible because Bluegrass 911 is a local entity that is not under the direct control of either county. Bluegrass 911 also did not account for the value of the free building space that the city of Lancaster is providing.

Both consolidation efforts involved local governments and responders in the planning process. The Campbell County 911 director reported that earlier efforts at consolidation failed in part because they did not adequately include all the parties.

Hybrid Consolidation Models

A consolidated 911 model may involve secondary or satellite PSAPs. Louisville MetroSafe is an example.

Consolidation does not necessarily mean that everyone sits in the same location. Louisville MetroSafe, for example, operates a primary PSAP with six secondary sites. The five city and one university secondary PSAPs are more like satellites of MetroSafe than independent PSAPs.

MetroSafe, like many larger PSAPs, has staff that answer calls and other staff that dispatch the responders. The call takers type the information into a computerized dispatch system as they talk to the callers. A dispatcher receives the information and begins to dispatch responders while the call taker continues to gather information.

The satellite PSAPs in Jefferson County use the same computerized dispatch system as the central MetroSafe location. The systems are linked directly, so MetroSafe and satellite dispatchers know the locations of each other's responder units, such as police cruisers, fire trucks, and ambulances. MetroSafe dispatches local fire and ambulance units itself but the satellite PSAPs dispatch local police. When a MetroSafe call taker receives a call for police that involves one of the satellite cities, the call is transferred to the satellite. Usually the caller has to repeat the description of the incident, but the automatic location information transfers to the satellite dispatcher.

Requiring the caller to repeat the location and description of the incident slows down the response and displeases the caller. Experts in 911 services have pointed out that call takers and dispatchers can use the same dispatching system in separate physical locations. In principle, MetroSafe call takers would not have to transfer calls to the satellite PSAPs but could type the information into the dispatch system for the satellite dispatcher to use.

Kentucky State Police Consolidation

KSP has in effect consolidated service for several counties.

KSP has in effect consolidated service for several counties. Responders in some counties have expressed strong dissatisfaction with KSP's service; others have reported good service.

KSP receives no payments from the counties for which it provides coverage for wireless 911 calls only. The post, however, does receive the volume fund payments from the CMRS Board for those counties.

KSP charges widely varying amounts for its 911 service. In general, counties appear to pay less than the cost to provide the service.

Of the counties for which KSP provides both landline and wireless coverage, all but Robertson County pay for the service. When the Robertson County contract was negotiated, the county assessed no landline surcharge, and the Post 6 commander agreed to cover the 911 calls at no cost. Trimble County, another county that does not have a landline surcharge, pays $15,000 from its general funds to Post 5 for the same services.

The amount KSP charges local governments is determined primarily by the post commander. Counties interested in contracting with KSP for 911 coverage contact the post commander, who negotiates an agreement between KSP and county officials. Once a tentative agreement is reached, the contract is sent to KSP headquarters and is reviewed by KSP's legal office, finance office, human resources, and ultimately the commissioner for approval.

Counties that arrange for 911 service from KSP, whether individually or through a regional board, appear to pay less than the cost for KSP to provide the service. If KSP could establish the actual value of the 911 services that it provides to counties and charge counties a corresponding amount, then it would be possible to determine the true savings available through this kind of consolidation.

KSP currently has no standard method for calculating the rate to charge counties. KSP cannot determine the cost to operate each of its PSAPs.

However, KSP currently has no standard method for calculating the rate to charge counties, and this has resulted in great variability in the amount counties pay KSP for covering their 911 calls. The state police budget is separated by operational divisions, meaning the agency cannot determine the cost of operating each post, nor can the agency determine the cost of operating a PSAP within each post.

The state police strategic planning staff are currently testing a staffing formula to determine the number of telecommunicators needed to sufficiently staff a post communications center. The formula takes into consideration call volume during peak times as well as normal times. Once the formula has been tested and deemed reliable for staffing requirements, KSP may be able to use the formula to determine the number of additional staff needed to answer 911 calls for counties, and therefore how much in salary to charge for providing this service.

Even with a staffing formula, however, KSP is unable to determine the other costs of operating its PSAPs. This presents a problem not only for fairly recovering KSP's costs from counties, but also for

including KSP's 911 costs in the statewide 911 financial statement. As recommended in Chapter 2, the state police should establish a cost center or use some other means to capture the full cost of operating its PSAPs. It should also attempt to identify and report separately the value of non-911 tasks that its PSAP staff perform.

Dissatisfaction with KSP's 911 services was mostly expressed by local law enforcement.

Dissatisfaction reported to Program Review staff about KSP's 911 service was mostly expressed by local law enforcement agencies. Their reports included the following:

- A post did not have enough dispatchers to handle the calls from all the counties as well as large incidents that involved state police troopers.
- Dispatchers did not follow the preferred dispatch protocols for the responding agencies; for example, dispatchers sometimes did not dispatch the closest local law enforcement unit even when the units were assigned to specific sections of the county.
- Dispatchers sometimes dispatched state police troopers rather than local law enforcement for calls perceived as more newsworthy and dispatched local officers instead of troopers for mundane calls like traffic control.
- Local law enforcement officers sometimes did not know about incidents in their own county when troopers were dispatched to handle them.

Some local law enforcement agencies expressed satisfaction, as did the fire departments interviewed.

Some local law enforcement agencies expressed satisfaction with KSP's 911 service, as did the fire departments interviewed. It appears that the quality of service and community relations varies from post to post. More study would be needed to confirm the sources of dissatisfaction and to identify the factors leading to satisfied responders.

Recommendation 6.1

Recommendation 6.1

The Kentucky State Police should conduct a review of its 911 services to counties, including response time measures, compliance with local protocols, and satisfaction of local responder agencies.

Provider Costs

Landline and wireless providers incur costs for delivering 911 calls. Landline providers are reimbursed through payments from local governments or on customer bills. For wireless providers, some states, including Kentucky, offer reimbursement for 911 call delivery costs.

Landline Providers

There appears to be a great deal of uncertainty about the pricing of 911 services by landline providers.

There appears to be a great deal of uncertainty about the pricing of 911 services by landline providers in Kentucky. PSC officials stated that they are conferring with the Office of the Attorney General to interpret the 2006 Kentucky bill that deregulated much of the phone industry.

This uncertainty also seems to extend to the providers themselves. PSC officials stated that even if they were regulated, providers were free to negotiate prices lower than the prices filed with their tariffs at the PSC. However, PSAP directors told Program Review staff that a provider cited the prices in its PSC tariffs and asserted that it could not negotiate different prices, while another provider negotiated despite having a tariff.

In jurisdictions where the landline provider charges 911 costs back to its customers, local governments might want to renegotiate the pricing periodically.

In jurisdictions where the landline provider charges 911 costs back to its customers, local governments might want to question whether the pricing represents the best available for their residents. If there was at one time a negotiated price, it seems reasonable to renegotiate it periodically.

Landline providers also charge some costs to wireless providers. The CMRS Board might consider examining those prices.

Landline providers also charge some costs to wireless providers. Wireless providers have to pay for the lines from their mobile switching centers to the landline providers' selective routers. This cost is partially hidden, but it shows up if a wireless provider chooses to request reimbursement from the CMRS Board. The board might consider determining whether the pricing of those services is the best available.

Wireless Providers

States are no longer required to cover the 911 costs of wireless providers, but Kentucky and several other states still do.

States are no longer required to cover the costs of wireless providers for carrying 911 calls, unlike landline providers. However, Kentucky and several other states continue to fund some cost recovery for wireless providers.

The CMRS Board's cost recovery fund has been unable to meet all the requests for reimbursement.

Wireless providers are required to submit invoices to the CMRS Board for the actual costs associated with delivering 911 calls. Some providers have stopped requesting cost recovery, but even so, since at least FY 2009, the cost recovery fund has been insufficient to pay all the requests from providers. The information that the board gathers for SB 119 should include a breakdown by the types of costs that providers are requesting.

Improvement of location services is probably the most expensive aspect of wireless 911. West Virginia set aside a fund to support expansion in rural areas.

Improvement of location services is probably the most expensive aspect of wireless 911. Providers such as AT&T that use network-based location would have to install more antennas in rural areas, which may include the expense of building more towers. They also have to install location measuring equipment. However, it appears that wireless providers have not built out their infrastructure solely for E911 purposes. For this reason, West Virginia set aside a fund to support the expansion of coverage in rural areas.

Unlike AT&T, Verizon and some other providers use a handset-based location method. For a period of perhaps 2 years, the CMRS Board reimbursed Verizon for the extra cost of rolling out new cell phones with geographic positioning system capability.

If providers use location-enabled offerings to sell their services, perhaps the state should no longer subsidize location services.

Another perspective on location services is that wireless providers increasingly promote location-enabled offerings for smart phone subscribers. In this sense, providers market their services based on, and presumably profit from, the ability to locate a caller. Therefore, there is an argument that the state should no longer subsidize location services.

Provider Cost Summary

One former state 911 director advised that authorities should question provider costs.

One former state 911 director, speaking generally about provider costs, cautioned that it is important not to accept provider cost claims at face value. He reported finding several times upon investigation that the actual cost was lower than the proposed price from a landline provider or the reimbursement requested by a wireless provider. He also suggested that the price a landline provider charges a wireless provider to access the 911 router might be higher than necessary.

After the results of the SB 119 statewide financial statement are available, it should be possible to make a recommendation about provider costs.

Next Generation Efficiencies

Early Innovation

Leading up to the next generation of 911, some PSAPs are implementing pieces of new technology as it becomes available. Program Review staff looked at one example: the Lexington-Fayette Urban County Government's (LFUCG) Central Kentucky 911 Network.

The Lexington-Fayette Urban County Government determined that it could reduce 911 costs by owning the 911 routing hardware and database.

LFUCG determined that it could reduce its 911 costs by owning the selective router and location database. In addition to the savings on the selective router itself, having the equipment in house also saved money on trunk lines in two ways. First, when using a phone company's selective router, a PSAP has to pay for the lines from the phone company's exchange offices to the router and from the router to the PSAP. Sometimes, that can be a significant distance and often is charged by the mile. Second, lines from the router to a PSAP are a more expensive type of line than the lines to the router. By having the router in house, the LFUCG PSAP eliminated the more expensive of the two sets of lines.

Windstream, the Fayette County incumbent phone company, agreed to connect lines from its exchange offices to the router at the LFUCG PSAP. Windstream continued to charge a fee for providing information to keep the location database up to date. The net savings, according to the E911 director, was $27,000 per month.

Wireless phone providers are required under FCC rules to connect to the selective router that serves a PSAP. There is no cost to the PSAP for those connections. Any cost that a wireless provider incurs may be reimbursable through the CMRS Board's cost recovery fund.

The E911 center now shares some of its routing and dispatching capabilities with nine other counties.

The E911 center then determined that it could share the selective router and other aspects of its dispatching capabilities with other counties. Currently, there are nine other counties that use some facet of the LFUCG system.

Other counties that are served by Windstream have been able to connect their local exchanges directly to the LFUCG router. They can then receive their 911 calls via an Internet connection arranged through the Kentucky Postsecondary Education Network (KPEN). Boyd, Garrard, Grayson, Meade, Jessamine, Rowan, Taylor, and Woodford Counties use this approach.

Bath County also has Windstream service for most of its residents. However, rather than receiving the calls via KPEN in Bath County, it uses the Internet to connect to the call taking and dispatching system in the LFUCG PSAP. This is called a hosted solution because the Bath County dispatchers can sit in Owingsville and, via the KPEN network, use the hardware and software physically located in Lexington.

So far, the LFUCG E911 center has not reached an agreement with AT&T, the other major landline provider in the region, to connect its exchanges to the LFUCG selective router. That has made it less cost effective for counties with AT&T landline service to join the network.

Future Innovation

In the future, it appears that NG911 has the potential to reduce the costs of delivering 911 calls and location information to PSAPs.

In the future, it appears that NG911 has the potential to reduce the costs of delivering 911 calls and location information to PSAPs. With a statewide Internet 911 network, there would no longer be any connection problems. Landline and wireless providers could link to the network at the closest geographic point rather than having to run phone lines in some cases hundreds of miles. The lower cost of Internet connections should result in savings. In addition, the Internet would permit PSAPs to share equipment and software rather than having to purchase their own.

Some statutory changes may be needed to facilitate NG911.

The CMRS Board's NG911 consultant suggested some statutory changes to support the transition. The primary goal of the recommendations was to ensure that someone at the state level could oversee and authorize statewide projects for landline, wireless, and other communications methods. One such statewide project is the Emergency Services Information Network proposed for NG911. Other recommended changes included more uniform funding and statutory coverage for all current and future emergency communications methods.

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Appendix A

How This Study Was Conducted

In completing this study, Program Review staff interviewed and obtained information from many individuals including other Legislative Research Commission staff members, officials and employees of other state agencies, local officials, and representatives of other entities mentioned in this report.

Program Review staff reviewed other studies, journal articles, industry publications, and news articles to gather background information. Staff reviewed statutes and regulations regarding emergency services communications as well as pertinent legal decisions and other legal records of relevance.

Staff analyzed financial information provided by the CMRS Board and other entities noted in this study. Staff also reviewed, upon availability, the audited financial statements of county and city governments as well as audits conducted of PSAPs, wireless providers and the CMRS Board.

Program Review toured seven PSAPs of various sizes across the state and interviewed several more PSAP directors by phone. Staff also conducted phone interviews with state and local officials as well as representatives of some of the entities mentioned in this study. Staff attended CMRS Board meetings, and the National Emergency Number Association conference, the Kentucky Emergency Services Conference, and led a focus group discussion of 911 services in the Commonwealth.

Appendix B

Communication Methods and 911

This appendix describes the potential methods of contacting 911 and indicates whether and how each can reach 911. Several of the methods currently do not offer 911 service, while others often depend on a national call center. Some methods include automatic location information in case the caller cannot talk or is lost. The reliability of automatic location information varies greatly.

Method	Description	Contact 911	Automatic Location
Landline voice	Traditional landline phone calls	Yes	Reliable
Landline TTY/TDD	Landline phone calls with special services for hearing-impaired persons	Yes	Reliable
Cell phone voice	Conventional cell phone calls	Yes	Variable
VoIP—interconnected—fixed	Most often cable providers operating in conjunction with an interstate phone provider (e.g., Insight Cable with AT&T); they are in a fixed location and cannot be moved by the customer	Yes	Reliable
Landline PBX	Calls from private branch exchanges, usually within a large office or group of offices	Yes	Variable
Satellite phone voice	Wireless phone calls via satellite rather than the terrestrial cell phone system	Limited	Unknown
Telematics—vehicle	OnStar and similar systems that use a national call center to handle emergency situations	Limited	Variable
Telematics—alarm services	Alarm services that may use a call center to handle alarms or may be directly routed to a responder	Limited	Reliable
Telemetry*	Information from sensors in vehicles or on persons equipped with equipment that can transmit such information relayed from proprietary call centers	Limited	Variable
VoIP—interconnected—nomadic	Internet-based service such as Vonage that the customer can move and that depend on the customer to register a current physical location in the provider's database	Limited	Variable
VoIP—noninterconnected	Internet based service such as Skype that does not permit the customer both to receive calls from and to place calls to traditional telephone numbers**	No	N/A
Text messaging	Text messages from cell phones and other text-enabled devices	No	N/A
E-mail	Conventional e-mail from personal computers or smart phones	No	N/A
Cell phone images, video*	Image and video messages from cell phones	No	N/A
Twitter and similar services	Internet-based social communication networks	No	N/A

Note: Services like Google Voice are not included because they do not replace existing phone services.
*This type of information from the scene would be useful, but it would not represent a means of originating a request for emergency assistance.
**The FCC is considering whether services that can place calls to a traditional telephone number but cannot receive them should be considered "interconnected" for 911 purposes.
Source: Compilation of public information by Program Review staff.

Appendix C

Kentucky Public Safety Answering Points

Certified PSAPs Operated by Local Governments

County	Primary PSAP	PSAP Coverage Area	Additional Primary PSAPs	PSAP Coverage Area
Adair	■	City/county		
Allen	■	City/county		
Anderson	■	City/county		
Ballard				
Barren	■	City/Barren County, Metcalfe County		
Bath	■	City/county		
Bell	■	City/county		
Boone	■	City/county		
Bourbon	■	City/county		
Boyd	■	City/county		
Boyle	■	City/county		
Bracken	■	City/county		
Breathitt				
Breckinridge	■	City/county		
Bullitt	■	City/county		
Butler	■	City/county		
Caldwell	■	City/county		
Calloway	■	County only	Murray	City only
Campbell	■	City/county		
Carlisle	■	City/county		
Carroll	■	City/county		
Carter	■	City/county		
Casey	■	City/county		
Christian	■	City/county		
Clark	■	City/county		
Clay				
Clinton	■	City/county		
Crittenden	■	City/county		
Cumberland	■	City/county		
Daviess	■	City/county		
Edmonson				
Elliott				
Estill	■	City/county		
Fayette	■	City/county		
Fleming	■	City/county		
Floyd	■	City only*		
Franklin	■	City/county		

County	Primary PSAP	PSAP Coverage Area	Additional Primary PSAPs	PSAP Coverage Area
Fulton				
Gallatin	■	City/county		
Garrard	■	City/Garrard County, Lincoln County		
Grant				
Graves	■	City only**		
Grayson	■	City/county		
Green	■	City/county		
Greenup	■	City/county		
Hancock	■	City/county		
Hardin	■	City/county		
Harlan				
Harrison	■	City/county		
Hart				
Henderson	■	City/county		
Henry				
Hickman				
Hopkins	■	City/county		
Jackson				
Jefferson	■	City/county		
Jessamine	■	City/county		
Johnson	■	City/county		
Kenton	■	County only	Covington, Erlanger***	Cities only
Knott				
Knox	■	City/county		
LaRue	■	City/county		
Laurel	■	City/county		
Lawrence	■	City/county		
Lee	■	City/county		
Leslie	■	City/county		
Letcher				
Lewis	■	City/county		
Lincoln	Consolidated	Consolidated		
Livingston	■	City/county		
Logan	■	City/county		
Lyon				
McCracken	■	City/county		
McCreary				
McLean	■	City/county		
Madison	■	City/county		
Magoffin				
Marion				
Marshall	■	City/county		
Martin				

County	Primary PSAP	PSAP Coverage Area	Additional Primary PSAPs	PSAP Coverage Area
Mason	■	City/county		
Meade				
Menifee	■	City/county		
Mercer	■	City/county		
Metcalfe	Consolidated	Consolidated		
Monroe	■	City/county		
Montgomery	■	City/county		
Morgan	■	City/county		
Muhlenberg	■	City/county		
Nelson				
Nicholas				
Ohio	■	City/county		
Oldham	■	City/county		
Owen				
Owsley				
Pendleton	■	City/county		
Perry	■	City/county		
Pike				
Powell	■	City/county		
Pulaski	■	City/county		
Robertson				
Rockcastle	■	City/county		
Rowan	■	City/county		
Russell	■	City/county		
Scott	■	City/county		
Shelby	■	City/county		
Simpson	■	City/county		
Spencer				
Taylor	■	City/county		
Todd	■	City/county		
Trigg	■	City/county		
Trimble				
Union	■	City/county		
Warren	■	City/county		
Washington	■	City/county		
Wayne	■	City/county		
Webster	■	City/county		
Whitley	■	City/county		
Wolfe	■	City/county		
Woodford	■	City/county		
Total	90		3	

*PSAP handles only 911 calls from the City of Prestonsburg
**PSAP handles only 911 calls from the City of Mayfield.
***PSAP also handles calls for 10 other cities.
Source: Prepared by Program Review staff from information provided by the CMRS Board.

Kentucky State Police Certified PSAPs

KSP Post	Post Location	Counties Served
1	Mayfield	Ballard, Hickman, Fulton, Graves*, Lyon
2	Madisonville	N/A
3	Bowling Green	Edmonson, Hart
4	Elizabethtown	Meade, Nelson
5	Campbellsburg	Henry, Owen, Trimble
6	Dry Ridge	Grant, Nicholas, Robertson
7	Richmond	Owsley, Jackson
8	Morehead	Elliott
9	Pikeville	Floyd**, Magoffin, Martin, Pike
10	Harlan	Harlan
11	London	Clay, McCreary
12	Frankfort	Spencer
13	Hazard	Breathitt, Knott, Letcher
14	Ashland	N/A
15	Columbia	Marion
16	Henderson	N/A
Total		30

*The City of Prestonsburg operates a certified PSA that serves the city only.
**The City of Mayfield operates a certified PSAP that serves the city only.
Source: Prepared by Program Review staff from information provided by the Kentucky State Police and the CMRS Board.

Special Noncertified PSAPs

Public Universities

No public university in the state of Kentucky operates its own primary PSAP capable of accepting initial wireless 911 calls. Eastern Kentucky University, Morehead State University, Murray State University, Northern Kentucky University, the University of Kentucky, and Western Kentucky University operate secondary PSAPs capable of accepting landline 911 calls from their respective campuses. Campus police can be dispatched from the secondary PSAPs, but in the case of wireless 911 calls, emergency responders are dispatched from the certified PSAP in the area. In the event of a fire or emergency medical situation, these schools would rely on the certified PSAP in the area to dispatch emergency personnel.

The University of Louisville advertises a four-digit extension for students to call on-campus landlines in the event of an emergency; otherwise, any 911 call from landline or wireless will be sent directly to the certified PSAP in Louisville. The dispatcher at the certified PSAP would then determine whether to transfer the call to the secondary PSAP operated by the University of Louisville or whether to dispatch emergency responders directly.

Kentucky State University and the Kentucky Community and Technical College System do not have emergency communication systems and instead rely on local certified PSAPs.

Airports

Of the three largest airports in Kentucky, only Cincinnati-Northern Kentucky operates its own noncertified primary PSAP with Phase II wireless capability in certain areas of the airport. From those areas, it can dispatch law enforcement, fire, and emergency medical services. For other areas of the airport, wireless calls are handled by the primary Boone County PSAP. Any landline 911 call made from the airport is answered by the airport PSAP.

Louisville International and Blue Grass Airports operate secondary PSAPs and rely on the primary PSAP in the area to answer the initial 911 call. Both airports also promote the use of a seven-digit number from airport phones to their own emergency services.

Military Bases

Fort Campbell and Fort Knox are the two federal military installations housing military personnel located in Kentucky. The Fort Campbell PSAP is in Christian County; the Fort Knox PSAP is in Hardin County. The Blue Grass Army Depot, an ammunition depot with no personnel residing on the grounds, is in Madison County. All three installations are equipped with first responders composed of police, fire, and emergency medical services, and all three installations have mutual aid agreements with the host or surrounding counties. It is more typical that an on-base emergency responder would be deployed to assist responders in the surrounding area than that a city or county responder would be needed to assist on-base.

The PSAPs located at Fort Campbell and Fort Knox are capable of accepting initial wireless and landline 911 calls. The Blue Grass Army Depot PSAP can accept initial landline 911 calls, but wireless 911 calls initiated from the base are answered by the certified PSAP in Madison County and then transferred to the depot PSAP.

Appendix D

Locating the 911 Wireless Caller

Two often cited complaints related to calling 911 from cell phones are difficulty locating the caller and calls routed to the wrong PSAP. In most cases, these problems arise because of technical limitations of the wireless providers, not the PSAPs.

Methods of Determining Location

The two methods are network based and handset based. The two methods correspond to two competing cell phone technologies. Each provider generally uses only one technology and cannot even pick up calls from cell phones using the other.

Wireless carriers under network-based location use triangulation or a similar method. This requires at least two cell towers that can pick up the phone's signal. Triangulation is impossible when there is only one tower in the area and, in fact, usually requires three towers. It also can be difficult to use in hilly areas and has some problems indoors (Communications. Working Group 4C 32). In dense urban areas, there can be problems with reflected signals. It appears that the FCC is encouraging providers to add handset-based location methods to supplement their network methods (FR 75:222 70611).

Wireless carriers under handset-based location use the GPS capability of their handsets. GPS requires that the handset be able to receive the signals from four or more GPS satellites. It works well in rural areas but has some difficulty in heavy forests and indoors, especially deep inside larger buildings (FR 75:222 70608; Communications. Working Group 4C 30).

Location Accuracy Requirements

For several years, the FCC has required wireless providers to meet certain location accuracy requirements wherever Phase II E911 is implemented. For network-based providers, the requirement was that the location be within 100 meters for 67 percent of calls and within 300 meters for 95 percent of calls. For handset-based providers, the location had to be within 50 meters for 67 percent of calls and within 150 meters for 95 percent of calls. Providers could meet the requirements by averaging their location accuracy across all their service areas nationally. Many counties, including many counties in Kentucky, experienced much poorer location accuracy.

The FCC, with input from public safety organizations and telecommunications companies, promulgated a new regulation effective January 18, 2011. In the explanation of the regulation, the FCC described some of the difficulties with network- and handset-based methods and established location accuracy requirements for wireless providers to meet in each county or PSAP jurisdiction by January 18, 2019. The new location accuracy requirements will be implemented in phases.

There are two levels of accuracy for each of the two location methods. The following table shows the levels of accuracy for each method and the dates when each level is required.

Location Accuracy Schedule for Network-based Cell Phone Providers
Percent of Counties Meeting Standard

Effective Date	Within 300 Meters for 90% of Calls	Within 100 Meters for 67% of Calls
Jan. 18, 2012		60% of counties
Jan. 18, 2014	60% of counties	70% of counties
Jan. 18, 2016	70% of counties	100% of counties
Jan. 18, 2019	85% of counties	

Note: 300 meters equals 328.1 yards; 100 meters equals 109.4 yards.
Source: 47 CFR 20.18 (Federal Register 75:222 70613-70614).

Location Accuracy Schedule for Handset-based Cell Phone Providers
Percent of Calls Meeting Standard

Effective Date	Within 150 Meters	Within 50 Meters
Jan. 18, 2013	80% of calls	67% of calls
Jan. 18, 2019	90% of calls	67% of calls

Note: Handset-based providers may exclude 15 percent of counties from these standards indefinitely; 150 meters equals 164.0 yards; 50 meters equals 54.7 yards.
Source: 47 CFR 20.18 (Federal Register 75:222 70613-70614)

A 300-meter radius represents a circle more than six football fields across, 150 meters is a circle more than three football fields across, 100 meters is a circle more than two football fields across, and 50 meters is a circle more than one football field across. For open terrain, it might be fairly easy to find a caller within such circles, but in forests and hills or in suburban and urban areas with many buildings, it can be extremely difficult for responders to locate a caller even within a 50-meter radius.

Furthermore, these standards admit that many calls will fall outside the accuracy requirements. For instance, even in 2019 10 percent of calls from a handset provider may fall outside the 150-meter radius. For network providers, calls from 15 percent of counties will not have to meet even the 300-meter requirement.

Between 2011 and 2019, providers are allowed to exclude up to 15 percent of the counties they cover from these requirements based on such issues as heavy forestation and insufficient numbers of cell towers. Within 90 days after April 28, 2011, providers were required to report to the FCC any counties they wished to exclude. The specific exclusions for network-based providers will expire on January 18, 2019, but the final accuracy level still permits 15 percent of counties to be out of compliance for the 300-meter requirement. Exclusions for handset-based providers do not expire and so remain comparable to the final requirement for network providers.

A review of FCC filings showed that 38 Kentucky counties, as shown in the next table, were excluded by at least one wireless provider. AT&T excluded 34 counties. Although this represents 28 percent of Kentucky counties, AT&T is permitted to do so if it excludes no more than

15 percent nationally. T-Mobile excluded all or part of five counties; Cincinnati Bell excluded one county. Verizon stated that it did not intend to exclude any counties as of September 2011. Under the current FCC regulation, providers will be able to exclude these counties from 911 location accuracy requirements indefinitely.

Kentucky Counties Excluded From 911 Location Accuracy Requirements

County Excluded	Cincinnati AT&T	Cincinnati Bell	Cincinnati T-Mobile	County Excluded	Cincinnati AT&T	Cincinnati Bell	Cincinnati T-Mobile
Allen	■			Leslie	■		
Bell			■	Lewis	■		
Bracken		■		Logan	■		
Butler	■			Lyon	■		
Carroll	■			Mason	■		
Carter	■			Menifee	■		
Casey	■			Monroe	■		
Clinton	■			Morgan	■		
Crittenden	■			Perry	■		
Cumberland	■			Pike	■		
Estill	■			Powell	■		
Floyd	■			Rockcastle	■		■
Franklin	■			Rowan	■		
Gallatin			■*	Todd	■		
Greenup	■			Trigg	■		
Harlan	■			Washington	■		
Johnson	■		■	Whitley	■		■
Knox	■			Wolfe	■		
Lawrence	■			Total	34	1	5

*The Interstate 71 corridor is not excluded.
Sources: AT&T. "E911"; Cincinnati; T-Mobile.

Misrouting of 911 Calls

Routing the wireless 911 call to the correct PSAP can be difficult. Balancing speed against accuracy, wireless providers do not wait to see if it is possible to triangulate or get a global positioning fix on the caller before routing the call. That process could take 30 seconds or more. Instead, each wireless antenna face is assigned to a PSAP, and the calls are routed instantly. If the caller is in another jurisdiction, the answering PSAP will transfer the call to the correct one.

Most misrouting happens when antennas are near county lines. For instance, if the antenna were in Jessamine County but near the Fayette County line, the face directed toward Fayette County might be routed to the Fayette County PSAP. If someone between the tower and the county line called 911, the call would go to Fayette County, where the call taker would transfer the call back to Jessamine County. Counties near rivers also reported frequent misrouting because calls on one side of the river might be picked up by a tower on the other side, which likely would be in another county or state.

Appendix E

Local Landline 911 Fees

This table lists each local government that assessed a monthly landline surcharge in FY 2010 and the amount of the fee. For surcharges listed as a range, the lower rate is normally the residential rate, and the higher rate is applied to businesses. Nine counties had no landline surcharges as of FY 2010: Clay, McCreary, Marion, Nicholas, Pulaski, Robertson, Russell, Trimble, and Wayne.

County	Monthly Surcharge	County	Monthly Surcharge
Adair	$2.00	Franklin	$1.00
Allen	$1.50	Gallatin	$2.00
Anderson	$1.89	Garrard	$3.00
Ballard	$1.00	Grant	$2.00
Barren	$1.00	Graves	$1.00
Bath	$3.00	Grayson	$2.42
Bell	$2.29	Green	$2.00
Boone	$2.52	Greenup	$2.50
Bourbon	$3.00	Hancock	$0.95
Boyd	17% of base telephone rate	Hardin	$2.49
Boyle	$0.50	Harlan	$1.25
Bracken	$2.50	Harrison	$4.00
Breathitt	$1.25-$1.50	Hart	$1.50
Breckinridge	$1.00	Henderson	$2.50
Bullitt	$1.00	Henry	$1.00
Butler	$2.00	Hickman	$1.00
Caldwell	$1.50	Hopkins	$0.32
Calloway	$1.00	Jackson	$3.00
Campbell	$3.00	Jefferson	$0.79
Carlisle	$3.00	Jessamine	$2.25
Carroll	$1.25	Johnson	$1.73
Carter	$1.63	Kenton*	$2.76
Casey	$1.75	Knott	$1.25-$1.50
Christian	$0.75	Knox	$1.25
Clark	$3.00	LaRue	$2.75
Clinton	$2.50	Laurel	$2.50
Crittenden	$0.60	Lawrence	$1.95
Cumberland	$4.00	Lee	$1.07
Daviess	$1.25	Leslie	$1.50
Edmonson	$2.00	Letcher	$1.25-$1.50
Elliott	$1.00	Lewis	$3.50
Estill	$3.00	Lincoln	$3.00
Fayette	$2.28	Livingston	$0.60
Fleming	$4.00	Logan	$2.00
Floyd	$0.99-$1.99	Lyon	$0.60
Fulton	$1.00	Madison	$3.50

County	Monthly Surcharge	County	Monthly Surcharge
Magoffin	$0.99-$1.30	Perry	$1.75
Marshall	$1.50-$2.50	Pike	$0.99-$1.30
Martin	$0.99-$1.30	Powell	$4.00
Mason	$1.70	Rockcastle	$2.00
McCracken	$1.50	Rowan	$1.25
McLean	$2.25	Scott	$0.50
Meade	$1.00	Shelby	$2.99
Menifee	$2.00	Simpson	$2.00
Mercer	$0.80	Spencer	$1.84
Metcalfe	$1.00	Taylor	$1.00
Monroe	$1.50	Todd	$2.25
Montgomery	$3.00	Trigg	$1.25
Morgan	$1.00	Trimble	$0.00
Muhlenberg	$2.00	Union	$0.60
Nelson	$0.50	Warren	$0.68
Ohio	$2.86	Washington	$1.00
Oldham	$2.00-$3.40	Webster	$2.00
Owen	$1.00	Whitley	$2.00
Owsley	$1.00	Wolfe	3% tax on phone service and long distance tolls
Pendleton	$2.50	Woodford	$3.50

*City of Covington: $4; City of Erlanger and 10 other cities for which it handles calls (Bromley, Crescent Springs and Villa Hills, Crestview Hills, Edgewood, Elsmere, Fort Mitchell, Fort Wright, Lakeside Park, Ludlow, and Park Hills): $4.25.
Source: Prepared by Program Review staff from information provided by the CMRS Board and local governments.

Appendix F

Formula for CMRS Payments to PSAPs

The following tables demonstrate how the CMRS payments to PSAPs are calculated. Program Review staff used 10 hypothetical PSAPs with various population and pro rata shares to demonstrate the variation in amounts per subscriber received by PSAPs. Data from the third quarter of FY 2011 were used in these calculations.

Calculation of Pro Rata Share Value and Subscriber Value
Third Quarter Fiscal Year 2011

	Average Monthly Remittance to CMRS*	Average Monthly Subscribers	Average Monthly Revenue Per Subscriber**
	$2,170,646	3,594,133	$0.60
	Percent Allocated by Statute	**Amount Deposited in Each Fund**	**Amount Remaining From Carrier Deposits**
Administration Fund	2.5%	$54,266	$2,116,380
Grant Fund	10.0%	211,638	1,904,742
Cost Recovery Fund	20% of remaining	380,948	1,523,794
Pro Rata Fund	40% of remaining	761,897	759,724
Volume Fund	40% of remaining	761,897	0
	Average Monthly Fund Amount	**Number of Pro Rata Shares**	**Rate Per Pro Rata Share**
Pro Rata Fund	$759,724	114	$6,664
	Average Monthly Fund Amount	**Average Number of Subscribers**	**Rate Per Subscriber**
Volume Fund	$759,724	3,594,133	$0.21

Note: Amounts more than $1 are rounded to the nearest dollar. Amounts do not include interest earned on funds.
*Amount remitted to CMRS Board after most carriers withhold a 1.5 percent collection fee.
**Some providers of prepaid services may remit under the "average revenue per user" option, resulting in less than 70 cents per subscriber. TracFone is remitting only fees for customers that purchase service directly from the company, which also lowers the average revenue per subscriber.
Source: Prepared by Program Review staff with information provided by the CMRS Board.

The monthly per subscriber value of payments to PSAPs is shown in the following table. It illustrates how the formula provides a larger amount per subscriber to smaller PSAPs and to those that have consolidated. For comparison, if all PSAPs received the same monthly amount per subscriber, it would have been 42 cents during the third quarter of FY 2011.

Monthly Value of Payments to Hypothetical PSAPs
Third Quarter Fiscal Year 2011

PSAP	Average Subscribers	Volume Payment*	Pro Rata Shares	Pro Rata Payment**	Average Total Payment	Payment Per Subscriber
A	4,000	$846	1	$6,664	$7,510	$1.88
B	20,000	4,228	1	6,664	10,892	0.54
C	30,000	6,342	1	6,664	13,006	0.43
D	40,000	8,456	2	13,328	21,784	0.54
E	50,000	10,570	3	19,993	30,563	0.61
F	75,000	15,855	2	13,328	29,184	0.39
G	100,000	21,140	1	6,664	27,804	0.28
H	200,000	42,280	2	13,329	55,609	0.28
I	300,000	63,420	1	6,664	70,084	0.23
J	600,000	126,840	1	6,664	133,504	0.22
Average						$0.42

Note: Volume, pro rata, and average total payments are rounded to the nearest dollar.
*Volume payment is the number of subscribers times the $0.2114 subscriber value.
**Pro rata payment is the number of pro rata shares times the $6,664.25 pro rata share value.
Source: Prepared by Program Review staff with information provided by the CMRS Board.

Appendix G

Grants for 911 Services

Commercial Mobile Radio Service Emergency Telecommunications Board Grants

The CMRS Board has awarded grants since 2006 totaling $5,915,475.

Single-county Awards

Year	County	Recipient	Award Amount	Summary of Grant Award Purpose
2006	Bell*	County Fiscal Court	$37,461	Voice data recorder and digital base radios
2006	Boyd	Regional Public Safety Communications Center	23,767	Automated generator
2006	Carlisle*	County Fiscal Court	179,969	GIS and CAD hardware/software
2006	Clay**	Cumberland Valley ADD on behalf of Clay County	69,263	Misc. 911 equipment
2006	Edmonson**	County Fiscal Court	130,000	Mapping and addressing services
2006	Magoffin	County Fiscal Court	19,500	Automated generator
2006	Martin	County Fiscal Court	199,142	Mobile and handheld radios
2007	Boyd	Regional Public Safety Communications Center	8,980	Zetron unattended conference card
2007	Elliott	County Fiscal Court	82,000	Mapping and addressing
2007	Fayette	Lexington-Fayette Urban County Government	147,457	Regionalized 911 network
2007	Fleming	County Fiscal Court	52,245	Misc. 911 equipment
2007	Greenup	County Fiscal Court	27,000	Misc. 911 equipment
2007	Jefferson	City of Anchorage	15,000	Automated generator
2007	Johnson	City of Paintsville	45,950	Misc. 911 equipment
2007	Marshall	County Fiscal Court	24,101	Radio consoles and licenses
2007	Meade	County Fiscal Court	78,475	CAD software
2007	Montgomery	Mt. Sterling	66,988	Misc. 911 equipment
2007	Nicholas	City of Carlisle	52,000	Mapping and addressing
2007	Pendleton	County Fiscal Court	19,707	CAD hardware and software
2007	Rowan	City of Morehead	87,652	Radio console

Year	County	Recipient	Award Amount	Summary of Grant Award Purpose
2007	Simpson	County Fiscal Court	$38,476	Dispatch consoles and headsets
2007	Wolfe	County Fiscal Court	31,710	Automated generator
2008	Allen	County Fiscal Court	17,548	UPS system
2008	Bell*	County Fiscal Court	22,233	Misc. 911 equipment
2008	Breckinridge	County Fiscal Court	18,388	Automated generator
2008	Daviess	City of Owensboro	62,065	Misc. 911 equipment
2008	Fayette	Lexington-Fayette Urban County Government	177,015	Extension of 2007 grant, regional 911 network
2008	Floyd	City of Prestonsburg	22,091	911 recording system
2008	Jessamine	Jessamine County E911	32,908	GIS data management system
2008	Jessamine	Jessamine County E911	19,952	911 recording system
2008	Logan	County Fiscal Court	139,173	Misc. 911 equipment
2008	Menifee	County Fiscal Court	68,549	PSAP relocation
2008	Oldham	County Fiscal Court	146,000	Misc. 911 equipment and PSAP renovation
2008	Pendleton	County Fiscal Court	159,637	Misc. 911 equipment
2008	Scott	City of Georgetown	60,076	Misc. 911 equipment
2008	Taylor	City of Campbellsville	35,214	Misc. 911 equipment
2009	Boyd	Regional Public Safety Communications Center	40,216	Communications room upgrade and furniture
2009	Carroll	County Fiscal Court	22,580	911 recording system
2009	Christian	Hopkinsville-Christian County	226,621	Misc. 911 equipment
2009	Daviess	County Fiscal Court	31,000	911 recording system
2009	Daviess	County Fiscal Court	10,334	Netclock
2009	Greenup	County Fiscal Court	6,559	E911 access control upgrade
2009	Henderson	City of Henderson	55,573	Misc. 911 equipment
2009	Jackson**	County Fiscal Court	34,907	Misc. 911 equipment
2009	Johnson	City of Paintsville	85,173	Mapping and addressing update
2009	Menifee	County Fiscal Court	32,055	Mapping vehicle
2009	Muhlenberg	County Fiscal Court	112,896	Radios
2009	Taylor	City of Campbellsville	136,334	PSAP renovation and misc. 911 equipment
2009	Whitley	County Fiscal Court	166,696	CAD hardware and software
2011	Madison	County Fiscal Court	125,000	Basic 911 migration

Multiple-county Awards

Year	Recipient	Award Amount	Summary of Grant Award Purpose
2006	Kentucky River ADD	$284,280	Mapping and addressing services and digital map creation for Breathitt County, Knott County, Letcher County, and Owsley County
2007***	Lake Cumberland ADD	350,000	Mapping, addressing and 911 equipment for Russell County, Cumberland County, Clinton County, and Wayne County
2007	Lake Cumberland ADD	88,820	Mapping software for Taylor County and Adair County
2007	Cumberland Valley ADD	45,040	Mapping and addressing for Bell County and Jackson County
2008***	North Pennyrile E911 Board	435,912	Misc. 911 equipment for Crittenden County, Union County, Calloway County and Livingston County
2011	Lexington-Fayette Urban County Government / Bath County 911	125,000	NG911 proof of concept grant

Consolidation Awards

Year	Recipient	Award Amount	Summary of Grant Award Purpose
2007	Bluegrass 911 Central Communications	$200,000	Garrard County and Lincoln County consolidation grant
2008	Madison County/Berea	200,000	City of Berea and Madison County consolidation grant
2008†	Campbell County/ Covington	200,000	City of Covington and Campbell County consolidation grant
2009	City of Owensboro/ Daviess County	200,000	City of Owensboro and Daviess County consolidation grant
2011	Hart County/Kentucky State Police Post 3	200,000	Hart County and Kentucky State Police consolidation grant

Other Awards

Year	Recipient	Award Amount	Summary of Grant Award Purpose
2008	Kentucky State Police	$32,788	Network storage system and GIS workstation upgrades
2011	Wireless Providers	50,000	Proof of concept NG911 grant

Note: Award amounts are rounded to the nearest dollar. ADD is area development district, CAD is computer-aided dispatch, GIS is geographic information system, and UPS is uninterruptible power supply.
* indicates now operating CMRS-certified PSAP
** indicates county working toward CMRS certification.
*** indicates all counties now separately operating CMRS-certified PSAPs.
† indicates consolidation grant was not completed and so no funds were expended.
Source: Prepared by Program Review staff from information provided by the CMRS Board.

Kentucky Office of Homeland Security Grants

The Kentucky Office of Homeland Security awards local community competitive grants and receives applications from cities, counties, and area development districts. Awards made since 2005 total $5,981,058.

Single-county Awards

Year	County	Applicant	Award Amount	Summary of Grant Award Purpose
2005	Carroll	County Fiscal Court	$48,984	911 system
2005	Clinton	County Fiscal Court	16,312	Back-up 911 dispatch console
2005	Franklin	County Fiscal Court	79,000	Reverse 911 system
2005	Grayson	County Fiscal Court	389,477	Enhanced 911 system
2005	Harrison	County Fiscal Court	188,891	Expansion of 911 dispatch board
2005	Mason	County Fiscal Court	221,110	911 center equipment
2005	Menifee	County Fiscal Court	192,319	911 Center
2005	Montgomery	City of Mt. Sterling	500,000	Finishing of CAD system and mobile data terminals/infrastructure
2005	Morgan	City of West Liberty	455,058	City of West Liberty 911
2006	Bell	Bell County Fiscal Court	160,616	Misc. 911 equipment
2006	Calloway	City of Murray	2,333	Radio dispatch console and install
2006	Calloway	City of Murray	32,505	CAD system
2006	Carroll	County Fiscal Court	160,616	Misc. 911 equipment
2006	Edmonson	County Fiscal Court	63,184	911 telephone system

Year	County	Applicant	Award Amount	Summary of Grant Award Purpose
2006	Estill	County Fiscal Court	$40,062	Complete 911 center equipment and digital record
2006	Garrard	County Fiscal Court	19,865	Misc. 911 equipment
2006	Hardin	County Fiscal Court	66,877	Misc. 911 equipment
2006	Livingston	County Fiscal Court	147,630	Misc. 911 equipment
2006	Meade	County Fiscal Court	99,902	GIS mapping and CAD system and services
2006	Nelson	County Fiscal Court	221,280	Establish E911 center
2006	Shelby	County Fiscal Court	106,254	Misc. 911 equipment
2006	Union	County Fiscal Court	12,780	Complete the GIS/GPS structure addressing project
2007	Elliott	County Fiscal Court	87,947	Enhanced 911 project
2007	Fleming	County Fiscal Court	83,878	Enhanced 911 project
2007	Greenup	County Fiscal Court	18,000	Computer aided dispatch
2007	Jefferson	City of Anchorage	10,000	911 facility generator
2007	Marshall	County Fiscal Court	13,792	E911 communications center enhancement
2007	Montgomery	City of Mt. Sterling	44,659	Viper controller acquisition
2007	Nelson	County Fiscal Court	103,264	Misc. 911 equipment
2007	Nicholas	City of Carlisle	113,146	Multi-jurisdiction E911 project
2007	Pendleton	County Fiscal Court	13,138	Multi-jurisdictional E911 redevelopment
2007	Rowan	City of Morehead	31,948	911 console
2007	Simpson	County Fiscal Court	25,831	911 project
2007	Wolfe	County Fiscal Court	23,190	911 generator project
2008	Bourbon	County Fiscal Court	121,000	Mobile message center/mobile CAD
2008	Bullitt	County Fiscal Court	42,000	Software, training, center line cleanup
2008	Carroll	County Fiscal Court	63,000	Controller unit for 911 center
2008	Edmonson	County Fiscal Court	63,000	Repeater site for 911 center
2008	Estill	County Fiscal Court	45,000	Two 911/EOC consoles
2008	Hart	County Fiscal Court	73,000	911 mapping
2008	Warren	County Fiscal Court	56,000	Misc . 911 equipment
2008	Washington	County Fiscal Court	105,000	Enhanced 911 system
2008	Shelby	County Fiscal Court	155,000	Complete 911 system

Year	County	Applicant	Award Amount	Summary of Grant Award Purpose
2009	Bullitt	County Fiscal Court	$56,321	Orthoimagery and planimetric/topographic data
2009	Estill	County Fiscal Court	109,168	VoIP system
2009	Hancock	County Fiscal Court	69,384	VoIP system
2009	Jefferson	University of Louisville	142,652	Misc. 911 equipment
2010	Bath	County Fiscal Court	47,500	911 center equipment replacement
2010	Greenup	County Fiscal Court	37,000	Dispatch software/upgrade
2010	Mercer	County Fiscal Court	31,300	Digital recorder for dispatch center

Multiple-county Awards

Year	Recipient	Award Amount	Summary of Grant Award Purpose
2005	Buffalo Trace ADD	$323,772	E911 system for five counties
2006	Kentucky River ADD	105,165	Multi-year project of mapping structures
2006	Kentucky River ADD	322,875	Establish/enhance emergency operations center
2006	Lake Cumberland ADD	110,706	Establish E911 in 24 municipalities
2007	Cumberland Valley ADD	11,260	Database compilation for Bell County and Jackson County
2007	Lake Cumberland ADD	94,863	Phase II 911 equipment
2007	Regional Public Safety Communication Center	2,245	E911 call transfer upgrade

Note: Award amounts are rounded to the nearest dollar. ADD is area development district, CAD is computer aided dispatch, EOC is emergency operations center, and GIS is geographic information system.
Source: Prepared by Program Review staff from information provided by the Kentucky Office of Homeland Security.

Appendix H

911 Fees in the US in 2011

State	Landline and Other Fees*	Wireless Fees	VoIP Fees
Alabama	Up to 5% of highest bundled rate	$0.70	Up to 5% of highest bundled rate
Alaska	$0.00-$2.00	$0.00-$2.00	
Arizona	$0.20	$0.20	$0.20
Arkansas	5%-12% of tariff rates	$0.65 $0.65 prepaid	$0.65
California	0.50% of intrastate calls	0.50% of intrastate calls	0.50% of intrastate calls
Colorado	$0.43-$1.50 (max)	$0.43-$1.50 (max) 1.4% of sales-prepaid	$0.43-$1.50 (max)
Connecticut	$0.50	$0.50	$0.50
Delaware	$0.60	$0.60	$0.60
Florida	$0.41 – $0.50	$0.50	$0.50
Georgia	$1.50	$1.00-$1.50	$1.50
Hawaii	$0.27	$0.66	
Idaho	$1.00 (max)	$1.00 (max)	$1.00 (max)
Illinois	$0.25-$5.00	$0.73 $2.50 City of Chicago $0.73 prepaid	$0.25-$5.00
Indiana	3% or 10% of monthly access	$0.50 $0.25 prepaid	3% or 10% of monthly access
Iowa	$0.45-$2.50	$0.65	
Kansas	$0.75 (max)	$0.50	$0.50
Kentucky	$0.32-$4.25	$0.70 $0.70 prepaid	
Louisiana	$0.62-$1.00 residential $1.30-$2.00 business	$0.85 2% of retail sales-prepaid	$1.00
Maine	$0.45	$0.45 $0.45 prepaid	$0.45
Maryland	$1.00	$1.00	$1.00
Massachusetts	$0.75	$0.75 $0.75 prepaid	$0.75
Michigan	$0.19 state fee $0.00-$3.00 by county	$0.19 state fee $0.00-$3.00 by county $0.90 prepaid	$0.19 state fee $0.00-$3.00 by county

State	Landline and Other Fees*	Wireless Fees	VoIP Fees
Minnesota	$0.97	$0.90	$0.80
Mississippi	$1.00 residential $2.00 commercial (up to 25 lines)	$1.00 $1.00 prepaid	$1.00
Missouri	15% of base rate (51 counties) 0.5% of sales tax (41 counties) Unfunded – remaining counties	None	
Montana	$1.00	$1.00	$1.00
Nebraska	$0.50-$1.00	$0.50-$0.70	
Nevada	Varies by jurisdiction– property tax and/or landline surcharge (max $0.25)	Must equal landline surcharge	
New Hampshire	$0.57	$0.57	
New Jersey	$0.90	$0.90	$0.90
New Mexico	$0.51	$0.51	
New York	$0.35-$1.00	$1.20-$1.50	$0.35
North Carolina	$0.60	$0.60	$0.60
North Dakota	$1.00-$1.50 (max)	$1.00-$1.50 (max)	$1.00 –$1.50 (max)
Ohio	$0.50 (max) (legally limited to a few counties, no general surcharge)	$0.28	
Oklahoma	3-15% of base rate	$0.50 (approx. 42 counties)	$0.50
Oregon	$0.75	$0.75	$0.75
Pennsylvania	$1.00-$1.50	$1.00	$1.00
Rhode Island	$1.00	$1.26	$1.26
South Carolina	$0.30-$1.00	$0.61	
South Dakota	$0.75	$0.75	$0.75
Tennessee	$0.65-$1.50 residential/ $2.00-$3.00 business	$1.00	$1.00
Texas	$0.50 state program fees vary – district	$0.50 2% of sales-prepaid	$0.50
Utah	$0.61 local fee plus $0.08 state fee	$0.61 local fee plus $0.08 state fee	$0.61 local fee plus $0.08 state fee

State	Landline and Other Fees*	Wireless Fees	VoIP Fees
Vermont	Universal Service Funding	Universal Service Funding	
Virginia	$0.75	$0.75 $0.50 prepaid	$0.75
Washington	$0.25 statewide $0.70 by counties	$0.25 statewide $0.70 by counties	$0.25 statewide $0.70 by counties
West Virginia	$0.98-$5.34 by county	$3.00 Portion of sales tax-prepaid	$0.98-$5.34 by county
Wisconsin	$0.36-$1.00	None	
Wyoming	$0.25-$0.99	$0.25-$0.99	

Note: Exact amounts may be adjusted locally.
*Unless otherwise specified, amounts reflect monthly landline surcharges.
Source: National Emergency Number Association, Range of 9-1-1 User Fees – March 2011.

Appendix I

Allowable Expenditures of Wireless 911 Funds

The Louisville MetroSafe PSAP has a detailed list called "Guidelines for 911 Center Operational Costs" which mirrors in more understandable terms the permissible and non-permissible uses of CMRS funds detailed in 202 KAR 6:090. Other states, such as Massachusetts and Michigan, use identical lists. Program Review staff were unable to determine the origin of the list, even though it seems to be in common use.

Guidelines for 911 Center Operational Costs

Shared wireless and wireline [landline] costs should be allocated based on their relevant percentage of activity.

The lists below are suggested only as a guide to develop budgets for the development and operation of a 911 service.

Items listed in the… [allowed costs] may be included or deleted as dictated by the local 911 authority.

Allowed 911 Center Operational Expenditures

Personnel Costs directly attributable to delivery of 911 service (i.e. directors, supervisors, dispatchers, call-takers, technical & support staff):

- Salaries
- MSAG Coordination
- Fringe Benefits
- Addressing/Database
- Uniforms
- EAP

**note: if 911 staff serves dual functions (e.g., a call taker who is also a police officer) then only those portions of personnel costs attributable to their 911 functions should be allowable

Facility Costs directly attributable to the delivery of 911 service:

- Capital Improvements for construction, remodel or expansion
- Electrical/Heat/AC/Water
- Fire Suppression System
- Alarms/Security Systems
- Cleaning, Maintenance, Trash Removal
- Telephone
- Generator/UPS and Grounding
- Insurance

Office Supplies
Printing and copying
Furniture
**note: if a shared facility, only those portions of facility costs attributable to the 911 functions should be allowable

Training and Memberships directly attributable to 911 service:
On the job training
Vendor provided training
Conferences
Travel and lodging as necessary
Membership in associations (APCO, NENA, etc.)

Hardware, software, connectivity and peripherals directly attributable to the delivery of 911 service:
911 controller / Telephone equipment / Software
911 trunks, administrative lines for 911 center
Remote 911 hardware/modems
ACD / Call management software
Time stamp / Clock hardware
Computer workstations
TDD equipment
Voice logging equipment
Radio system (consoles, infrastructure)
Computer-Aided Dispatch, GIS/Mapping, Paging, Mobile data, LINK/NCIC, AVL systems
Associated database costs
Connectivity, Software licensing, Interfaces, Maintenance and service agreements for any of above

Prorated Vehicle costs or reimbursement directly attributable to the delivery of 911 service:
Travel for MSAG / 911 related GIS verification and testing
Travel for 911 public education purposes

Professional Services directly attributable to the delivery of 911 service
Attorneys Consultants
Architects Auditor Insurance

Public information/Education Expenses directly attributable to the delivery of 911 service:

Not Allowed or Non – 911 Operational Expenditures

Personnel Costs of law enforcement, fire, and EMS responders, emergency management staff, shared support or technical staff, except for portions of time directly functioning as 911 allowable staff.

Facility Costs of law enforcement, fire, EMS, emergency management, or other municipal facilities, except for that portion housing the 911 center or backup center, or leased to the 911 center for allowable training or meeting facilities.

Capital costs and furnishing for facilities for which the primary purpose is other than 911 (e.g. a conference room used primarily for the City Council but occasionally leased/loaned to the 911 center for meetings).

Training for staff not involved directly in the delivery of 911 service, or for any staff for courses not directly attributable to 911 or dispatching services. **Memberships** for staff not involved directly in the delivery of 911 service, or for associations with a primary purpose other than public safety communications (e.g. sheriffs' associations, police or fire chief associations, etc.).

Hardware, software, connectivity and peripherals not attributable to the delivery of 911 service:

Law enforcement record management systems
Fire records management systems
EMS records management systems
Jail records management systems
Word processing, databases, etc. not directly attributable to 911
GIS not directly related to the delivery of 911 service
Court information systems
Field equipment for radio, paging, mobile data, LINK / NCIC
Computer Aided Dispatch, or AVL systems
Connectivity for any of above
Maintenance and service agreements for any of above
Software licensing of any of above costs

Vehicle Costs (fleet vehicle, pool car, mileage reimbursement, etc.) for law enforcement, fire, or EMS responders, such as patrol cars, fire apparatus, ambulances, etc.

Professional Services not directly attributable to the delivery of 911

Public Information/Education Expenses not directly attributable to the delivery of 911 service

Appendix J

Prepaid Wireless 911 Issues

This appendix discusses the statutory fee payment methods and presents a summary of the Virgin Mobile and TracFone court cases.

Prepaid 911 Fee Payment Methods

In 2006, KRS 65.7635 was modified to offer a prepaid service provider three 911 fee payment options. In the court cases, these are known as "Option A," "Option B," and "Option C."

- Option A: Deduct the value of the fee from the customer's account each month if there is a sufficient positive balance, also known as the decrement method.
- Option B: Estimate the number of devices by dividing the total revenue received from customers in the state by $50 and remit the value of the fee for each. The intent was to estimate the number of customers by assuming the average revenue per user (ARPU) was $50.
- Option C: An authorization permitting the state wireless 911 authority to promulgate an alternative by regulation.

The CMRS Board has declined to promulgate a regulation to provide a third option. In Kentucky, therefore, there are only two effective options.

Decrement Method

Under KRS 65.7635(a), the decrement method, the provider deducts value from the customer's balance and remits 70 cents per customer. The provider does not have to deduct from a customer's account if the value remaining is less than 70 cents. With currently available information, it is not possible to determine exactly how providers have carried out the decrement method. The discussion below describes the method in more detail.

The value to the customer is not the same as the value to the provider. According to the industry, most prepaid service is sold through resellers and not by the provider directly to the customer. For resold service, the seller receives a portion of the face value and the provider receives the rest. For example, if the markup were 10 percent of face value, the value to the customer would be 70 cents but the value to the provider would be 63 cents. If the provider took the customer's perspective, the customer would see a contribution of 70 cents, but the provider would have to make up the difference of 7 cents. If the provider deducted from its own perspective, the customer would see a contribution of about 78 cents, but the value to the provider would be 70 cents.

Unlimited monthly prepaid plans have become popular. For these plans, minutes have no value. It might be possible for the provider to recover some of the fee by shortening the period by, for example, 10 hours on a $50 unlimited monthly plan. Industry officials, however, stated that the provider would have to cover the entire fee from its own revenues.

Average Revenue Per User Method

Under KRS 65.7635(b), the ARPU method, the provider pays the fee out of its own funds and then is free to attempt to recover it by any legitimate means, including deducting time from the customer's balance or building it into the wholesale price. Program Review staff are unaware of any provider using ARPU that also attempts to deduct value.

The purpose of the ARPU method is to estimate the number of customers, assuming that the average customer generates $50 in revenue per month. One criticism of the method is that the $50 ARPU is too high. If so, the estimated number of customers and the provider's obligation would be too low.

Actual ARPU varies significantly among prepaid providers and may vary from state to state. TracFone has one of the lower reported amounts at $14 (América Móvil 15). The industry cites Morgan Stanley's 2009 estimate of $27.50 as the average across providers (Flannery). A survey of prepaid providers in Florida showed an ARPU of $20.11 in 2007 (State of Florida 17).

Using a $27.50 ARPU for illustration, the average provider would remit 38.5 cents per customer. With an ARPU of $14, TracFone would remit just under 20 cents per customer. Other providers would remit different amounts per customer. Because the real ARPU varies among providers, different providers bear different fee burdens per customer.

ARPU also varies over time. An FCC summary indicated that ARPU for prepaid wireless might be going up because the overall wireless market is nearing saturation and prepaid plans, especially unlimited monthly plans, have begun to attract higher-end customers from postpaid service ("In the Matter of Implementation" 66-69).

Cases

Over the course of 2 years (2010 and 2011), the court heard arguments on issues dealing with the applicability of various Kentucky statutes requiring prepaid mobile phone providers to collect monthly emergency 911 service fees from their customers on behalf of the Commonwealth of Kentucky. Ultimately, in a series of memoranda, the court determined the scope of Virgin Mobile's and TracFone's responsibilities under the various statutes.

Virgin Mobile Case

Virgin Mobile was contesting whether it had to remit 911 fees prior to the 2006 amendment to Kentucky law which outlined specific methods by which prepaid providers can calculate 911 fees owed to CMRS. *Commonwealth of Kentucky v. Virgin Mobile, U.S.A., L.P.*, No 08-CI-10857 (Jefferson Cir. Ct. March 25, 2010) set out the salient points as follows.
Before 2006, Kentucky law was silent on the method prepaid wireless providers should use to collect 911 fees from their customers. The issue before the court was whether or not there was legislative intent for prepaid wireless providers such as Virgin Mobile to collect 911 fees from their customers before 2006. Virgin Mobile began doing business in Kentucky in 2002 and paid the 911 fees until 2005. In 2005, Virgin Mobile discontinued payment of the fees and began

claiming a credit for the amounts it asserted it had overpaid between 2002 and 2005. The court ruled that even before 2006, KRS 65.7621, et seq., as first enacted in 1998 and amended in 2002, applied to all wireless providers, including prepaid providers.

KRS 65.7629(3) states that the 911 fee is due from each wireless connection. A wireless connection is defined as the "mobile handset number" (KRS 65.7621(6)). Thus, the 911 fee is not imposed upon the provider, but on the phone user. Whether those users are based upon prepaid or postpaid models is irrelevant to the duty to pay the fee.

The problem arises because the duty of collecting the 911 fee falls upon each wireless provider (KRS 65.7635(1)). Further, KRS 65.7635(1) states that the provider shall make such a collection as part of its billing process. The statute refers to the collection agent as a "billing provider." While prepaid providers are wireless providers, their business model is not that of billing providers. The court applied the tax exemptions exception from George v. Scent, Ky. App., 346 S.W.2d 784 (1961). That case stated that "an intention of the Legislature to grant an exemption from taxation will not be presumed or implied, since taxation of all is the rule and exemption is the exception." In other words, the court found that the prepaid provider's argument was the equivalent of a request for an exemption from a generally applicable tax law. Even though the 911 fee is not a tax, the court treated Virgin Mobile's request for exemption of charging the 911 fee as the equivalent of a request for an exemption from a generally applicable tax. Thus, the prepaid customers were not exempt from paying the 911 fees, and so the prepaid providers were not exempt from collecting 911 fees from their customers.

The court held that even though the statute was silent as to collection methods, it cannot presume that an exemption from the 911 fees was intended for prepaid customers. Because the 911 fee was properly levied, the fact that there was no statutory collection method did not relieve Virgin Mobile from collecting 911 fees. Virgin Mobile was required to pay its unremitted 911 fees in the amount of $547,945.67 to the CMRS board. The decision is on appeal to the Kentucky Court of Appeals.

TracFone Case

The second lawsuit brought by the CMRS board against a prepaid provider was against TracFone Wireless in *Commonwealth of Kentucky Commercial Mobile Radio Service Emergency Telecommunications Board v. TracFone Wireless, Inc.*, 735 F.Supp.2d 713 (W.D.Ky, 2010).

The court held that TracFone is required to collect 911 service fees from its Kentucky customers. The CMRS 911 service charge must have uniform application within Kentucky (KRS 65.7627). The court also concluded that the 2006 amendments to Kentucky's statutes regarding collection of 911 fees changed only the permissible methods of collection, not the requirement that all CMRS providers, including TracFone, are obligated to act as collection agents of the 911 fees. There is no question that TracFone is a CMRS provider under the CMRS definition and statute. One of TracFone's arguments was that it is not a CMRS provider because it does not use monthly billing as a part of its business model. The court stated that this does not remove TracFone from the status of a CMRS provider. Kentucky statute defines "CMRS provider" without reference to any method of payment or business model (KRS 65.7621(9)). The court stated that TracFone's customers are obligated to pay the 911 fee because they are CMRS

customers. KRS 65.7629(3) levies the 911 service charge on each CMRS customer within Kentucky regardless of the method of purchasing such service.

The court stated that the 911 service fees are similar to taxes and that interpretation of the CMRS statutes should be in line with the interpretation of tax statutes. To interpret the Kentucky statute to apply only to postpaid providers would be to create an exemption for prepaid providers. Such an exemption is not required by the statute's plain language, and the court did not grant such an exemption.

The 2006 amendments to the relevant Kentucky statutes did not mean that prior to 2006 the law did not require prepaid providers to collect 911 fees from their customers. The amendments only changed the method of collection, not the obligation to collect.

TracFone argued that the CMRS fee is 70 cents per month, but that it does not know if its customers will use their minutes over a week's time or several months. It argued that this means it cannot know how much to collect from its customers. The court held that the difficulty is due to TracFone's own business choices and not to an impossibility of compliance with the law. Those business choices do not alleviate TracFone's obligation to collect the 911 fees.

The court addressed the issue of TracFone having to pay the 911 fees itself rather than collecting them from its 911 customers. The court stated that TracFone had made no attempt to collect the 911 fees from its customers. Had the postpaid providers made no attempt to collect the 911 fees from their customers, the postpaid providers would also have had to pay the fees themselves. Thus, the postpaid and prepaid wireless providers were being treated uniformly.

In 2011, the parties filed new memoranda. The court heard two new issues in the case:[1]

- Whether TracFone could select Option B from KRS 65.7635(1) after the CMRS Board designated Option A as the appropriate 911 fee collection method; and
- Whether the CMRS Board could require TracFone to remit the 911 fees retroactive to the enactment of the 2006 Amendments to KRS 65.7635.

Subsequent to the court's Memorandum Opinion and Order dated August 18, 2010, the CMRS Board and TracFone participated in administrative proceedings before the CMRS Board. The proceedings revealed several additional disputes concerning the statutory requirements of the 2006 amendments to KRS 65.7635(1). One of these was whether the CMRS Board can designate the option that a prepaid provider must use. TracFone requested that the Option C regulation be interpreted as requiring retail merchants to collect the prepaid wireless 911 fees at the point of sale. The CMRS Board moved not to promulgate that proposal as Option C (Commonwealth. Commercial. Meeting). The CMRS Board designated Option A as the appropriate 911 fee collection method for TracFone. TracFone had chosen Option B as its collection methodology. Both the CMRS Board and TracFone moved for summary judgment on this and other remaining issues. In its July 1, 2011, Memorandum Opinion and Order, the court addressed these disputes.

[1]*Commercial Mobile Radio Service Emergency Telecommunications Board v. TracFone Wireless*, Slip Copy, 2011 WL 2610200 (W.D.Ky, July 1, 2011).

The court stated that the 2006 amendments allow the prepaid provider to select any option among the three options provided in the statute, even after a collection method under Option C has been specified. The provider retains all three options for its own election. Thus, even if the CMRS Board determines that Option C uses the same collection method as Option A, TracFone can choose Option B as its collection method.

The next issue was whether the CMRS Board could require TracFone to remit the service fees that would have been due from the 2006 amendments onward. In its August 2010 ruling, the court indicated that TracFone was not so required. In this new ruling, the court stated that the 2006 amendments clarify the requirement that indirect providers are liable for collecting or paying the 911 fee. TracFone was aware of its obligation to collect or remit the fees, even if Option C had not been defined. Therefore, TracFone is liable for the 911 fees from the date of enactment of the 2006 amendments.

After the court's Memorandum Opinion and Order above, which resolved the last remaining substantive issues, the parties filed memoranda addressing the specific judgment amounts. In *Commercial Mobile Radio Service Emergency Telecommunications Board v. TracFone Wireless*, Slip Copy, 2011 WL 4007668 (W.D.Ky., September 8, 2011), TracFone was ordered to pay unremitted service charges for

- November 2003 until July 11, 2006,
- nondirect sales from July 12, 2006, to June 30, 2011, and
- direct sales from July 12, 2006, to September 14, 2009.

All of the above TracFone opinions are on appeal to the United States Court of Appeals for the Sixth Circuit.