

**Tennessee’s 911 System: Functionality and Funding Adequacy**

**Draft Report for Review and Comment**

DRAFT

## Table of Contents

Tennessee’s 911 System: Functionality and Funding Adequacy .....	5
Consolidation.....	6
Tennessee Emergency Communications Board Membership.....	7
Provider Registration Requirements.....	8
Providers’ Service Interruption Reporting Requirements .....	8
Funding .....	9
The Flat-Fee Structure .....	9
Funding Adequacy .....	10
Rate Increase Authority .....	13
NG911 Effects on ECD Costs.....	13
Maintaining Tennessee’s Award-Winning 911 System.....	14
Is there a need or benefit to consolidate emergency communications districts or PSAPs?.....	19
Tennessee has encouraged consolidation within and among ECDs.....	19
Requiring PSAPs to consolidate has been tried in other states.....	21
There are advantages and disadvantages to consolidation of operations.....	22
Literature tends to recommend creating incentives for consolidation over requiring it.....	22
Tennessee’s ECD directors are generally not supportive of district consolidation but are supportive of PSAP consolidation.....	23
Should the board membership of the state emergency communications board be amended to include other stakeholders such as telecommunications providers, emergency communications districts that dispatch, and other interested parties? .....	23

Other states have a wider variety of stakeholders serving on their state 911 boards than Tennessee does. .... 25

Stakeholders’ opinions about adding state board members are mixed..... 26

Is there a need or benefit for the providers of communications services to register with the board prior to providing service? ..... 26

Is there a need or benefit for providers of communications services to notify the board when there is a known service interruption?..... 27

Public Chapter 795 Created a Single 911 Rate ..... 29

    Before Public Chapter 795, Acts of 2014, went into effect, the 911 system was funded by a two-tiered model. .... 29

    Now the state’s 911 system is primarily funded with a monthly \$1.16 fee levied on wireless, prepaid wireless, wireline, and VoIP services. .... 32

Is the 911 surcharge generating adequate revenue to cover the costs of the services, equipment, maintenance, and improvements needed to provide a uniform, stable, and effective statewide 911 system?..... 35

    Including Depreciation Expense when Evaluating Financial Status of Districts ..... 38

    Other distribution models ..... 40

    It is difficult to determine what is adequate funding for the ECDs because there is disagreement over what ECDs should pay for..... 40

Is the 911 surcharge generating more revenue than necessary to implement the purpose of this act and can it be reduced to the benefit of communications consumers?..... 44

Is a flat rate communications services surcharge the best manner in which to fund 911 system costs, or should such costs be funded by a percentage surcharge or a different source, such as water service, electric power service, or state general funds or local taxes?..... 44

    Alternative methods for funding 911 are used in a few states..... 45

Is there a need or benefit for the board to have the ability to raise the 911 fee rate should there be a financial reason to do so? ..... 48

Has the expansion of 911 system functionality resulting from implementation of IP-based next generation 911 technology increased or decreased costs for emergency communications districts? .....	50
References .....	55
Persons Interviewed .....	58
Appendix A: Public Chapter 795, Acts of 2014.....	A-1
Appendix B: TECB Policy 9: District Minimum Technical Operating Standards .....	B-1
Appendix C: Commission Survey Forms.....	C-1
Appendix D: Tennessee Local Wireline Rates as of May 2014.....	D-1
Appendix E: E-911 Fees by State, as of February 2017 .....	E-1
Appendix F: ECD Populations and Base Distribution Amounts Before and after Increases went into Effect .....	F-1
Appendix G: TECB Policy 6: Financially Distressed Districts.....	G-1
Appendix H: ECDs' Change in Net Position Not Including Depreciation as an Operating Expense, 2012-2016 .....	H-1
Appendix I: ECDs' Change in Net Position including Depreciation as an Operating Expense, 2012-2016 .....	I-1
Appendix J: TECB Revenue Standards.....	J-1
Appendix K: Guiding Principles for Funding 911 from the FCC, NENA, NASNA, and the National Wireless Association (CTIA) .....	K-1

## Tennessee's 911 System: Functionality and Funding Adequacy

911 services are integral to public safety in the United States—people rely on calling 911 when they have an emergency requiring a quick response. As telecommunications technology continues to rapidly evolve, 911 systems nationwide must keep pace with the changes and upgrades. Tennessee is considered a national 911 leader and continues to respond to changes to maintain its effective and award-winning system. It is currently transitioning to an internet-based system called Next Generation 911 (NG911). To help emergency communication districts (ECDs) upgrade and address concerns about the changes, the General Assembly passed Public Chapter 795, Acts of 2014, replacing the 911 funding system that relied on state and local fees to fund 911 services with a flat statewide fee on all types of telecommunications services and a new method for distributing funds. The Act also directed the Tennessee Advisory Commission on Intergovernmental Relations (the Commission) to study nine questions, including

- one dealing with consolidation:
  - whether there is a need or benefit to consolidate emergency communications districts or public safety answering points;
- one dealing with Tennessee Emergency Communications Board (TECB) membership:
  - whether the board membership of the state emergency communications board should be amended to include other stakeholders such as telecommunications providers, emergency communications districts that dispatch, and other interested parties;
- one dealing with providers' registration requirements:
  - whether there is a need or benefit for the providers of communications services to register with the board prior to providing service;
- one dealing with providers' service interruption reporting requirements:
  - whether there is a need or benefit for providers of communications services to notify the board when there is a known service interruption; and
- five dealing with funding:
  - whether a flat rate communications services surcharge is the best manner in which to fund 911 system costs, or whether such costs should be funded by a percentage surcharge or a different source, such as water service, electric power service, or state general funds or local taxes;

- whether the 911 surcharge is generating more revenue than necessary to implement the purpose of this act and can be reduced to the benefit of communications consumers;
- whether the 911 surcharge is generating adequate revenue to cover the costs of the services, equipment, maintenance, and improvements needed to provide a uniform, stable, and effective statewide 911 system;
- whether there is a need or benefit for the board to have the ability to raise the 911 surcharge rate should there be a financial reason to do so; and
- whether the expansion of 911 system functionality resulting from implementation of IP (internet protocol)-based next generation 911 technology has increased or decreased costs for emergency communications districts.

The Act requires the Commission to report its conclusions to the joint committee on government operations on or before September 15, 2017.

### **Consolidation**

Tennessee's 911 system is operated locally by 100 emergency communication districts. Each district has one or more call centers, known as public safety answering points (PSAPs), designated to receive 911 calls and route them, either by dispatching, transferring, or relaying, to emergency services personnel. Eighty-three districts have one PSAP, and 17 have more than one. Although district or PSAP consolidation could possibly result in cost savings and improved service, there is no guarantee that it will. Largely because they believe local knowledge is critical to effective 911 service, Tennessee's ECD directors are generally not supportive of district consolidation but are supportive of PSAP consolidation. However, they emphasize that the decision to consolidate or not should be a local one; the TECB agrees but encourages both PSAPs and ECDs to consolidate and offers financial support up to \$150,000 to each ECD to assist with consolidation. The TECB determines the amount provided to each district on a case-by-case basis after a site visit and analysis. Several reports, including previous Commission reports, recommend encouraging both ECD and PSAP consolidation but not requiring it. For example, the Communications Security, Reliability, and Interoperability Council, a group under the FCC that makes recommendations to the FCC about telecommunications security and reliability, advises in its 2010 report, *Key Findings and Effective Practices for Public Safety Consolidation*: "Incentivizing consolidation will bring more benefit and eliminate more challenges than mandating a consolidation."

Looking at other states offers no examples of ECD consolidation but does offer several examples of attempted PSAP consolidation. Four states—Oregon, Maine, Indiana, and Illinois—have passed laws requiring PSAP consolidation and have had mixed success. In 2001, Oregon tried to require all PSAPs to consolidate into one PSAP per district or county, but a local backlash in opposition to forced consolidation led to a repeal of the requirement just two years later. Maine set a maximum number of primary PSAPs in 2003, but because towns maintained their own dispatch centers, few savings resulted and more calls were transferred, which leads to increased response times and potential for error. Indiana and Illinois recently required PSAPs to consolidate into two PSAPs in an ECD or reduce the number of PSAPs in an ECD by half. Though consolidations have moved forward in these states, there has also been some resistance from local districts.

Because of variation in local jurisdictions and the mixed success of mandated consolidation in other states, ECDs and PSAPs should not be required to consolidate. But similar to recommendations by the Commission in its previous reports, the **TECB should continue its education efforts on the potential benefits of ECD and PSAP consolidation and continue to encourage ECD consolidation, when the local jurisdictions find it makes sense, through the reimbursement of associated costs.**

### ***Tennessee Emergency Communications Board Membership***

The TECB has authority to exercise operational and financial oversight over ECDs and establish technical and operational standards. The board's membership is outlined in Tennessee Code Annotated, Section 7-86-302, and is comprised of nine members. Five of the nine members are required to be ECD 911 directors or board members—currently the five districts represented on the board all not only take calls but also dispatch emergency responders. The other four required members are one city and one county government representative, the Comptroller of the Treasury or designee, and one member who is not associated with ECDs. Other states require other groups of stakeholders on their boards, including service providers and dispatchers.

Opinions about who should serve on the board are mixed. Twenty-seven of 71 (38%) ECD directors who responded to a 2016 Commission survey did not agree that board membership should be changed to include other stakeholders. Seventeen (24%) agreed that the membership should be changed to require other stakeholders such as ECDs that dispatch. Some service providers have said they would like provider representation on the board, but in interviews, some ECDs directors said they think providers would have a conflict of interest. TECB staff thinks the board is working well with the current membership but did not take a position on new members. **There is no consensus recommendation on changes to board membership.**

## ***Provider Registration Requirements***

State law already requires telecommunications service providers to register with the state, so an additional registration requirement is not necessary. In 2012, the state passed the “Kelsey Smith Act”, requiring wireless telecommunications service providers to disclose call location information at the request of an investigative or law enforcement officer and requiring the Department of Commerce and Insurance to obtain contact information from all wireless providers. The Department of Commerce and Insurance designated the TECB, which is part of the Department, to receive the information. To comply with the law, the TECB established rules requiring all wireless providers to submit contact information to the TECB for the purpose of facilitating requests from law enforcement agencies for call location information.

Further, beginning July 1, 2017, Public Chapter 1047 requires all telecommunications service providers to remit all 911 surcharges they collect to the DOR. The DOR is required to establish registration procedures for the people who provide communications services similar to the procedures in the Retailers Sales Tax Act. The sales tax act requires people conducting business in the state to register with the state and provide the name under which they will be doing business and their business location. The TECB staff and ECDs agree that it is important for all service providers to register with the state to ensure they are able to connect to 911.

## ***Providers’ Service Interruption Reporting Requirements***

During a large AT&T service interruption in March 2017, TECB staff first learned about the outage when districts started notifying them nearly 30 minutes after it occurred. AT&T released a statement notifying the public two hours later. Although in some cases AT&T and other providers are required to report disruptions affecting 911 facilities to the Federal Communications Commission (FCC) and PSAPs, they are not required to report them directly to the state, and in this instance, AT&T did not.

Service providers have mixed opinions about whether they should be required to report service interruptions to the state, but TECB staff says that if they were notified about service interruptions, they could automatically reroute calls to a PSAP’s administrative lines or a neighboring district, depending on what the PSAP prefers. They could also work with the district, and possibly TEMA, to notify the public that 911 in that area is down and provide alternative emergency numbers. In response to the Commission survey, 67 of 71 (94%) ECD directors said they support the idea. While no states specifically require providers to report service interruptions to their 911 board, six do require them to report outages to state public utility commissions. **Because TECB would be able to better assist ECDs when interruptions occur if they knew about**



**them sooner, telecommunications service providers should be required to notify the TECB when there are service disruptions.**

## ***Funding***

The five remaining questions that Public Chapter 795 requires the Commission to study relate to 911 funding, with the issues including alternatives to the flat rate fee model, the adequacy of revenue—including whether the single rate fee amount could be decreased without hurting service, who should have the authority to make rate increases, and the effect of NG911 implementation on district costs. Prior to 2015, the 911 system in Tennessee was funded with a combination of local and state fees. Local governments set their own wireline rates up to allowable maximum amounts set in statute, and the state had authority to charge and collect a statewide fee on wireless and internet-based phone service, known as voice-over-internet protocol (VoIP). Increases in the wireless fee could be determined by the TECB but had to be ratified by a joint resolution of the General Assembly.

Public Chapter 795, Acts of 2014, effective January 1, 2015, replaced the local and state rates with a statewide \$1.16 fee on all telecommunications service that can connect with 911. The TECB distributes revenue from the flat fee to the ECDs in an amount “equal to the average of total recurring annual revenue the district received from distributions from the board and from direct remittance of 911 fees for fiscal years 2010, 2011, and 2012,” which includes both the state wireless fee and the local wireline fees. The law includes a provision that the distribution to any ECD will not be less than the amount of revenue it received in fiscal year 2012. Districts with wireline rates less than the allowable local fee before July 1, 2011, could request an increase in their base funding amount. Every district that was not charging the maximum rate by that date—55 districts—requested and received an increase that was effective July 1, 2016. Public Chapter 795 mandates that the TECB give at least 50% of any revenue in excess of its annual fiscal requirements, including the base amount distribution, to the ECDs. The TECB exceeded this in 2016, distributing 100% of the excess revenue to the ECDs. Excess revenue is distributed to districts in an amount equal to each district’s proportionate share of the base funding.

## **The Flat-Fee Structure**

Almost every other state uses a similar fee on telecommunication services to fund 911, setting fees at the state or local level, or both. Like other 911 funding methods, the telecommunication service fee has advantages and disadvantages. The main advantages of using the flat fee method are that it is easily understood, acceptable to

policy makers, and used almost universally. One disadvantage is that the model could become ineffective as technology changes.

Similar to Tennessee's previous system, some states have tiered fee systems, setting fees at both the state and local levels, instead of one statewide fee. Four of the 22 states that have statewide 911 fees set by their state legislatures give local governments the authority to add local fees to the state fees. Eleven states have fees set by both the state and local governments. For example, wireless rates could be set by the state while local governments set wireline rates. In its 2006 report *Emergency Challenge: A Study of E-911 Technology and Funding Structure in Tennessee*, the Commission suggested allowing ECDs to use local surcharges to fund operations "above and beyond the minimum standards funded by the state fee." However, although this model gives local jurisdictions more discretion to adjust their rates, it creates more complexity and variation across the state. In Tennessee, service providers prefer a statewide flat fee to a hybrid system because it is easier for them to collect and remit payments.

A few states use funding methods other than charging a fee on communications services. Some examples are a universal service fee, sales tax on communications services, fees added to property tax bills, special property tax levies, and fees added to utility bills. Like the telecommunications fee, they each have their advantages and disadvantages related to revenue generation, ease of implementation, fairness and equity, legality, and long-term stability of the method. **There is no compelling argument to replace the current flat-fee on telecommunications services with another structure.**

### **Funding Adequacy**

Commission staff estimates show that the new flat rate system is distributing more recurring revenue to the ECDs than the old two-tier system would if it were still being used in fiscal year 2016. Under the old system, an estimated \$70,994,669 would have been generated, after providers retain their administrative fees, from wireline and wireless fees statewide and distributed to the ECDs, excluding non-recurring distributions such as grant funds. This is approximately \$8,947,615 less than what ECDs actually received from the flat rate that year through the base and excess distributions. However, determining whether the flat fee generates adequate revenue for the state 911 system remains a complex question. It depends on whether you consider just funds from the fee or from all revenue and whether you include depreciation and other expenses like dispatch services when looking at district costs. ECDs are funded primarily by revenue from state 911 fees, but they can also receive—and often rely upon—funds from federal, state, and local government sources including the issuance of bonds. Although not as common, they can also receive funds from

private sources. After taking all of this, as well as the continued investment in new technology and equipment by the state and the ECDs into account, **it does not appear that the fee amount could or should be reduced.**

In 2016, 43 districts supplemented TECB distributions with revenue from other local government contributions. Forty-three of 72 (60%) ECD directors responding to the Commission survey did not agree that the base funding distribution was adequate for their district, 16 (22%) agreed, and 13 (18%) were neutral. And in interviews and survey responses, some directors said that in addition to cutting expenses, they are using reserve funds to operate and balance budgets and, as a result, don't have sufficient reserves set aside for future equipment upgrades and replacements. According to 2016 audit data, even when the excess distributions made by the TECB are added to the base amount, 61 (63%) districts would be unable to cover their operating expenses and depreciation without additional local government funding. The inability of some districts to cover all their expenses with fee revenue may be because some fund more things than others. For example some districts pay for dispatch and others don't, and districts' investments in new technology vary by district and from year to year.

When evaluating the financial health of a district, the TECB considers its net position, both including and not including depreciation expenses for equipment. Under Tennessee law, "a 'financially distressed emergency communications district' is a district that, as shown by the annual audits, has a negative change in net position for a period of three (3) consecutive years." A negative change in net position means an ECD operated at a loss during that 12-month period with depreciation included as an operating expense. ECDs determined to be distressed under this criteria are subject to evaluation and supervision by the TECB. During its evaluation of the distressed ECDs, TECB staff first removes the depreciation expense from operating expenses. If after removing depreciation an ECD does not show a negative change in net position, the ECD is no longer considered distressed and is no longer under the supervision of the TECB. If after removing depreciation the change in net position is still negative, TECB staff continues its review and makes a recommendation to the board members about the financial status of the ECD. The board members then designate the ECD as either confirmed distressed or not distressed. If they are confirmed, they are under the supervision of the TECB. If they are not confirmed, the TECB will continue to assist and monitor the ECD as needed until they attain a positive change in net position in an annual audit.

For 2016, when depreciation is not included, just six of the 97 ECDs that submitted an annual audit were unable to cover expenses with revenue from all sources. But when depreciation is taken into account, 32 (33%) ECDs did not have enough revenue to cover

all expenses. Of the 32, sixteen had their first year of negative change in net position, 12 had their second consecutive year, and four had their third consecutive year. At the February 2017 TECB board meeting, three of the latter four ECDs were reviewed, and, after the depreciation expense was removed, were designated not distressed by the TECB. The final ECD will be reviewed and designated either confirmed distressed or not distressed at the next TECB meeting.

Even if it was deemed necessary for the state to raise the flat fee rate, simply doing so across the board would not be a solution for all ECDs with revenue shortfalls. This is because the current distribution model, which is based on the fee revenue districts received in 2012, favors districts already receiving the greatest proportion of revenue. Using the current distribution method to create a scenario where every ECD showed a positive change in net position when including depreciation as an operating expense and all revenue sources, in fiscal year 2016, the fee would have to be increased 77 cents, from \$1.16 to \$1.93, generating \$68,081,638 statewide, far more than the \$3,529,365 needed to bring the 32 districts into a positive net position. When not including depreciation as an operating expense, six districts had a negative change in net position—to bring these six into a positive net position would require \$553,172. But under the current distribution, the fee would have to be increased 57 cents, bringing it to \$1.73, generating \$50,398,095 statewide. When considering all sources of funding, most systems don't need an increase. Keeping the current fee and using alternative distribution methods such as distributing all the revenue based on call volume, base distribution plus call volume, and base distribution plus population also would not have ensured that all ECDs are in better financial positions. Under these models, a few ECD distribution amounts would have increased but most would have decreased.

The Commission suggested in its 2006 report that if local fees were insufficient to cover minimum standards, an advisory committee could look at linking distribution of the state fee to cost components developed using technology and staffing operational standards. The report suggested that if the state fee is going to be raised, the state should first determine what 911 functions the fee should cover. This idea is similar to the state's Basic Education Program (BEP) funding formula consisting "of 45 components that have been deemed necessary for a school district to provide a basic level of education." The BEP cost components serve as the basis for calculating the level of funding for each school system but does not prescribe specific levels of expenditures for individual components. "The formula represents a continuing effort to determine the most appropriate levels of funding and the proper components for the BEP."

Building on this earlier recommendation, **the TECB could tie the distribution of any additional revenue generated by rate increases to a standard set of cost components.**

The cost components for providing a minimum standard of 911 services could be developed with input from the existing TECB operations and technical committees using minimum technical operating standards and should be reviewed regularly. The method would determine and distribute funding to ECDs, but ECDs would have flexibility with spending as long as they meet the minimum technical operating standards. This distribution method would only apply to revenue generated by the rate increase and not to the base amounts.

### **Rate Increase Authority**

The TECB can recommend a rate increase, but as under the previous law, the increase has to be ratified by a joint resolution of the General Assembly, and the TECB can still reduce the rate without ratification by the state legislature. **There is no consensus that the TECB should have authority to raise rates without state legislative approval.** Most ECD directors, 59 of 71 (83%) who responded to the Commission survey, agreed that the TECB should have rate-setting authority, arguing that the state board understands the challenges of providing 911 services and that given the authority could more quickly adjust rates if needed. But TECB staff and providers prefer the legislature set the rate, and some providers stipulate that if the TECB were given the authority to set it they would want to be represented on the board. Of the 29 other states that levy a statewide 911 fee on telecommunications services, state legislatures in 22 of them set their rates. Other boards set rates in seven states, other state-level utility boards set them in three states, and 911 boards set them in four states.

### **NG911 Effects on ECD Costs**

Finally, Tennessee's transition to the NG911 network could affect ECDs expenses. NG911 is moving the 911 system onto the internet so in the future it will be able to receive texts, photos, videos, and other forms of data. Tennessee began moving its 911 system onto the internet-based NG911 network several years ago and anticipates completing the transition by 2018. As of April 2017, all 142 primary PSAPs were receiving calls through NG911 and 100 were "live", or completely NG911 compliant, on the network. PSAPs that are not fully compliant need to convert the calls they receive through NG911 back to analog format. Fifty-four ECDs are fully compliant, and 17 are partially compliant, meaning some of their PSAPs are "live" and some are not. The other 29 do not have PSAPs that are "live" yet. **Because NG911 is not fully implemented yet in Tennessee, it is unclear if statewide implementation has substantively affected the expenses of ECDs.**

## Maintaining Tennessee’s Award-Winning 911 System

Since the 1960s, when the idea of the universal emergency phone number, 911, was first recommended in the United States, the 911 system has become integrated into our communities and expectations about public safety. 911 is a critical part of public safety—it provides people with a way of reporting emergencies so emergency response agencies can assist—and when people call 911 they expect a quick response. The National Association of County Officials, in its 2017 paper *Calling 911: Funding and Technological Challenges of County 911 Call Centers*, said “The quickest way to receive assistance from public safety officials is by dialing 911.” Over the years, as technology has continually evolved, 911 systems across the country have been challenged to adapt and upgrade, and pay for the changes. One key example is the upgrade to enhanced 911, or E-911, that was needed as technology transitioned from landline to wireless phone service. E-911 systems provide the location of the caller and a call-back number for 911 calls from wireless phones. The next big upgrade for the 911 community is the shift from analog to digital systems, known as Next Generation 911 (NG911), to allow for new types of data exchange and communication, such as texting and internet-based calls.

Recognizing the need for 911 service and its role throughout the state, with passage of Public Chapter 867 in 1984, the Tennessee General Assembly authorized the creation of emergency communications districts (ECDs) and a local funding mechanism. Currently, 100 ECDs serve their local jurisdictions delivering 911 services across the state, mostly covering county areas. A local board of directors governs each ECD, and although the law defines them as municipalities, the ECDs cannot levy or collect taxes<sup>1</sup> but could levy a surcharge or fee on telephone services to fund 911 service.<sup>2</sup> Each district has one or more call centers, known as public safety answering points (PSAPs), designated to receive 911 calls and route them to emergency services personnel.<sup>3</sup> PSAPs also receive non-911 calls through their administrative lines. Currently there are 142 PSAPs in the state that receive 911 calls, called primary PSAPs, and a number of secondary PSAPs, which are often backup centers or centers where calls are transferred from primary PSAPs.<sup>4</sup> Figure 1 shows the basic structure of Tennessee’s 911 system.

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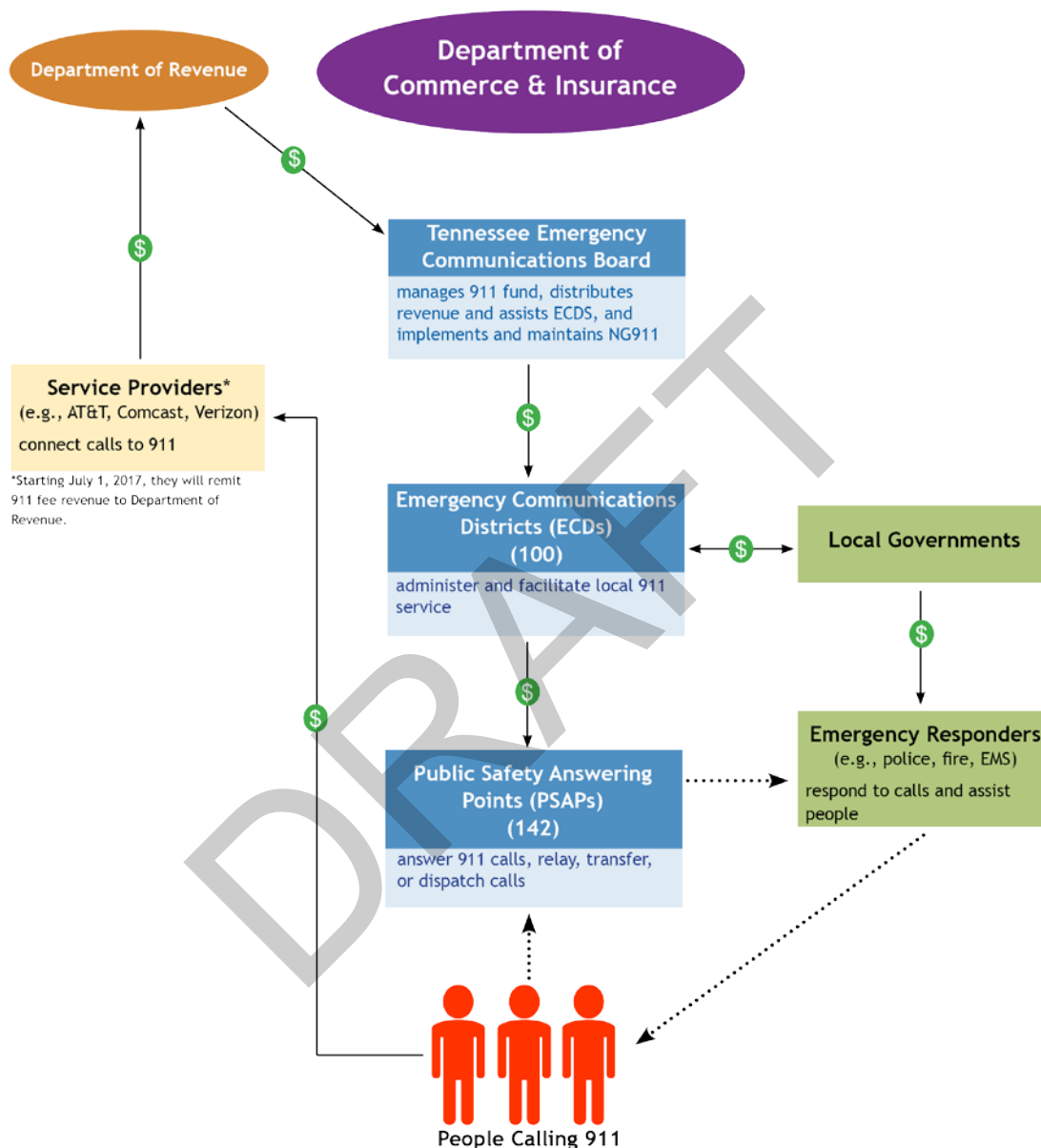
<sup>1</sup> Tennessee Code Annotated, Sections 7-86-105 and 106.

<sup>2</sup> Tennessee Code Annotated, Section 7-86-108, repealed.

<sup>3</sup> Tennessee Code Annotated, Section 7-86-103(18).

<sup>4</sup> Tennessee Advisory Commission on Intergovernmental Relations 2011.

Figure 1. Tennessee 911 System



Source: Based on information compiled by TACIR staff from interviews, Tennessee Code Annotated, and the Tennessee Emergency Communications Board 2016 annual report.

Tennessee is recognized as a national 911 leader. In 2005, it became the third state to provide E-911 service, meaning all PSAPs in the state were able to provide the approximate latitude and longitude and call-back number of callers from wireless and internet based, called voice-over-internet protocol (VoIP), devices.<sup>5</sup> VoIP “allows callers to use a broadband internet connection, instead of traditional phone lines, to make voice calls.”<sup>6</sup> In 2017, the state board overseeing 911 operations, the Tennessee Emergency Communications Board (TECB), received the “Outstanding 911 Call Center/Program Award” from the NG911 Institute and the 911 Education Foundation’s (a non-profit subsidiary of the Industry Council for Emergency Response Technologies) inaugural “Leading the Way Award”, both in recognition for its progress towards statewide implementation of its NG911 network. It also received a national award in 2016 from Esri, the leading Geographic Information System (GIS) software company, for its achievement and leadership through GIS technology and the State/Regional 911 Program Award in 2005 from the E911 Institute.<sup>7</sup>

But while Tennessee is leading the way, technology continues to change quickly, posing a challenge to adapt to the evolution of telecommunications and fund the E-911 system. New ways of communicating, such as making calls using VoIP and texting, provide more ways to access to 911 and can help improve emergency response, but also require the state and ECDs to evolve along with the technology. Figures 2 and 3 show wireless, wireline, and VoIP trends in Tennessee from 2008 to 2015. Moving from traditional analog phone lines, to digital broadband network telecommunications is the next technology shift that the state is addressing with the implementation of the NG911 network—moving 911 to the internet.

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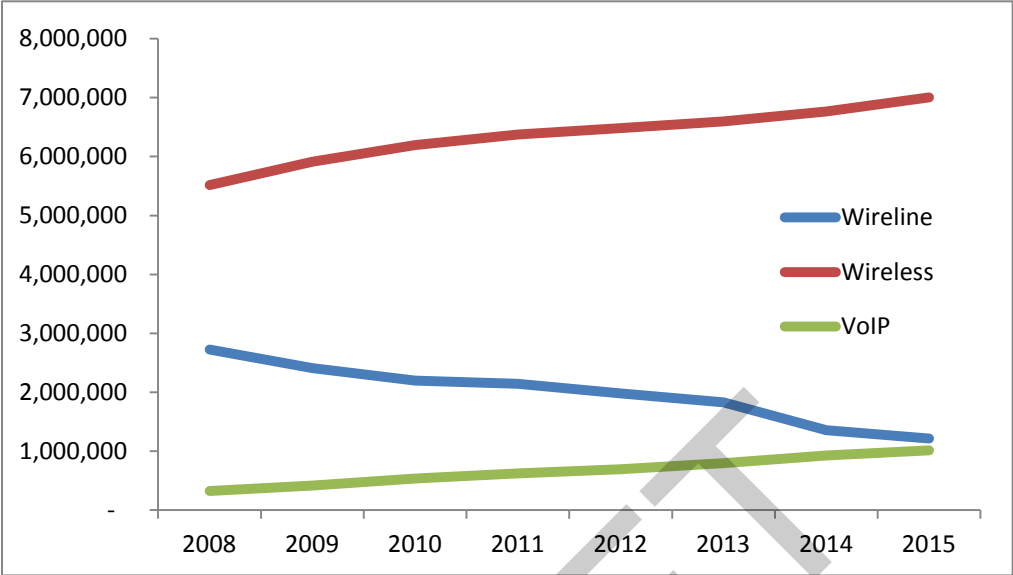
<sup>5</sup> Blasingame et al. 2010.

<sup>6</sup> The Colorado Legislative Council 2017.

<sup>7</sup> Emails from Curtis Sutton, executive director, Tennessee Emergency Communications Board, March 23 and April 2, 2017. See also <https://www.tn.gov/commerce/news/49051>; <http://www.tn.gov/news/49953>; and <http://www.tn.gov/commerce/news/43527>.



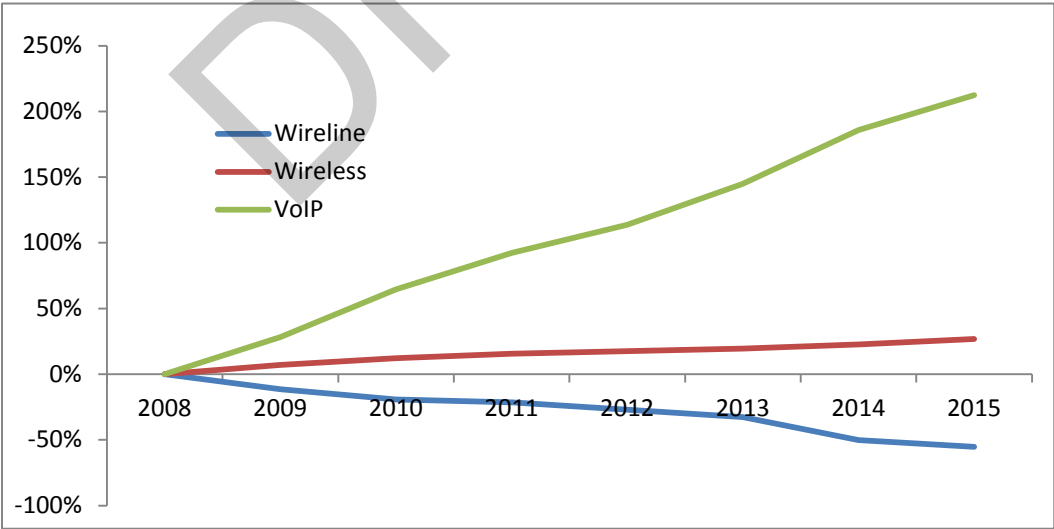
**Figure 2. Number of Wireline, Wireless, and VoIP Subscribers in Tennessee, 2008-2015**



Commission staff created the graph based on FCC data.

Source: Federal Communications Commission “Local Telephone Competition Reports” and “Voice Telephone Services Reports”. See <https://www.fcc.gov/general/local-telephone-competition-reports> and <https://www.fcc.gov/voice-telephone-services-report>.

**Figure 3. Percent Change of Wireline, Wireless, and VoIP Subscribers in Tennessee, Compared to 2008**



Commission staff created the graph based on FCC data.

Source: Federal Communications Commission “Local Telephone Competition Reports” and “Voice Telephone Services Reports”. See <https://www.fcc.gov/general/local-telephone-competition-reports> and <https://www.fcc.gov/voice-telephone-services-report>.

ECDs also need to plan for the future and fund equipment that can respond to rapidly emerging technologies. Since 1984, ECDs had relied mainly on revenue generated locally from 911 charges on wireline phones and some wireless revenue collected by the TECB. The clear trend away from wireline to wireless service raised concerns about the revenue sources and the need to update the funding mechanism to help districts continue to provide reliable and effective 911 services. To address concerns and help districts respond to challenges, the General Assembly passed Public Chapter 795, Acts of 2014, which changed the two-tiered method for funding the 911 system by creating a flat statewide fee and a new method for distributing funds to the ECDs. The Act also directed the Tennessee Advisory Commission on Intergovernmental Relations (the Commission) to study nine questions, including

- one dealing with consolidation:
  - whether there is a need or benefit to consolidate emergency communications districts or PSAPs;
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- whether there is a need or benefit for the board to have the ability to raise the 911 surcharge rate should there be a financial reason to do so; and
- whether the expansion of 911 system functionality resulting from implementation of IP (internet protocol)-based next generation 911 technology has increased or decreased costs for emergency communications districts.

The Act requires the Commission to report its conclusions to the joint committee on government operations on or before September 15, 2017. See appendix A for a copy of the Act.

### ***Is there a need or benefit to consolidate emergency communications districts or PSAPs?***

The ECDs that deliver Tennessee's 911 system decide how they operate, as long as the districts and their PSAPs meet minimum technical operating standards. TECB's Policy 9, included as appendix B, establishes the minimum standards to "ensure continuity of 911 operations and compatibility for connectivity to the statewide next generation 911 ("NG911") infrastructure," including E-911 service, GIS mapping systems capabilities, notice of outages, backup power, plans for rerouting 911 calls, and PSAP relocation. Because of the discretion they are allowed, the ECDs' size and operational structure, including the number of PSAPs, how they dispatch, and how they work with local governments, vary widely across the state. For example, Shelby County, the largest ECD, has several primary PSAPs because of the size of the jurisdiction and complexity of agencies involved with emergency response. In contrast, a smaller district such as Dickson County, has one PSAP that takes all 911 calls and dispatches. Both ECDs believe their system works best for delivery of 911 services in their area. Eighty-three districts have one PSAP while 17 have more than one.

### **Tennessee has encouraged consolidation within and among ECDs.**

Since 1998, the General Assembly has encouraged consolidation of districts and PSAPs. Tennessee Code Annotated, Section 7-86-105(b)(7), establishes the policy in statute: "It is the public policy of this state to encourage the consolidation of emergency communications operations in order to provide the best possible technology and service to all areas of the state in the most economical and efficient manner possible." The law prohibits the creation of new ECDs within the boundaries of an existing one. TECB promotes district consolidation by offering financial assistance up to \$150,000 for each

consolidating district with a three district maximum. The amount provided to each district is “determined on a case-by-case basis after a site visit and analysis by the Board or its designee(s).”<sup>8</sup> Overton and Pickett counties, the only ECDs that have consolidated, merged in 2001 because Pickett County ECD was financially distressed and approached Overton County ECD. The TECB provided funds for updated equipment in a consolidated center, and the consolidation has provided improved service for both counties because they both wanted it and worked together.<sup>9</sup> The TECB is also supportive of consolidation of PSAPs and services, such as call taking, dispatch, and GIS mapping, within districts but believes it should be a local decision.<sup>10</sup> In fact, many districts in Tennessee have already consolidated PSAPs or services,<sup>11</sup> or are working towards it—in 2010 Commission staff reported that Tennessee’s ECDs operated 163 PSAPs,<sup>12</sup> in 2011 it reported 157,<sup>13</sup> and in 2017 the TECB reported 153 PSAPs.<sup>14</sup> L.R. Kimball, a consulting firm that specializes in public safety and wireless communications, advises in its publication “Targeted Results for Emergency Communications Consolidation,” that “consolidation should be approached on a case-by-case basis and only after the completion of a comprehensive feasibility study.” Figure 4 lists some principles ECDs should consider when looking at consolidation.

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<sup>8</sup> Tennessee Emergency Communications Board 2015.

<sup>9</sup> Tennessee Advisory Commission on Intergovernmental Relations 2011.

<sup>10</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, October 4, 2016.

<sup>11</sup> Phone conversation with Jamison Peevyhouse, director, Weakley County 911 Communications Center November 15, 2016.

<sup>12</sup> Blasingame et al. 2010.

<sup>13</sup> Tennessee Advisory Commission on Intergovernmental Relations 2011.

<sup>14</sup> Email from Curtis Sutton, executive director, Tennessee Emergency Communications Board, April 4, 2017.

#### Figure 4. Guiding Principles for Determining Whether Consolidation is a Good Idea

- Does your county, jurisdiction, or region have multiple emergency communications centers? Do they typically interact with each other?
- Have government officials or emergency communications managers ever expressed an interest in consolidating?
- Is there a history of intergovernmental cooperation or shared services among or within jurisdictions serving or adjoining your region?
- Is coordination challenging among first responders being served by multiple communication centers?
- Has your jurisdiction experienced an incident where uncoordinated efforts played a part in delayed response time or a poor outcome?
- Are there multiple emergency communications centers within or among jurisdictions that are operationally and technologically deficient and struggling to provide services?

Source: L.R. Kimball. "Targeted Results for Emergency Communications Consolidation."

#### **Requiring PSAPs to consolidate has been tried in other states.**

Other states have tried to mandate consolidation of PSAPs. Four states, Oregon, Maine, Indiana, and Illinois, have passed laws requiring PSAP consolidation with mixed success. Oregon passed a law in 2001 requiring PSAPs in multi-PSAP districts to consolidate into one PSAP per district, but a local backlash in opposition to forced consolidation led to a repeal of the requirement just two years later.<sup>15</sup> Maine passed a law in 2003 that set the maximum number of primary PSAPs in the state between 16 and 24, and some PSAPs had to consolidate as a result of the change in the law.<sup>16</sup> But in a 2013 policy brief, *Saving Costs through Regional Consolidation: Public Safety Answering Points in Massachusetts*, the New England Public Policy Center reported that because towns maintained their own dispatch centers, few savings resulted, and more calls were transferred, which leads to increased response times and potential for error.<sup>17</sup> The brief concluded that "by more closely tying dispatch and primary PSAPs in the legislation or by using cost pressures to encourage voluntary consolidation of both primary PSAPs and dispatch operations, the state might have achieved more significant savings and better service quality." Indiana and Illinois recently passed laws requiring PSAPs to consolidate. In Illinois, PSAPs are required to combine into two per ECD or to reduce

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<sup>15</sup> Rasmussen 2012.

<sup>16</sup> 25 Maine Revised Statutes Annotated 2926 and Bowley 2010.

<sup>17</sup> Kodrzycki and Cools 2013.

the number of PSAPs in an ECD by half.<sup>18</sup> In Indiana there can be no more than two PSAPs per county.<sup>19</sup> Both laws include a few minor exceptions. Though consolidations have moved forward in these states, there has also been some resistance from local districts.<sup>20</sup>

### **There are advantages and disadvantages to consolidation of operations.**

Although improving service should be the main motivation to consolidate, cost savings is one potential advantage. The literature, including the Commission's 2006 *Emergency Challenge: A Study of E-911 Technology and Funding Structure in Tennessee* report and 2010 *E-911 Emergency Communications Funding in Tennessee* staff report, says that the opportunity to cut costs comes through economies of scale, specifically through reduction in personnel and replacement of expensive equipment. Other advantages include standardized training and expanded career opportunities for employees, lower response times, increased collaboration, reduction or elimination of calls between PSAPs, and increased ease of meeting minimum staffing requirements. The main concerns and disadvantages include perceived loss of control, dispatcher unfamiliarity with the area, elimination of job positions, potential expensive one-time costs, and uncertain cost savings that might not occur for several years, as well as staff concerns about job security, pay, and benefits.<sup>21</sup>

### **Literature tends to recommend creating incentives for consolidation over requiring it.**

Several reports also recommend encouraging consolidation with incentives rather than mandating it. In a 2010 Communications Security, Reliability, and Interoperability Council report, *Key Findings and Effective Practices for Public Safety Consolidation*, the Council advises: "Incentivizing consolidation will bring more benefit and eliminate more challenges than mandating a consolidation." There are a few ways to create incentives, but according to the New England Public Policy Center 2013 policy brief, the two most effective ways are to require PSAPs to meet quality standards and to establish financial incentives. Essentially, cost pressures can be used to encourage voluntary consolidation. In its 2006 report on E-911 technology and funding, the Commission also

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<sup>18</sup> 50 Illinois Compiled Statutes 750/15.4a and 50 Illinois Compiled Statutes 750/99. The consolidations must be completed by July 1, 2017, and on that date the statute section mandating the consolidation will be repealed.

<sup>19</sup> Burns Indiana Code Annotated 36-8-16.7-47.

<sup>20</sup> Bustos 2017 and Smothers 2017.

<sup>21</sup> Governor's Work Group on PSAP Consolidation 2009, L.R. Kimball 2013, Rasmussen 2012, Task Force on Optimal PSAP Architecture 2016, and Working Group #1A 2010.

recommended continuing education efforts and encouraging ECD and PSAP consolidation, but did not recommend requiring it. The 2010 Commission staff report on E-911 funding also recommended encouraging consolidation through the reimbursement of associated costs.

**Tennessee’s ECD directors are generally not supportive of district consolidation but are supportive of PSAP consolidation.**

Although opinions vary about the most effective structure of an ECD, overall, ECD directors strongly agree with the TECB that district or PSAP consolidation should be a local choice. In the 2016 Commission survey of ECD directors, 43 of 71 (61%) respondents did not agree that there is a need or benefit to consolidate districts, while 14 (20%) agreed, and 10 (14%) were neutral. Some said each county should only have one ECD. In survey responses and interviews, directors cite two main reasons for being against consolidation: they feel strongly that local personnel and geographic knowledge of the area are critical to high quality service, and they don’t want staff to lose jobs. One survey respondent commented, “Consolidation beyond the county level will decrease the quality of 911 service.” Opinions about PSAP consolidation within districts are more mixed: 28 (39%) survey respondents did not agree that there is a need or benefit to consolidate PSAPs, 25 (35%) agreed, and 14 (20%) were neutral. And in regards to integrating services, such as call-taking, dispatch, and GIS mapping, 35 (49%) respondents agreed that it was needed or beneficial, two (3%) disagreed, and 24 (34%) were neutral. Several directors and local ECD boards are choosing to combine PSAPs and services within their districts because they believe it will be a more effective operational structure for their district. In the survey, one director said integrating services within ECDs “provides for seamless communications between agencies and departments and decreases call processing times.” See appendix C for a copy of the Commission survey forms.

***Should the board membership of the state emergency communications board be amended to include other stakeholders such as telecommunications providers, emergency communications districts that dispatch, and other interested parties?***

The Tennessee Emergency Communications Board (TECB) was created in 1998 by Public Chapter 1108 to assist the ECD “boards of directors in the areas of management, operations, and accountability, and establish(ing) emergency communications for all citizens of this state.”<sup>22</sup> The state board is authorized to exercise operational and financial oversight over ECDs, provide substantial technical and financial assistance,

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<sup>22</sup> Tennessee Code Annotated, Section 7-86-302(a).

and establish and implement technical and operational standards.<sup>23</sup> A key purpose of the TECB was to implement and fund wireless E-911 service across the state, as required by the Federal Communications Commission's (FCC) 1996 order that wireless access to 911 be at the same level as wireline.<sup>24</sup>

The board, which was reorganized in 2015 by Public Chapter 350, includes nine members, five of whom are required to currently be ECD 911 directors or board members, and these five currently represent boards that provide dispatch.<sup>25</sup> The nine required voting members are appointed as follows:

- The Governor appoints four members: one member who has no connection to ECDs and three local ECD directors or board members—one from each grand division;
- The Speaker of the Senate appoints one county government representative and one local ECD director or board member;
- The Speaker of the House appoints one city government representative and one local ECD director or board member; and
- The Comptroller of the Treasury or a designee.<sup>26</sup>

The law also requires those appointing members to “strive to ensure” that the membership represents the diversity of the people and the state, including race, gender, age, geographical and political interests, urban and rural areas, and ECDs that employ both E-911 operators and dispatchers.

The TECB is also required to create committees that support the board, but whose members do not have a vote on the board. The law requires a technical advisory committee comprised of service providers “for the purpose of providing and receiving operational and technical information and advice on all aspects of wireless enhanced 911 service.”<sup>27</sup> The TECB is required to appoint other advisory committees as needed to support the board, and members can include various stakeholders such as local government officials, consumers, 911 service users, and law enforcement, firefighting, and emergency medical services personnel.<sup>28</sup> According to its 2016 annual report, the

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<sup>23</sup> Tennessee Code Annotated, Section 7-86-306.

<sup>24</sup> Blasingame et al. 2010.

<sup>25</sup> According to responses from those board members in the 2016 Commission survey.

<sup>26</sup> Tennessee Code Annotated, Section 7-86-302.

<sup>27</sup> Tennessee Code Annotated, Section 7-86-308.

<sup>28</sup> Tennessee Code Annotated, Section 7-86-309.



board's main committees are the operations, policy, technical, and training advisory committees.

**Other states have a wider variety of stakeholders serving on their state 911 boards than Tennessee does.**

Several states include other groups of stakeholders on their boards that Tennessee's board does not. Of 38 state boards with memberships outlined in statutes, 26 include service providers on the board. Of these 26, one state has one provider on the board,<sup>29</sup> eight states have two,<sup>30</sup> five states have three,<sup>31</sup> four states have four,<sup>32</sup> five states have five,<sup>33</sup> two states have six,<sup>34</sup> and one state has eight.<sup>35</sup> The proportion of service providers on other states' boards ranges from 7% to 47%, excluding boards with no service providers. Three states, Illinois, Kansas, and Pennsylvania, specify that the service provider positions are non-voting positions.

Some other state's boards also require members from districts that dispatch. Of the 38 state boards with memberships outlined in statutes, two, Maine and New Hampshire, include districts that dispatch. Maine requires an actual dispatcher to serve and New Hampshire requires a dispatcher representative to serve on its board. Ten other states require Association of Public-Safety Communications Officials (APCO) representatives which could include dispatchers and call takers. One state, New Jersey, requires two members and the rest require one.<sup>36</sup> In Pennsylvania the APCO member is non-voting. Although currently the five 911 representatives serving on the Tennessee state board represent districts that dispatch, it is not required. Other groups that are required by statute to serve on 911 boards in other states but not in Tennessee include police and other law enforcement, firefighters, emergency medical services, information technology experts, National Emergency Number Association (NENA) representatives, and representatives from state agencies like the department of safety.

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<sup>29</sup> Connecticut.

<sup>30</sup> Arkansas, Georgia, Maryland, Michigan, Mississippi, Nebraska, Rhode Island, and South Dakota.

<sup>31</sup> Kentucky, Missouri, Pennsylvania, South Carolina, and Virginia.

<sup>32</sup> Indiana, Iowa, Kansas, and Maine.

<sup>33</sup> Florida, Hawaii, Illinois, New Hampshire, and Washington (at least five).

<sup>34</sup> Alabama and Oklahoma.

<sup>35</sup> North Carolina.

<sup>36</sup> California, Illinois, Iowa, Maryland, Michigan, North Carolina, Pennsylvania, South Dakota, and Washington.

## **Stakeholders' opinions about adding state board members are mixed.**

Ideas vary about which types of groups the state board should represent. Twenty-seven of 71 (38%) ECD directors who responded to the Commission survey did not agree that board membership should be changed to include other stakeholders, and 23 (32%) were neutral. Seventeen (24%) agreed, and most of these think ECDs that dispatchers should be required. Several directors specified in interviews that they think service providers would have a conflict of interest. For example, because AT&T has the contract with the state to manage the NG911 network, its representatives would have conflicts in decisions the board makes affecting the contract with the state.<sup>37</sup> In interviews, providers said it would be beneficial to have at least one seat on the board, and some said that if TECB had the authority to raise the rate without oversight by the state legislature, at least one provider should be on the board.<sup>38</sup> TECB staff did not take a position on whether new members should be added but does think the board is effective with the current membership.

### ***Is there a need or benefit for the providers of communications services to register with the board prior to providing service?***

State law currently requires wireless telecommunications service providers to register with the state. In 2012, the state passed the “Kelsey Smith Act”, which requires wireless telecommunications service providers to provide call location information at the request of a law enforcement agency that is responding to an emergency and requires the Department of Commerce and Insurance to obtain the contact information for all wireless providers operating in the state.<sup>39</sup> The Department designated the TECB, which is part of the Department, to receive the information. In accordance with the law, the TECB passed a rule requiring wireless providers to submit contact information for the purpose of facilitating requests from law enforcement agencies for call location information.<sup>40</sup> The rule requires the board to keep a list of wireless provider contact information on its website and distribute the list quarterly to all PSAPs. Further, beginning July 1, 2017, all communications service providers will remit the state 911 fee

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<sup>37</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, October 4, 2016.

<sup>38</sup> Interviews with Jeff Van Dyke, vice president, governmental affairs, AT&T Tennessee, December 20, 2016; Pam Melton, director of state regulatory and legislative affairs, CenturyLink, December 16, 2016; and Mandy Haynes Young, attorney and lobbyist, Butler Snow, January 6, 2017; and testimony from Levoy Knowles, executive director, Tennessee Telecommunications Association, January 27, 2017.

<sup>39</sup> Tennessee Code Annotated, Section 38-1-602.

<sup>40</sup> Tennessee Emergency Communications Board Rule 0780-06-03-.01.

to the Department of Revenue (DOR). Under the new law, the DOR is required to establish registration procedures similar to the procedures that apply under the Retailers' Sales Tax Act.<sup>41</sup> The sales tax act requires people conducting business in the state to provide the name under which they will be doing business and their business location to the DOR.<sup>42</sup> All communications service providers who connect to 911, in effect, will be required to register with the state before providing service.

Stakeholders are mixed on the need for additional registration requirements. ECD directors strongly support the idea of requiring service providers to register. In response to the survey, 63 of 71 (89%) respondents agreed that registration is important, while none disagreed. One respondent said "Logic would say this should be a given. With the TECB managing the NG911 statewide 911 call delivery system, it should be imperative that a service provider work with the TECB to ensure call delivery and provide 24/7 contact information for troubleshooting. Failure to do so could compromise the life-saving service of 911." TECB staff says it would be helpful to know who is providing service to ensure they are connecting to 911. And although staff would probably have to request registration information from the DOR since the new law does not include any reporting requirements, they have worked well with the DOR in the past and do not foresee any issues with obtaining the information.<sup>43</sup> Service provider representatives are mixed in their opinions on whether or not they should be required to register.<sup>44</sup> Four other states have statutes requiring registration: Connecticut (prepaid), Kansas (wireless), Mississippi (wireless), and South Dakota.

***Is there a need or benefit for providers of communications services to notify the board when there is a known service interruption?***

Federal law requires all regulated telecommunications providers to report information about communications disruptions affecting 911 facilities to the Federal Communications Commission (FCC).<sup>45</sup> Providers must notify the FCC within two

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<sup>41</sup> Tennessee Code Annotated, Section 7-86-128(f)(1).

<sup>42</sup> Tennessee Code Annotated, Section 67-6-602.

<sup>43</sup> Interviews with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 7 and March 14, 2017.

<sup>44</sup> Interview with Mandy Haynes Young, attorney and lobbyist, Butler Snow, January 6, 2017; email from Pam Melton, director of state regulatory and legislative affairs, CenturyLink, January 6, 2017; and testimony from Levoy Knowles, executive director, Tennessee Telecommunications Association, January 27, 2017.

<sup>45</sup> 47 United States Code of Federal Regulations Part 4.

hours if the interruption is at least 30 minutes and affects 30,000 people;<sup>46</sup> in some cases they must also notify PSAPs as soon as possible. The regulations also include a detailed procedure that must be followed when requesting a copy of the reports.<sup>47</sup>

Although providers often voluntarily report outages to the state, Tennessee law does not require that they be reported to the state. For example, during a large AT&T service interruption in March 2017, TECB staff first learned about it when districts started notifying them about 30 minutes after it occurred, and two hours later, AT&T released a statement notifying the public about it.<sup>48</sup> AT&T did not directly contact the TECB. ECD directors and TECB staff agree that it is beneficial when the providers notify the TECB when interruptions occur. TECB staff says it would be immensely helpful if providers reported the same information to the board that they are required to report to the FCC.<sup>49</sup> If they knew about service interruptions they could automatically reroute calls to a PSAP's administrative lines or a neighboring district, depending on what the PSAP prefers. They could also work with the district, and possibly TEMA, to notify the public that 911 in that area is down and provide alternative emergency numbers.<sup>50</sup>

An overwhelming 67 of 71 (94%) survey respondents agree there is a need or benefit for communications service providers to notify the state board when there is a known service interruption, and one survey respondent said, "Without hearing from carriers that they are having a service disruption in our area, the only way ECDs or PSAPs will know of a 9-1-1 outage not associated with the PSAP . . . is when callers successfully reach a telecommunicator to explain they have been attempting to call but have not been able to do so. Mitigation plans cannot be enacted if we discover an outage after it has been resolved." Service providers' opinions, however, are mixed. Some think the current reporting requirement is sufficient, there is not a problem with reporting interruptions, and there doesn't need to be a notification requirement in the state law; others think a reporting process would be appropriate.<sup>51</sup> Six states, Colorado, Maine,

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<sup>46</sup> Email from Curtis Sutton, executive director, Tennessee Emergency Communications Board, April 4, 2017.

<sup>47</sup> 47 United States Code of Federal Regulations Part 4.

<sup>48</sup> Phone conversation with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 14, 2017.

<sup>49</sup> Ibid.

<sup>50</sup> Email from Curtis Sutton, executive director, Tennessee Emergency Communications Board, April 26, 2017.

<sup>51</sup> Interview with Jeff Van Dyke, vice president, governmental affairs, AT&T Tennessee, December 20, 2016; interview with Mandy Haynes Young, attorney and lobbyist, Butler Snow, January 6, 2017; email from Pam Melton, director of state regulatory and legislative affairs, CenturyLink, January 6, 2017; and

North Dakota, South Dakota, Washington, and Wyoming, have administrative rules requiring providers to report outages to their state utilities boards.

## **Public Chapter 795 Created a Single 911 Rate**

The five remaining questions that Public Chapter 795 requires the Commission to study all relate to 911 funding. The issues include the adequacy of revenue from the new single rate, whether the fee amount could be reduced without harming service, alternatives to the flat rate fee model, authority for rate increases, and the effect of NG911 implementation on local district costs. An explanation of the changes made to the previous law will help with understanding the effect the new funding model is having on the issues the Commission is required to address.

**Before Public Chapter 795, Acts of 2014, went into effect, the 911 system was funded by a two-tiered model.**

The 911 funding laws have been adjusted over time as technology and needs have evolved. Figure 5 shows key legislative actions relating to funding the 911 system in Tennessee since 1984 when the creation of emergency communications districts and a funding mechanism were authorized. Beginning in 1998 and continuing until Public Chapter 795 went into effect January 1, 2015, the state had a two-tier 911 funding system with ECDs collecting 911 fees on landline phones, also known as wirelines, and the state collecting fees on wireless phones. All funds ECDs received had to be used for their operations.<sup>52</sup> Each ECD set its local rate up to allowable maximum amounts set in statute: 65 cents per month for residential landlines and \$2.00 per month for business landlines, up to 100 lines.<sup>53</sup> With voter approval by referendum or with approval from the TECB, ECDs could increase the residential rate to \$1.50 and the business rate to \$3.00 per landline. Appendix D shows the ECD local rates as of May 2014.

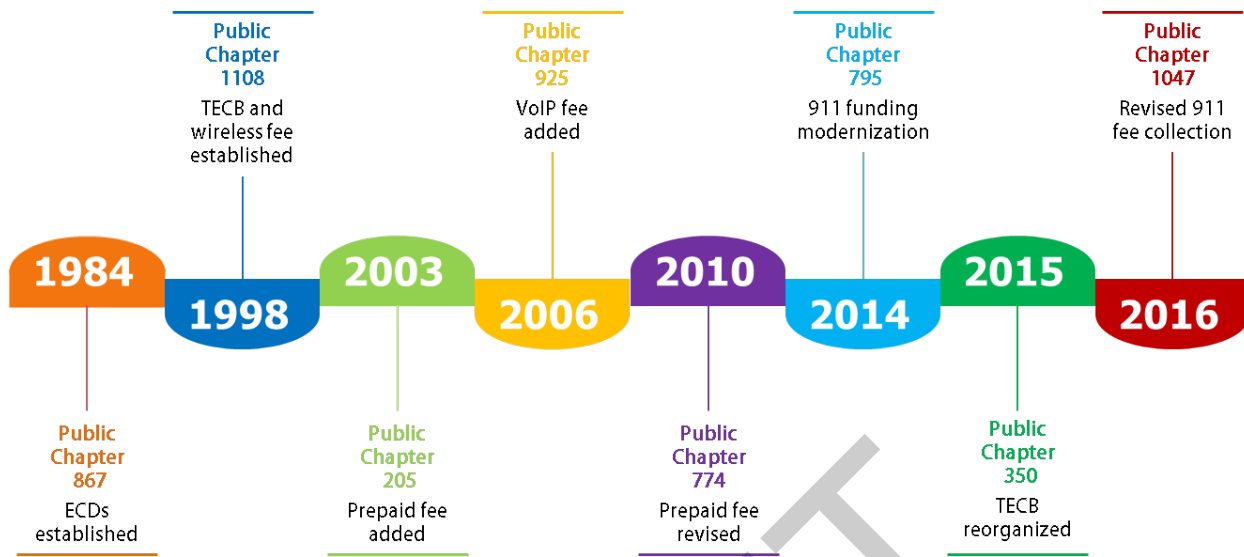
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testimony from Levoy Knowles, executive director, Tennessee Telecommunications Association, January 27, 2017.

<sup>52</sup> Tennessee Code Annotated, Section 7-86-102(d).

<sup>53</sup> Tennessee Code Annotated, Section 7-86-108, repealed.

Figure 5. Key Legislation Relating to 911 in Tennessee since 1984



When Public Chapter 1108 required the creation of a state board in 1998, it also created the 911 Emergency Communication Fund (the Fund) and allowed the TECB to collect a state 911 fee on wireless lines, resulting in the two-tiered model in place until 2015. ECDs were only collecting fees on wireline service, not wireless, and the number of wireline devices was decreasing while the number of wireless devices was beginning to grow rapidly. The TECB charged and collected \$1 per wireless line and never raised the rate,<sup>54</sup> although by law it could charge up to \$3. Increases in the rate could be determined by the TECB but had to be ratified by a joint resolution of the General Assembly; the TECB could reduce the wireless rate without legislative approval as long as it met FCC requirements, covered operating costs, and maintained the solvency of the Fund.<sup>55</sup> All funds collected by the TECB were designated for the Fund and only used for the operational and administrative expenses of the board allowed by law. They were not to revert to the state general fund.<sup>56</sup>

As technologies developed, 911 fees on different types of wireless service were added, all designated for the Fund. In 2003, Public Chapter 205 extended the \$1 fee on wireless service to prepaid wireless phone service, requiring providers to charge and collect it.<sup>57</sup> They could collect the fee from each customer whose account balance was equal to or

<sup>54</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, October 4, 2016.

<sup>55</sup> Tennessee Code Annotated, Section 7-86-108, repealed.

<sup>56</sup> Tennessee Code Annotated, Section 7-86-303.

<sup>57</sup> Tennessee Code Annotated, Section 7-86-108, repealed.

greater than the fee amount, or they could divide the total prepaid wireless telephone revenue received within the month by \$50 and multiply the quotient by the fee amount. The revenue was then remitted to the TECB. The prepaid wireless fee was revised in 2010 by Public Chapter 774. The fee was reduced to 53 cents and was required to be charged on each retail transaction or point of sale.<sup>58</sup> The Act also required the DOR to collect the prepaid revenue from prepaid service retailers and remit it to the TECB. In 2006, Public Chapter 925 amended the law again, applying the existing wireless fee collected by the TECB, to VoIP. Service providers could keep an administrative fee of 3% of all their 911 fee collections.<sup>59</sup>

The TECB was required to deposit all 911 revenue it collected into the Fund and distribute 25% to the ECDs, based on the proportion of each district's population to the state population.<sup>60</sup> After meeting its other fiscal requirements to cover its operational and administrative expenses, implementation of statewide 911 service, and the mandatory distribution, the TECB was allowed to disburse excess funds to the ECDs, as long as the "distribution is possible and practicable," and the solvency of the Fund was secure. To distribute the extra funds to the ECDs, the TECB created grants.<sup>61</sup> For example, the essential equipment grant program, started in 2007, allocated a total of \$150,000 to each ECD and was increased to \$450,000 in 2010. Under the NG911 controller grant program, started in 2010, each ECD was eligible for an allocation of a \$120,000 base amount plus an amount based on population.<sup>62</sup> The controller funding program allotted \$40,000 to each ECD, and the GIS mapping system reimbursement program allotted \$50,000. They also used the excess money to fund other programs, such as the dispatch training and recurring operational programs.<sup>63</sup> Because not all districts have requested their grant funds, some still have funds remaining in their accounts; the TECB plans to distribute any remaining grant funds in each district's account to those districts at the end of fiscal year 2017.<sup>64</sup>

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<sup>58</sup> Tennessee Code Annotated, Section TCA 7-86-128(b)(1), effective July 1, 2011.

<sup>59</sup> Tennessee Code Annotated, Section 7-86-108, repealed.

<sup>60</sup> Tennessee Code Annotated, Section 7-86-303, effective until January 1, 2015.

<sup>61</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 14, 2017.

<sup>62</sup> Email from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 14, 2017.

<sup>63</sup> Blasingame et al. 2010.

<sup>64</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 7, 2017.

**Now the state’s 911 system is primarily funded with a monthly \$1.16 fee levied on wireless, prepaid wireless, wireline, and VoIP services.**

To help address the major shift in telecommunications from wireline to wireless and VoIP services, the General Assembly passed Public Chapter 795, Acts of 2014, replacing the two-tier funding model—characterized by wireline charges collected by providers and remitted to the ECDs and wireless charges collected by providers and remitted to the TECB and DOR—with a flat rate fee of \$1.16 on all telecommunications services that connect to 911, including wireless, prepaid, VOIP, and wireline services. Service providers can keep an administrative fee of 3% of all their 911 fee collections; beginning July 1, 2017, they can keep 2%. As of January 1, 2015, under the new law, the TECB can recommend a rate increase after a public hearing before the board, but as the previous law required,<sup>65</sup> the increase has to be ratified by a joint resolution of the General Assembly.<sup>66</sup> The TECB can, however, decrease the rate without General Assembly approval, as the previous law allowed. Figure 6 shows Tennessee’s flat rate compared to other states’ rates for wireless, wireline, and VoIP service. Appendix E includes more detail about other states’ rates for wireless, prepaid wireless, VoIP, and wireline service.

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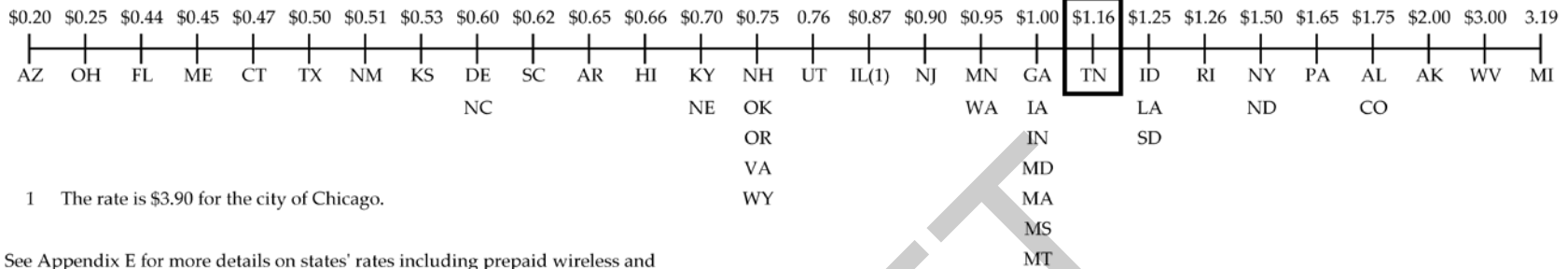
<sup>65</sup> Tennessee Code Annotated, Section 7-86-108, repealed.

<sup>66</sup> Tennessee Code Annotated, Section 7-86-128(b).

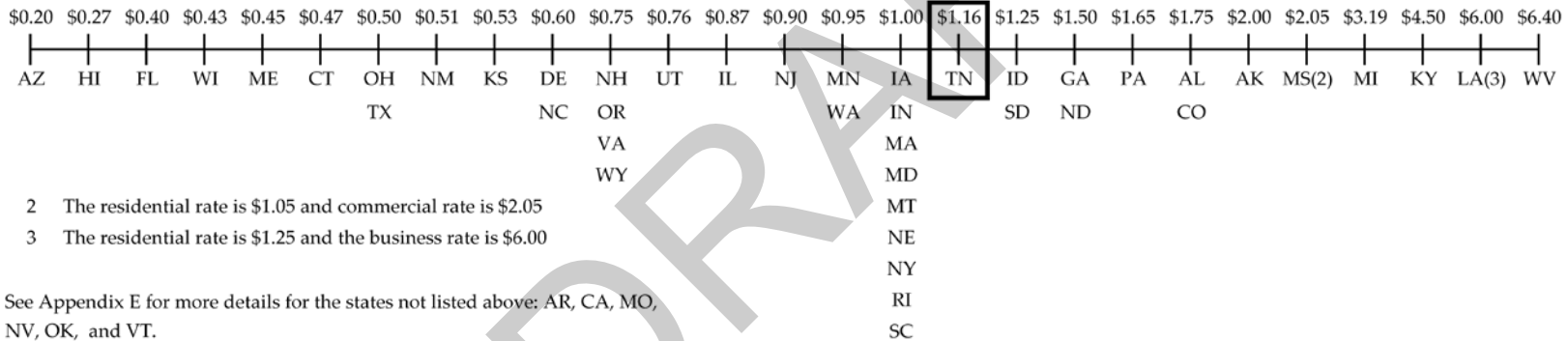


Figure 6. Maximum E-911 Fees by State, as of February 2017

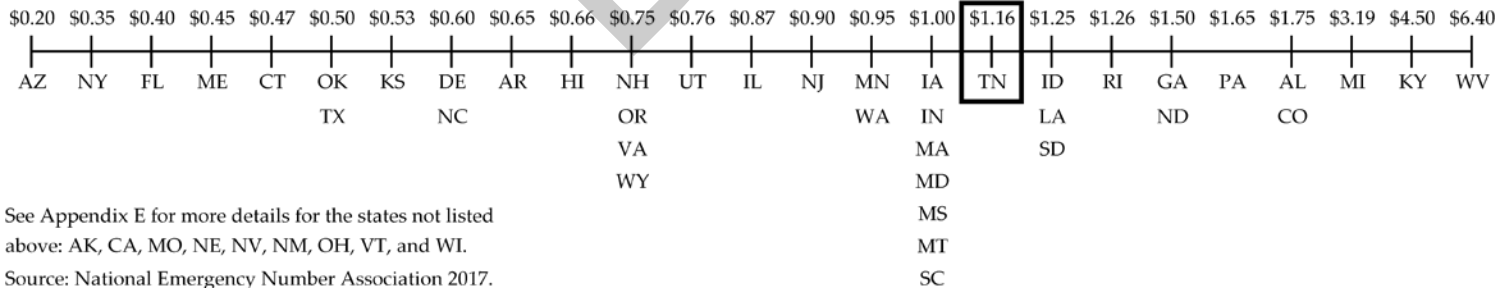
Wireless



Wireline



VoIP



Currently, providers collect 911 fees monthly on service and remit revenue to the TECB every two months, except prepaid fee revenue, which is collected on each retail transaction and remitted to the DOR.<sup>67</sup> Beginning July 1, 2017, providers will remit all 911 fee collections to the DOR monthly, and the DOR will pay the TECB within 30 days of receiving funds and may deduct an administrative fee of 1.125% of the collected charges.<sup>68</sup> As under the previous law, all 911 fee revenue is deposited in the Fund to pay for TECB's mandated expenses and other 911 purposes.<sup>69</sup> Any fund balance at the end of the fiscal year must be carried over to the beginning of the next fiscal year, and excess funds do not revert to the state general fund.<sup>70</sup>

The TECB distributes fee revenue to the ECDs in an amount "equal to the average of total recurring annual revenue the district received from distributions from the board and from direct remittance of 911 fees for fiscal years 2010, 2011, and 2012."<sup>71</sup> The law includes a provision that the distribution to any ECD will not be less than the amount of revenue it received in fiscal year 2012. Districts with wireline rates less than the allowable local fee before July 1, 2011, could request an increase in their base funding amount. Every district that was not charging the maximum rate by that date—55 districts—requested and received an increase effective July 1, 2016, distributed from a total \$2 million available in the TECB budget for this purpose.<sup>72</sup> The board distributes 1/6 of the base amount to the ECDs every two months, and the total base amount distributed to the ECDs, including the increases, is \$82,272,690 million. Appendix F shows the base amounts for each district before and after the increases went into effect in 2016.

The distribution of excess revenue to ECDs also changed when the new law went into effect in 2015. Under the old law, the excess wireless fee revenue, over \$60 million,<sup>73</sup> that was distributed to the ECDs through the grants and other funding programs, is distributed through the mandated formula under the new law, totaling \$82,272,690

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<sup>67</sup> Tennessee Code Annotated, Section 7-86-128, effective until July 1, 2017.

<sup>68</sup> Tennessee Code Annotated, Section 7-86-128(f), effective on July 1, 2017.

<sup>69</sup> Tennessee Code Annotated, Section 7-86-303(d).

<sup>70</sup> Tennessee Code Annotated, Section 7-86-130.

<sup>71</sup> Tennessee Code Annotated, Section 7-86-303.

<sup>72</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 14, 2017, and email from Jim Barnes, March 27, 2017.

<sup>73</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 14, 2017.

million. The new law mandates that the TECB give at least 50% of any revenue in excess of its annual fiscal requirements, including the base amount distribution, to the ECDs.<sup>74</sup> However, the TECB's Policy 15 says it will distribute 75% of any excess fee revenue among the ECDs in individual lump sum payments based on their proportionate share of the base funding distribution. The TECB exceeded this in 2016, distributing 100% of the excess revenue to the ECDs.<sup>75</sup>

Tennessee law still clearly requires that revenue the ECDs receive from the TECB and all other sources be used exclusively in the operation of the districts.<sup>76</sup> Although ECDs are primarily funded by 911 fee revenue, they can also receive funds from federal, state, and local government sources including the issuance of bonds, as well as from private sources.<sup>77</sup> Federal law also allows state or local governments to charge 911 fees as long as they are used for 911 purposes.<sup>78</sup>

***Is the 911 surcharge generating adequate revenue to cover the costs of the services, equipment, maintenance, and improvements needed to provide a uniform, stable, and effective statewide 911 system?***

Determining whether the surcharge or fee is generating adequate revenue for the state 911 system is a complex question. In fiscal year 2016, the first full fiscal year after the new law went into effect, the TECB collected sufficient revenue to operate and meet its mandated expenses, but not all the ECDs received sufficient revenue to meet their expenses. The TECB's mandated expenses are the distributions to districts, state board administration, the Tennessee Regulatory Agency's (TRA) relay services/telecommunications devices access program, and implementation and maintenance of the NG911 network.<sup>79</sup> After meeting these expenses, the TECB had excess revenue it could distribute to the ECDs. Although required to distribute only 50% of excess revenue to the districts, the TECB distributed 100% of the excess revenue, \$1.5 million, to the ECDs.<sup>80</sup>

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<sup>74</sup> Tennessee Code Annotated, Section 7-86-130.

<sup>75</sup> Email from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 15, 2017.

<sup>76</sup> Tennessee Code Annotated, Section 7-86-102(d).

<sup>77</sup> Tennessee Code Annotated, Sections 7-86-109 and 7-86-114. According to the 2016 audit reports, five districts currently have bonds: Cumberland, Hardin, Loudon, Montgomery, and Morgan.

<sup>78</sup> 47 United States Code Section 615a-1(f)(1).

<sup>79</sup> Tennessee Code Annotated, Section 7-86-303.

<sup>80</sup> Email from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 15, 2017.

According to fiscal year 2016 audits from 97 ECDs,<sup>81</sup> most districts received sufficient revenue from all sources to cover their expenses—43 systems reported supplementing TECB distributions with revenue from other local government contributions. However, in 61 of 97 (63%) districts, base amount and excess distributions alone did not cover their operating expenses, including depreciation as an expense, in fiscal year 2016. In fiscal year 2015 half the year was under the old funding method and half under the new so it is not a good year for comparison, but fiscal year 2014, the last full year under the old funding system is. In 2014, the revenue from wireline, wireless, prepaid wireless, and VOIP, excluding revenue from other sources, was not adequate to cover operating expenses in 74 of 100 (74%) districts.

Responses from ECD directors to the 2016 Commission survey seem to suggest that directors feel they don't have adequate revenue to cover the costs of the services, personnel, equipment, maintenance, and improvements needed to provide stable and effective 911 service. Forty-three of 72 (60%) ECD directors did not agree that the base funding distribution was adequate for their district, 16 (22%) agreed that it was adequate, and 13 (18%) were neutral. And in interviews and survey responses, some directors said that in addition to cutting expenses, they are using reserve funds to operate and balance budgets and, as a result, don't have sufficient reserves set aside for future equipment upgrades and replacements. One director echoed comments made by others: "If we would have had to replace major equipment, we would have been struggling to pay for it." The Tennessee Emergency Number Association (TENA) also conducted a survey in 2016, and 13 of 29 (45%) respondents said they used monies from their fund balance to balance the budget in fiscal year 2016. According to one TENA member, most districts do not have a separate account for reserve funds designated for future upgrades but use their fund balance as reserves.<sup>82</sup>

When evaluating the financial health of a district, the TECB considers its net position both including and not including depreciation expenses for equipment. Under Tennessee law, "a 'financially distressed emergency communications district' is a district that, as shown by the annual audits, has a negative change in net position for a period of three (3) consecutive years."<sup>83</sup> A negative change in net position means an ECD operated at a loss during that 12-month period with depreciation included as an

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<sup>81</sup> As of May 8, 2017, three ECDs had not submitted their 2016 audit reports to the state as required by law.

<sup>82</sup> Email from Jamison Peevyhouse, director, Weakley County 911 Communications Center, April 4, 2017.

<sup>83</sup> Tennessee Code Annotated, Section 7-86-304(d). Districts with a deficit in total net position or in default on any indebtedness are also considered to be financially distressed, and TECB's Policy 9 includes a few additional criteria for determining if a district is financially distressed.

operating expense. ECDs determined to be distressed under this criteria are subject to evaluation and supervision by the TECB. During its evaluation of the distressed ECDs, following procedures in its Policy 6,<sup>84</sup> TECB staff first removes the depreciation expense from operating expenses. If after removing depreciation an ECD does not show a negative change in net position, the ECD is no longer considered distressed and no longer under the supervision of the TECB. If after removing depreciation the change in net position is still negative, TECB staff continues its review and makes a recommendation to the TECB members about the status of the ECD. The members then designate the ECD as either confirmed distressed or not distressed. If they are confirmed, they are under the supervision of the TECB following guidelines in Policy 6. If they are not confirmed, the TECB will continue to assist and monitor the ECD as needed until they attain a positive change in net position in an annual report. See appendix G for a copy of TECB’s policy describing its evaluation and supervision procedures and guidelines for financially distressed districts. Table 1 shows the number of ECDs with one, two, or three consecutive years of negative change in net position, not including depreciation as an operating expense, since 2014, and appendix H shows the change in net position, not including depreciation, of all ECDs since 2012.

**Table 1. Number of Districts with One, Two, or Three Consecutive Years of Negative Change in Net Position, Not Including Depreciation as an Operating Expense**

	2016	2015	2014
One Year	6	6	3
Two Consecutive Years	0	0	0
Three Consecutive Years	0	0	0
Total	6*	6	3

Commission staff analysis of annual audit data for 97 ECDs compiled by and received from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, May 9, 2017.

\*Includes data from 97 ECDs, not all 100.

As of the February 2017 TECB meeting, three of four districts that had three consecutive years of negative change in net position as shown by their fiscal year 2016 annual audits were reviewed and designated not financially distressed by the TECB. Those three districts were not determined to be distressed because they did not have three years of consecutive negative change when depreciation expense was removed from the

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<sup>84</sup> Tennessee Emergency Communications Board 2017.

calculation of net position. The TECB is offering them assistance and monitoring according to policy. The other district that is distressed will be evaluated and reviewed at the next meeting.<sup>85</sup> By comparison, in fiscal year 2014, three districts had a negative change in net position, and no districts had two or three consecutive years of negative change. According to the TECB, since 2009, only three districts have been confirmed distressed and by 2014 these were all removed from distressed status.<sup>86</sup> Table 2 shows the number of districts with one, two, or three consecutive years of negative change in net position since 2014 before removing depreciation from the evaluation.

As table 1 shows, when not including depreciation as an operating expense, six districts had a negative change in net position. To bring these six into a positive net position would require \$553,172. But using the current distribution formula, the fee would have to be increased 57 cents, bringing it to \$1.73 and generating \$50,398,095 statewide, much more than is needed.

### **Including Depreciation Expense when Evaluating Financial Status of Districts**

Although the TECB does not include depreciation as an operating expense when determining whether a district is financially distressed, accounting for depreciation is an important part of planning and budgeting. Because 911 equipment is expensive and has a short life span, setting funds aside for future equipment upgrades and replacements is critical for districts' long-term ability to provide quality service.<sup>87</sup>

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<sup>85</sup> Email from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, May 8, 2017.

<sup>86</sup> Email from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, March 31, 2017.

<sup>87</sup> Interviews with Chuck Haston, director, Warren County Emergency Communications District, November 8, 2016; David Alexander, director, Hardin County Emergency Communications District, February 22, 2017; Jamison Peevyhouse, director, Weakley County 911 Communications Center, November 15, 2016; John Stuermer, executive director, Hamilton County 911 Emergency Communications District, November 1, 2016; and Paul McCallister, director, Dickson County Emergency Communications Board, January 9, 2017.

**Table 2. Number of Districts with One, Two, or Three Consecutive Years of Negative Change in Net Position, Including Depreciation as an Operating Expense**

	2016	2015	2014
One Year	16	21	18
Two Consecutive Years	12	10	2
Three Consecutive Years	4	0	0
Total	32*	31	20

Commission staff analysis of annual audit data for 97 ECDs compiled by and received from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, May 9, 2017.

\*Includes data from 97 ECDs, not all 100.

When depreciation is included as an operating expense, 32 ECDs had a negative change in net position in fiscal year 2016, as table 2 shows. Of these 32, sixteen had their first year of negative change, 12 had two consecutive years, and four had three consecutive years. To bring the 32 districts that had a negative change in net position in 2016 to a positive change in net position, a 77 cent increase in the fee would be needed. This would increase the current statewide \$1.16 fee to \$1.93. This increase of \$68,081,638, distributed according to the current formula, is far more than the \$3,529,365 needed to bring the 32 districts into a positive net position. In fiscal year 2014, twenty districts had negative changes in net position. Of these 20, eighteen had one year of negative change, two had two consecutive years, and none had three. If the old funding system were still used, 51 districts would have had a negative change in net position in fiscal year 2016 compared to the 32 that had a negative change in 2016 under the new system. Twenty-four are positive that would have been negative under the old rates and distribution, and five are negative that would have been positive under the old rates and distribution. See table 3. Statewide, if the old system was still being used in fiscal year 2016, an estimated \$70,994,669 would have been generated from wireline and wireless fees and distributed to the ECDs after the providers' administrative fees are taken into account, excluding non-recurring distributions such as grant funds. This is approximately \$8,947,615 less than the total ECDs actually received from the flat rate that year through the base and excess distributions.<sup>88</sup> Appendix I shows the change in net position, including depreciation and all revenue, of all ECDs since 2012.

<sup>88</sup> As of May 8, 2017, three ECDs had not submitted their fiscal year 2016 audits. In its analysis, Commission staff used the fiscal year 2016 audit reports submitted by 97 ECDs, local wireline rates from May 2014, and FCC estimates of subscriber counts to estimate revenue that would have been generated under the old funding system. The 97 districts received a total \$79,942,284 in fiscal year 2016 based on

**Table 3. Old versus New System in 2016, Net Change of Position**

		Number of ECDs if the Old System was Used in 2016		
		Negative	Positive	Total*
Number of ECDs under the New System in 2016	Negative	27	5	32
	Positive	24	41	65
	Total	51	46	97*

Commission staff analysis using fiscal year 2016 audit reports submitted by 97 ECDs, local wireline rates from May 2014, and FCC estimates of subscriber counts.

\*As of May 8, 2017, three ECDs had not submitted their fiscal year 2016 audits.

### **Other distribution models**

Keeping the current fee and using alternative distribution methods such as distributing all the revenue based on call volume, base distribution plus call volume, and base distribution plus population also would not have ensured that all ECDs are in better financial positions. Under these models, a few ECD distribution amounts would have increased, but most would have decreased.<sup>89</sup> Excess revenue generated from 911 fees could potentially be distributed in a way that helps districts that are not covering their costs. In interviews, several ECD directors commented that revenue is fixed, based on 2012 numbers, but expenses continue to increase. However, 35 of 72 (49%) survey respondents agreed that the current method used for distributing 911 fee revenue to the districts is sufficient and working well, 19 (26%) disagreed, and 16 (22%) were neutral. Other states distribute 911 fee revenue based on population, call volume, call-taking positions, district acreage, or a combination of these. Some states use revenue to reimburse districts for expenditures.

**It is difficult to determine what is adequate funding for the ECDs because there is disagreement over what ECDs should pay for.**

Because ECDs have discretion to choose how they operate and how they are structured, their types of expenses and revenue sources vary—they are not all paying for the same

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audit data. Based on data from the TECB that includes unaudited data for the three districts that didn't submit audits, 100 ECDs received \$81,726,428 in base and excess distributions from TECB. All 100 ECDs would have received approximately \$10,751,759 less under the old system than what they actually received in 2016 based on this figure. Email from Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 10, 2017.

<sup>89</sup> Commission staff developed these hypothetical scenarios for the alternative distribution methods.



things. Therefore, it is difficult to determine if the funding each district receives from 911 revenue is adequate and to develop a “one size fits all” funding model.

In the Commission survey, a few respondents mentioned the idea of evaluating the functions each ECD performs, such as GIS mapping or dispatching, and necessary equipment to determine revenue distribution. In its 2006 E-911 report, the Commission suggested that if local fees were insufficient to cover minimum standards an advisory committee of 911 experts could look at linking distribution of the state fee to cost components developed using technical and operational standards. The report says, “The development of standards should provide a means to determine the costs and necessary revenue to provide a minimum level of service statewide. Once the standards are set, the TECB should work with the districts to determine if the level and distribution of revenue needs to change.”<sup>90</sup>

This idea is similar to the state’s Basic Education Program (BEP) funding formula consisting “of 45 components that have been deemed necessary for a school district to provide a basic level of education.” The BEP cost components serve as the basis for calculating the level of funding for each school system but does not prescribe specific levels of expenditures for individual components. “The formula represents a continuing effort to determine the most appropriate levels of funding and the proper components for the BEP.”<sup>91</sup>

Tennessee law clearly states that 911 revenue can only be used for 911 purposes.<sup>92</sup> However, there is disagreement over what “911 purpose” should include. Some stakeholders say that when the system was first funded in 1984, the original intent of the 911 fee, which was charged on phone landlines, was to pay only for equipment to deliver the call to the PSAP. Over the years, as 911 revenue increased and technology evolved, district expenditures expanded from call delivery to also include dispatch equipment and personnel, and now the distinction is perhaps not as clear as it was in 1984.

ECDs are required to either relay, transfer, or dispatch calls.<sup>93</sup>

- Relay means that a PSAP takes information from the caller and then relays that information to the appropriate agency.

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<sup>90</sup> Tennessee Advisory Commission on Intergovernmental Relations 2006.

<sup>91</sup> Tennessee Department of Education 2016.

<sup>92</sup> Tennessee Code Annotated, Sections 7-86-102(d) and 303(d).

<sup>93</sup> Tennessee Code Annotated, Section 7-86-107.

- Transfer means that a PSAP directly transfers the call to the appropriate agency.
- Dispatch means that the PSAP arranges for the dispatch of the appropriate agency.<sup>94</sup>

According to TECB staff, no ECDs in Tennessee relay calls. According to 73 responses to the Commission survey, 50 (68%) of the districts dispatch all calls, and 20 (27%) dispatch some and transfer some. Three responded that they transfer calls to the appropriate agency to dispatch.

State law gives the TECB authority to establish standards for acceptable uses of revenue.<sup>95</sup> In 2003, the TECB created revenue standards outlining required, permissible, and prohibited uses of 911 revenue.<sup>96</sup> ECDs are allowed to pay for dispatch, but only after they meet all required expenses, such as paying for equipment. A copy of the TECB revenue standards is in Appendix J. The definition of 911 service in state law also includes dispatch:

"911 service" means regular 911 service enhanced universal emergency number service or enhanced 911 service that is a telephone exchange communications service whereby a public safety answering point may receive telephone calls dialed to the telephone number 911. "911 service" includes lines and may include the equipment necessary for the answering, transferring and dispatching of public emergency telephone calls originated by persons within the serving area who dial 911, but does not include dial tone first from pay telephones that may be made available by the service provider based on the ability to recover the costs associated with its implementation and consistent with tariffs filed with the Tennessee regulatory authority. . .<sup>97</sup>

ECDs are not obligated to provide dispatch,<sup>98</sup> and how they pay for it is a local choice. Some local governments completely fund dispatch, while some ECDs pay for it—ECDs can make payments to their local governments or can receive contributions from their local governments to help pay for dispatch. Others sign agreements to share the cost with local governments in their jurisdiction, as is done in Hardin, McMinn, and Sumner

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<sup>94</sup> Tennessee Code Annotated, Section 7-86-103.

<sup>95</sup> Tennessee Code Annotated, Section 7-86-306(a)(11).

<sup>96</sup> Blasingame et al. 2010.

<sup>97</sup> Tennessee Code Annotated, Section 7-86-103.

<sup>98</sup> Tennessee Code Annotated, Section 7-86-107.

counties, for example.<sup>99</sup> Both the University of Tennessee Municipal Technical Advisory Service (MTAS) and County Technical Assistance Service (CTAS) encourage and support these agreements between ECDs and local governments.<sup>100</sup>

However, people disagree on how dispatch should be funded. Generally, ECDs in Tennessee agree that 911 revenue is not enough to pay for dispatch and think that local governments should help pay for it. One Commission survey respondent said, “The base funding would be much closer to an acceptable level if the ECD was providing 9-1-1 call answering services only. With the ECD also providing direct dispatch and serving as the sole provider of such in the county, the base amount cannot cover the necessary costs.” Some ECD directors agree with the NENA that 911 and dispatch service and funding are intertwined,<sup>101</sup> while others, including some ECD directors and representatives from MTAS, CTAS, and the National Association of State 911 Administrators (NASNA), say that dispatch and 911 are distinct functions and should be funded separately.<sup>102</sup> Some also argue that local governments should pay for dispatch and not 911 revenue. In its 2010 staff report, the Commission said E-911 revenue is not enough to cover all dispatching costs and “it is important to remember that the state does not consider E-911 and dispatch services to be synonymous. In most areas, local governments and ECDs both contribute to the costs of operating a dispatch center.” Commission staff did not make a recommendation in 2010 about funding dispatch.

Use of 911 funds varies in other states, and their definitions of 911 service are not much clearer than Tennessee’s. Most states are vague on the issue of dispatch in their statutes. Six states have 911 definitions in statute that specifically include dispatch and also allow it as an expense: Alabama, Georgia, Louisiana, Mississippi, Montana, and Washington; six other states, Colorado, Florida, Idaho, Illinois, North Carolina, and Wyoming, specifically say dispatch is an allowable expense. Nebraska is one state

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<sup>99</sup> Interviews with David Alexander, director, Hardin County ECD, February 22, 2017; Marvin Kelly, director, McMinn County ECD, March 6, 2017; and Anthony Holt, county executive, Sumner County, February 28, 2017.

<sup>100</sup> Interviews with Rex Barton, police management consultant, University of Tennessee Municipal Technical Advisory Service, February 3, 2017, and Terry Hazard, criminal justice consultant, University of Tennessee County Technical Assistance Service, February 6, 2017.

<sup>101</sup> Email from Ty Wooten, education director, National Emergency Number Association, February 22, 2017.

<sup>102</sup> Interview with Rex Barton, police management consultant, University of Tennessee Municipal Technical Advisory Service, February 3, 2017; interview with Terry Hazard, criminal justice consultant, University of Tennessee County Technical Assistance Service, February 6, 2017; and email from Evelyn Bailey, executive director, National Association of State 911 Administrators, February 24, 2017.

where the legislative intent is for local governments to be responsible for dispatch, but this will be repealed in 2018.<sup>103</sup> The FCC, in its 2016 *Eighth Annual Report To Congress On State Collection And Distribution Of 911 And Enhanced 911 Fees And Charges*, reports that 36 states allow 911 funds to cover computer-aided dispatch (CAD).<sup>104</sup> The report also says that compared to previous years, fewer states apply 911 fees to dispatch-related costs, and “nineteen states reported using 911 fees to reimburse other law enforcement entities providing dispatch service, while twenty-eight states reported that they used 911 funds to lease, purchase, or otherwise maintain radio dispatch networks.”

***Is the 911 surcharge generating more revenue than necessary to implement the purpose of this act and can it be reduced to the benefit of communications consumers?***

Even though the new model generated and distributed more recurring revenue to ECDs than the old model would have if it was still used in 2016, that year thirty-two ECDs showed a negative change in net position when including depreciation as an operating expense; excluding depreciation six did. Although providers generally disagree, most ECD directors agree that the fee is not generating sufficient revenue and should not be reduced. They say they are cutting expenses and dipping into their reserves to pay for equipment and balance budgets, and the quality of service is already diminished. Additionally, the state is planning for future technology changes and investing in its NG911 network, and although ECDs received funds through grant programs to offset the cost of NG911 equipment, upgrades will continue to require more revenue.<sup>105</sup>

***Is a flat rate communications services surcharge the best manner in which to fund 911 system costs, or should such costs be funded by a percentage surcharge or a different source, such as water service, electric power service, or state general funds or local taxes?***

Similar to other states, Tennessee partially funds 911 services with local general fund revenue. ECDs rely not only on 911 fee revenue to meet their expenses, but according to audit data, 43 ECDs reported also receiving contributions from their local governments totaling \$23,380,408, about 21% of ECDs’ total revenue, in fiscal year 2016. Local governments might pay for some expenses, such as personnel cost, that are part of the local government budget, not the ECD budget, and therefore don’t show up in the

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<sup>103</sup> Revised Statutes of Nebraska Section 86-1003.

<sup>104</sup> Wheeler 2016.

<sup>105</sup> Email from Curtis Sutton, executive director, Tennessee Emergency Communications Board, January 11, 2017.

ECD audit reports. Of 72 Commission survey respondents, 33 (46%) specified using local governments' funds for dispatch or salaries. One benefit to partially funding 911 with local general fund revenue is that, like other emergency services funded with general tax revenue, it provides a broad-based revenue source. However, if there were no dedicated 911 fee, 911 service would compete with other services and might not receive an appropriate level of funding. According to NENA and NASNA, 911 is traditionally underfunded for a variety of reasons, often political.<sup>106</sup> Service providers in Tennessee prefer this method to a 911 fee or tax on telecommunications services, arguing that 911 service is like other emergency services and should be funded the same way.<sup>107</sup> No local governments in other states fully fund 911 services with local general fund revenue, but many provide partial funding.

**Alternative methods for funding 911 are used in a few states.**

A few states use funding methods other than charging a fee on communications services. Some examples are a universal service fee, sales tax on communications services, fees added to property bills, special property tax levies, and fees added to utility bills. Like the telecommunications fee, they each have advantages and disadvantages. Although not used anywhere in the US other methods for funding 911 have been discussed in reports including a fee on health insurance<sup>108</sup> and a user fee on the provider or subscriber.<sup>109</sup> Appendix K lists some guiding principles for funding 911 from the FCC, NENA, NASNA, and the national wireless association (CTIA).

**A universal service fee is used to fund 911 in Vermont.**

Vermont is the only state that has a universal service fee, which is a subscriber-based fee on gross receipts of wireline and wireless telecommunications service provided to an address. It is capped at 2%, and revenue is distributed to four programs, one of which is E-911. The method provides consistent and unified statewide funding and oversight, does not restrict the collection method, and reflects market realities. Multiple organizations could benefit from the fund, which could be an advantage or disadvantage because there could be intense competition and loss of control over

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<sup>106</sup> National Emergency Number Association 2007 and National Association of State 9-1-1 Administrators 2015.

<sup>107</sup> Interview with Mandy Haynes Young, attorney and lobbyist, Butler Snow, January 6, 2017, and email from Lisa McCabe, director, state legislative affairs, CTIA, March 28, 2017.

<sup>108</sup> National Association of 911 Administrators 2015 and 911.gov 2013.

<sup>109</sup> National Emergency Number Association 2007, 911.gov 2013, and National Association of 911 Administrators 2015.

funding.<sup>110</sup> The method is more of a distribution formula, not a revenue generator, and the formula can be problematic.<sup>111</sup> One study by Vermont's Enhanced 9-1-1 Board suggests that the state look at alternative funding methods since the current one is not raising sufficient revenue to meet needs.<sup>112</sup>

**A sales tax on communication services is another funding method used in two other states.**

This method is used in Virginia and Missouri. Virginia levies a statewide sales tax on communications services in addition to the statewide 911 fee.<sup>113</sup> In Missouri, state law authorizes local governments to impose a general sales tax to fund dispatch,<sup>114</sup> which is levied on other goods and services. The method has the advantages of generating revenue from a broader base of taxpayers, being technology neutral, and potentially eliminating existing fees.<sup>115</sup> Additionally, the infrastructure to levy a new tax is already in place. However, levying a tax is often a politically contentious action, and it can take time to implement a tax. Revenues would probably fall with a weak economy, and 911 revenue could be diverted to the general fund, competing with other needs for funding.<sup>116</sup> In its 2015 report *Four Potential Sustainable Funding Models for NG911*, NASNA suggests considering this option, while the FCC, in its 2016 *Task Force on Optimal PSAP Architecture (TFOPA)* report, found "less merit in this approach than did the 2015 NASNA study" mainly because of the concern that 911 fees that are not dedicated would be diverted. A sales tax on communications services does not have strong support among ECD directors in Tennessee: in response to a question in the Commission survey about alternate ways to fund 911 and dispatch, four of 71 (6%) ECD directors suggested that 911 equipment and call delivery costs should be funded with a state sales tax, and four (6%) respondents think that 911 dispatch costs should be funded with a state sales tax.

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<sup>110</sup> National Association of 911 Administrators 2015 and National Emergency Number Association 2007.

<sup>111</sup> 911.gov 2013.

<sup>112</sup> Lipinski 2012.

<sup>113</sup> Virginia Code Annotated, Sections 58.1-645 – 662. Statewide sales tax can be used for 911. See [http://www.ctrc.maryland.gov/archive/pdf/11-7-2012/Virginia\\_Communications\\_Tax\\_Restructuring\\_Presentation.pdf](http://www.ctrc.maryland.gov/archive/pdf/11-7-2012/Virginia_Communications_Tax_Restructuring_Presentation.pdf).

<sup>114</sup> Missouri Revised Statutes, Section 190.335.1.

<sup>115</sup> National Association of 911 Administrators 2015.

<sup>116</sup> National Association of 911 Administrators 2015 and 911.gov 2013.

***A dedicated 911 fee added to property bills and special property tax levies have been used to fund 911 services in other states.***

Some local governments in other states have authority to levy property taxes or impose 911 fees on property bills to fund 911 services. Kenton County, Kentucky added a 911 fee to their property tax bills,<sup>117</sup> and in 2013, Campbell County, Kentucky, started charging apartment owners \$45 per year for each occupied unit, including commercial property and single-family homes.<sup>118</sup> In 2016, Ohio amended an existing law to authorize a county, township, or municipal corporation to impose a 911 system property tax levy in only the portion of the subdivision that would be served by the 911 system; previously, a tax could be levied on the entire subdivision.<sup>119</sup> In Oregon, counties can create special districts funded with property taxes and use the revenue to fund 911 services.<sup>120</sup> They also authorize local governments to impose an optional local property tax levy to fund 911 services.<sup>121</sup> The main advantage of this funding method is that revenue is generated from a broader base. However, because fees might not be sufficient for initial investment requirements of NG911 and might be subject to political and legal scrutiny, NASNA rejects this as a funding option in its 2015 report *Four Potential Sustainable Funding Models for NG911*. In its 2013 *Report to the National 911 Program*, 911.gov suggests also exploring other types of fees. In Tennessee, service providers prefer this method over a fee on telecommunications bills because it removes the fee from telecommunications devices and spreads the fee burden over a broader population base.<sup>122</sup>

***Fees for 911 services have been added to utility bills in Kentucky.***

Local governments in Kentucky have added flat fees to water bills, but not to other utilities like electric service, to fund 911 services. Garrard County, Kentucky tried using this method, but the fee was challenged in court, and the Kentucky Court of Appeals held there is no relationship between the fee and the benefit received, and therefore the fee is not a valid user fee.<sup>123</sup> Whitley County, Kentucky put a fee on water bills, but the

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<sup>117</sup> Beam 2015.

<sup>118</sup> Mayhew 2015.

<sup>119</sup> Ohio Revised Code Annotated, Section 5705.19.

<sup>120</sup> Rasmussen 2012 and Oregon Revised Statutes, Title 19, Chapter 198 and Title 32, Chapter 403.

<sup>121</sup> Rasmussen 2012 and Oregon Revised Statutes, 280.040-280.090.

<sup>122</sup> Interview with Mandy Haynes Young, attorney and lobbyist, Butler Snow, January 6, 2017, and email from Lisa McCabe, director, state legislative affairs, CTIA, March 28, 2017.

<sup>123</sup> City of Lancaster, Kentucky et al. v. Garrard County, Kentucky, et al., Court of Appeals Case No. 2013-CA-000716-MR.

fee has not been challenged in court.<sup>124</sup> One of the main disadvantages to this method is possible legal issues because the relationship between the fee and benefit is unclear. One advantage is shifting the burden from homeowners to tenants and users of 911.<sup>125</sup> In Tennessee, providers prefer this method over a fee on telecommunications bills,<sup>126</sup> and three of 71 (4%) ECD directors who responded to the Commission survey think a water service charge should be used to pay for 911 equipment and call delivery. Seven (10%) think an electric power service charge should be used. To pay for dispatch costs, two (3%) respondents chose water service charge, and ten (14%) chose electric power service charge as alternate methods. Both providers and some ECD directors are concerned about the uncertainty of relying on telecommunications device technology that is rapidly evolving for 911 funds in the future.

***Is there a need or benefit for the board to have the ability to raise the 911 fee rate should there be a financial reason to do so?***

The fee on telecommunications service is the most commonly used method of funding 911 services. In every state except Vermont, the state, the local governments, or both charge 911 fees.<sup>127</sup> The advantages of using this method are that it is used almost universally, is acceptable to policy makers, and is easily understood. One disadvantage is that it is a reactive model that risks becoming obsolete as technology changes.<sup>128</sup>

Like Tennessee, of the 29 other states that levy a statewide 911 fee on telecommunications services, twenty-two states have statewide fees set by their state legislatures. Twenty of these are flat rates<sup>129</sup> and two are formulas.<sup>130</sup> Four of the 22 states give local governments authority to add local fees to the state fees. Of these four, Illinois requires a referendum, but Michigan only requires a referendum if the fee is above 42 cents. Michigan has a limit on the fee while Illinois does not. Maryland and

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<sup>124</sup> Whitley County Ordinance 2016-02.

<sup>125</sup> 911.gov 2013.

<sup>126</sup> Interviews with Jeff Van Dyke, vice president, governmental affairs, AT&T Tennessee, December 20, 2016, and Pam Melton, director of state regulatory and legislative affairs, CenturyLink, December 16, 2016, and testimony from Levoy Knowles, executive director, Tennessee Telecommunications Association, January 27, 2017.

<sup>127</sup> National Emergency Number Association 2017. See <http://www.nena.org/?page=911ratebystate>.

<sup>128</sup> National Association of 911 Administrators 2015.

<sup>129</sup> Arizona, Florida, Hawaii, Illinois, Iowa, Maine, Maryland, Michigan, Minnesota, Montana, New Jersey, New Mexico, New York, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Virginia, and Washington.

<sup>130</sup> California and Kansas.



Washington have limits but no requirement for approval in a referendum. Seven of the 29 have fees set by state boards. Four of these seven states have fees that are set by 911 boards. In Alabama, the state board sets it without a limit, while in Indiana, North Carolina, and Texas, the board can set it up to a limit. In three New England states, Connecticut, Massachusetts, and New Hampshire, that do not have 911 boards, other state utility boards set the rate. Eleven states have fees set by both the state and local governments.<sup>131</sup> For example, wireless rates could be set by the state while local government set wireline rates. Eight states have fees set by local governments only.<sup>132</sup>

Several reports discuss using a telecommunications fee to fund 911 systems. The Commission's 2006 report suggests a committee of 911 experts look at 911 funding. One option they could consider would be a single fee that applies to all technologies, with local governments being given the authority to impose local fees to fund service above minimum standards covered by the state fee.<sup>133</sup> The 2007 NENA report *Funding 911 into the Next Generation*, the 2015 NASNA report *Four Potential Sustainable Funding Models for NG911*, and the FCC's *Task Force on Optimal PSAP Architecture* (TFOPA) report all recognize that although fees would likely continue to be the main method used to fund 911, fees might become obsolete as telecommunications technology evolves. NENA and NASNA suggest assessing the 911 fee as a percentage of the base service charge for telephony, data, broadband, and other services offered.<sup>134</sup> In its 2016 TFOPA report, the FCC suggests a network connection fee model that would base 911 fees on upstream bandwidth levels assessed on any carrier or broadband provider that provides internet access to retail customers. Nevertheless, the report authors also acknowledge that the Internet Tax Freedom Act, which prohibits state and local governments from taxing internet access, might be an issue with a network connection fee.<sup>135</sup>

In response to the Commission survey, 31 of 71 (44%) respondents agreed that 911 equipment and call delivery should only be funded by a statewide flat-rate fee, 16 (23%) disagreed, and 20 (28%) were neutral. In response to a similar question about funding dispatch, 18 (25%) respondents agreed that 911 dispatch should only be funded by a statewide flat-rate fee, 29 (41%) disagreed, and 20 (28%) were neutral. Service providers

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<sup>131</sup> Colorado, Idaho, Kentucky, Louisiana, Mississippi, Nebraska, Ohio, South Carolina, Utah, West Virginia, and Wyoming.

<sup>132</sup> Alaska, Arkansas, Delaware, Georgia, Missouri, Nevada, North Dakota, and Wisconsin. Three states have fee amount limits set in state statute: Alaska, North Dakota, and Wisconsin.

<sup>133</sup> Tennessee Advisory Commission on Intergovernmental Relations 2006.

<sup>134</sup> National Emergency Number Association 2007 and National Association of State 9-1-1 Administrators 2015.

<sup>135</sup> Task Force on Optimal PSAP Architecture 2016.

prefer the statewide flat fee to the old hybrid system because it is easier for them to collect and remit payments.<sup>136</sup>

Most ECD directors think the TECB should have rate-setting authority because it understands the challenges of providing 911 services and given the authority, could more quickly adjust rates if needed. In the survey, 59 of 71 (83%) directors agreed that there is a need or benefit for the TECB to have the authority to raise the 911 fee rate without state legislative approval should there be a financial reason to do so, four (6%) disagreed, and four (6%) were neutral. In response to the TENA survey, 16 of 29 (55%) respondents support the TECB setting the rate, and 11 (38%) support it up to a limit. TECB staff and providers prefer the legislature set the rate, but providers stipulate that if the TECB were given the authority to set it they would want to be represented on the board.<sup>137</sup>

***Has the expansion of 911 system functionality resulting from implementation of IP-based next generation 911 technology increased or decreased costs for emergency communications districts?***

It is unclear if implementation of Next Generation 911 (NG911) has or will substantively affect the ECDs' expenses. According to NENA, current E-911 systems can no longer support technology that has moved beyond traditional voice 911 calls and the needs of the future.<sup>138</sup> NG911 is moving 911 onto the internet so in the future 911 will be able to receive texts, photos, videos, and other forms of data. Being NG911 compliant means PSAPs can receive calls through the network without converting back to analog. Analog systems cannot handle large amounts of data, like text and video, and the NG911 system can handle more data. TECB staff says one of the biggest benefits is redundancy, or backup systems, and automatic call rerouting. Currently, calls can't be automatically routed to another PSAP or administrative lines when there are outages or

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<sup>136</sup> Testimony from Levoy Knowles, executive director, Tennessee Telecommunications Association, January 27, 2017, and interview with Kiran Seshagiri, director of tax systems and billing, CenturyLink, December 16, 2016.

<sup>137</sup> Interviews with Jeff Van Dyke, vice president, governmental affairs, AT&T Tennessee, December 20, 2016, and Mandy Haynes Young, attorney and lobbyist, Butler Snow, January 6, 2017.

<sup>138</sup> National Emergency Number Association 2008.

service disruptions.<sup>139</sup> However, some ECD directors are concerned that there will not be enough redundancy with NG911.<sup>140</sup>

Another benefit of NG911 will be the ability to receive texts, photos, videos, and other forms of data. Over 768,000 adults with hearing loss living in Tennessee could benefit from this capability.<sup>141</sup> It can also be helpful for domestic violence or kidnapping victims or callers in other circumstances where it would not be prudent for a person to talk to a call taker. For example, children have texted 911 from the back of a car when their father was allegedly driving under the influence.<sup>142</sup> There are concerns about how local staff will respond to these forms of communication, and ECDs will need to develop procedures and train staff on how to respond to them. ECDs also have concerns about the cost of storing all this data.<sup>143</sup>

Tennessee began moving its 911 system onto the internet-based NG911 network several years ago and anticipates completing the transition by 2018.<sup>144</sup> As of April 2017, all 142 primary PSAPs were receiving calls through the NG911 network, and 100 were “live”, or completely NG911 compliant, on the network.<sup>145</sup> PSAPs that are not fully compliant need to convert the calls they receive through the network back to analog format. They still use the Automatic Location Identification (ALI) and Automatic Number Identification (ANI) systems that automatically display the caller’s phone number and location of the PSAP. Fifty-four ECDs are fully compliant, and 17 are partially compliant, meaning some of their PSAPs are “live” and some are not. The other 29 do not have PSAPs that are “live” yet.<sup>146</sup>

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<sup>139</sup> Interview with Curtis Sutton, executive director, Tennessee Emergency Communications Board, February 7, 2017.

<sup>140</sup> Minutes from West TENA meeting received in email from David Alexander, director, Hardin County Emergency Communications District, November 17, 2016.

<sup>141</sup> Emails from Mike Helms, director of adult education and outreach, Bridges for the Deaf, Hard of Hearing, and Hearing, April 26, 2017, and Jamison Peevyhouse, director, Weakley County 911 Communications Center, February 20, 2017.

<sup>142</sup> ABC13 Eyewitness News 2017.

<sup>143</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 7, 2017.

<sup>144</sup> Interviews with Curtis Sutton, executive director, Tennessee Emergency Communications Board, October 4, 2016, and March 14, 2017.

<sup>145</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 7, 2017, and email from Curtis Sutton, April 4, 2017.

<sup>146</sup> Based on information received in emails from Curtis Sutton, executive director, Tennessee Emergency Communications Board, December 2, 2016, and January 11, 2017.

According to TECB staff, PSAPs will receive texts over the NG911 network in some areas of the state by the end of 2017. Currently if a PSAP does not receive 911 texts, federal law requires providers to send consumers a bounce back message that will advise them to contact emergency services through other means. The FCC requires all wireless carriers and other providers of text messaging to deliver emergency texts to 911 call centers that have requested the service within six months of the request.<sup>147</sup> The TECB is also discussing a statewide campaign in 2017 to educate the public about texting to 911.<sup>148</sup>

The NG911 NOW Coalition, comprised of NENA, NASNA, and the Industry Council for Emergency Response Technologies (iCERT), is leading the national initiative for NG911 implementation. Although there is no federal requirement, the coalition's goal for nationwide implementation is the end of year 2020.<sup>149</sup> Tennessee is one of the states on the forefront of implementing a statewide NG911 network. As of September 2016, according to NENA, four states have completed implementation of NG911 at the state level: Indiana, Iowa, Maine, and Vermont; and seven states, Connecticut, Hawaii, Massachusetts, North Dakota, South Dakota, Tennessee, and Virginia, are in the process of implementing NG911 at the state level. The map in Figure 7 shows states' progress according to NENA. The National 911 Program, a program of the US Department of Transportation, said in its *2016 National 911 Progress Report*, that 12 of 45 surveyed states reported that they were NG911 operational throughout their states. The report clarified that "for the purposes of this data collection, states that have operational NG911 systems are defined as those systems that can process Internet Protocol (IP)-based emergency call requests and are capable of processing NG911 emergency calls for all service types (wireline, wireless, VoIP) using NG911 infrastructure."<sup>150</sup>

Because NG911 is not fully implemented yet in Tennessee, it is unclear if statewide implementation has substantively affected the expenses of ECDs. At the end of fiscal year 2016, the TECB had spent a total of \$74.3 million on NG911 implementation statewide. The ECDs received grants for NG911 equipment, and may also use local funds to implement NG911 in their PSAPs at their discretion. The TECB does not track

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<sup>147</sup> 47 United States Code of Federal Rules 20.18.

<sup>148</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 7, 2017.

<sup>149</sup> See <http://www.ng911now.org/#about>.

<sup>150</sup> National 911 Program 2016.

how much ECDs are spending on NG911.<sup>151</sup> A large cost savings for PSAPs will be the Automatic Location Identification (ALI) database. Currently, they have to pay for a contract or host their own database, but the state will maintain the ALI database when NG911 is operational. In addition, traditional phone lines, called CAMA trunks, will no longer be needed, which ECDs also currently pay for. The state will pay for the new NG911 trunks. At the May 3, 2017 TECB meeting, the board members approved a state-hosted NG911 controller, an expensive piece of equipment that the ECDs currently each host locally and pay for. A state-hosted controller will potentially save ECDs significant recurring expense.<sup>152</sup> No studies were found that examine the issue of whether or not NG911 increases or decreases costs.

Although the operating costs of NG911 compliant districts in Tennessee do not show a clear trend either up or down, 44 of 72 (61%) respondents to the Commission survey said the expansion of NG911 technology has increased costs for their district, 13 (18%) said there has not been a change, and none said it has decreased costs. In the TENA survey, no respondents said costs went down because of NG911. However, a few ECD directors say that although costs might go up initially, they believe they could save money in the long term.

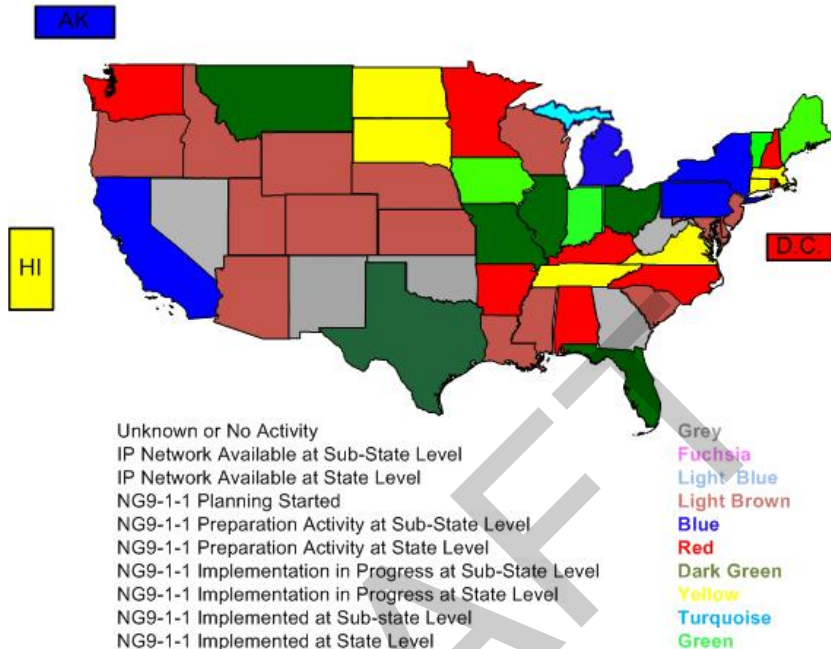
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<sup>151</sup> Email from Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, January 11, 2017.

<sup>152</sup> Interview with Curtis Sutton, executive director, and Jim Barnes, fiscal director, Tennessee Emergency Communications Board, February 7, 2017.

Figure 7. States' progress towards NG911 implementation according to NENA, as of September 5, 2016

Transitional NG9-1-1 Progress by State



**DISCLAIMER: THIS MAP IS A HIGH LEVEL GENERALIZED SNAP SHOT AND IS NOT INTENDED AS A REPLACEMENT FOR OBTAINING SPECIFIC INFORMATION FROM AREAS ON THEIR DETAILED CURRENT STATUS.**

Source: National Emergency Number Association 2016.

[http://www.nena.org/?page=NG911\\_StateActivity&hhSearchTerms=%22status+and+ng911+and+state%22](http://www.nena.org/?page=NG911_StateActivity&hhSearchTerms=%22status+and+ng911+and+state%22)

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## Persons Interviewed

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Hardin County Emergency  
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Evelyn Bailey, Executive Director  
National Association of State 911  
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James C. Barnes, Fiscal Director  
Tennessee Emergency Communications  
Board

Rex Barton, Police Management  
Consultant  
University of Tennessee  
Municipal Technical Advisory Service

Eddie Burchell, Chief of 911 Technical  
Services  
Tennessee Emergency Communications  
Board

Eric Carpenter, Director  
Hamblen County Emergency  
Communications District

David Connor, Executive Director  
Tennessee County Services Association

Amanda Essex, Policy Specialist,  
Transportation  
National Conference of State  
Legislatures

Rick Goldstein, Account Manager  
Government and Education  
AT&T Business Solutions

Chuck Haston, Director  
Warren County Emergency  
Communications District

Mandy Haynes Young, Attorney,  
Lobbyist  
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Terry Hazard, Criminal Justice  
Consultant  
University of Tennessee  
County Technical Assistance Service

Mike Helms, Director of Adult  
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Bridges for the Deaf, Hard of Hearing,  
and Hearing

Anthony Holt, County Executive  
Sumner County

Tom Jankowski, Director, Global Public  
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Marvin Kelly, Director  
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