TABLE OF CONTENTS

EXECUTIVE SUMMARY

The State of Ohio's 9-1-1 Program Office contracted with L.R. Kimball to provide professional consulting services to develop an RFP for a statewide network and the core services component of a statewide Next Generation 9-1-1 (NG9-1-1) system. The purpose of this report is to provide an Economic Impact and Funding Analysis to the State to help prepare Ohio for Next Generation 9-1-1. This report presents and recommends options for the State to consider as they move forward in this endeavor.

There is a misperception that 9-1-1 is the entire process of emergency dispatch and response. Many times, citizens will cite 9-1-1 as the response phase of an incident or, more likely, use it to refer to the entire incident. However, 9-1-1 is simply an easily remembered numeric that allows citizen entry into emergency services. Once reported via 9-1-1, the actual 9-1-1 component is no longer viable in the continuum. Once the 9-1-1 information is received at the public safety answering point (PSAP) the call then flows into what is generically termed "dispatch." As a formal function dispatch should not be confused with 9-1-1. At the very least, dispatch involves determining the appropriate response matrix for a given incident at a given location, notifying (usually via radio) first responders, monitoring the incident as it progresses and finally contributing to the disposition of the call.

Across the nation, the current 9-1-1 system operates on outdated analog technology that is near end-of-life, is increasingly expensive to maintain and cannot accommodate the need to receive and process a steadily increasing call-load from the modern digital communications devices used by our citizens. The current legacy environment cannot accommodate digital communications. The constant evolution of communications technology impacts the functionality of the 9-1-1 system and the public's expectation of the system. next generation features available today with a digital network, such as the increased ability to handle 9-1-1 calls, obtain accurate caller location information, and enable applications such as text, video, and telematics, can greatly improve emergency response, meet public expectations and in turn, save lives.

Doing nothing and leaving the public safety of Ohio citizens to an antiquated analog system that is not compatible with modern communications technologies is not a viable option and quickly becomes cost prohibitive. The investment required to attain NG9-1-1 deployment can be viewed as minimal as opposed to the alternative of missing emergency notifications from the public's digital devices. In the case of an emergency, seconds can mean the difference between life and death. This is a concern shared across the nation, not just in the State of Ohio. Choosing to remain on the current network would be depriving the citizens and visitors of Ohio the highest level of public safety possible today.

Remaining on the current analog network will hinder the public's ability to use new technologies to access 9-1-1. The current 9-1-1 call delivery model is being supported by the local telephone companies that continue to increase equipment and network costs for 9-1-1 services.

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1. ECONOMIC IMPACT

The constant evolution of communications technology impacts the functionality of the 9-1-1 system and the public's expectation of the system. In many cases, the general public is unaware of the limitations of today's 9-1-1 system and those limitations largely impact groups that rely on new forms of communication. Texting, video messaging and social media are the favored means of communication for many young people and members of the Deaf and Hard of Hearing community. Recent incidents where citizens tried to text 9-1-1 for help, underscore the technology limitations of the current 9-1-1 system and the need for a more robust and flexible 9-1-1 communications system.

Most of Ohio's PSAPs operate with technology that is outdated on an analog voice network that provides basic location identification services, but cannot provide Next Generation services that are based on fast developing IP technologies. PSAPs do not have the data sharing capabilities on the current analog network that are often needed in emergency situations. Most of Ohio's PSAPs cannot accept essential data or transfer this data between centers over the antiquated analog infrastructure. The analog system is not designed for continuity of operations in the event of a natural disaster, such as tornadoes or flooding without manual intervention from the host 9-1-1 telephone provider.

A NG9-1-1 network has more enhanced features than the current network and would position the State to accept new applications such as text, video, photos, data, social media and telematics as they become available for use. These applications will be beneficial to 9-1-1 call takers, but do not work with the current network. For example, in a NG9-1-1 environment a 9-1-1 caller could take a photograph of a person or license plate and transmit that photograph to the call taker at the time of the 9-1-1 call. The call taker could then share the information with emergency responders in their jurisdiction, surrounding counties or statewide. PSAPs could also have the ability to share crash data with emergency responders and send that information to nearby hospitals. Given that it is likely that the ability to receive text, video, photos and data from 9-1-1 calls will become the new service level standard. PSAPs that do not employ Next Generation technology may be considered to be providing sub-standard service resulting in the potential for increased liability.

When a NG9-1-1 system is implemented, individuals with disabilities could have the capability to communicate with the PSAPs in Ohio via text messaging and video once the solutions are made available to the PSAPs.

The two funding models that L.R. Kimball offers will allow for additional surcharge to be collected from devices that are not currently collecting and remitting surcharge to the Ohio 9-1-1 Program office. While both models would increase the amount of surcharge collected annually, one would have no financial impact on the citizens of Ohio as they would be paying the same amount as today for their devices. The other would have a positive economic impact by reducing the amount of surcharge collected from each citizens for their devices. Both models will provide the Ohio citizens the ability to utilize modern communication technology, i.e. text, picture, and video messaging to access 9-1-1 services. Both models will also provide the necessary upgrades to the NG9-1-1 system as the new technologies evolve in the future.

1.1 National Next Generation 9-1-1 Planning

By addressing many of Ohio's public safety communication issues, Ohio will be in line with other states who are either in the planning or implementation process for migration to NG9-1-1. A next generation of public safety networks has been in discussion at the national level for many years. In December 2005, the Federal Communications Commission's (FCC) National Reliability and Interoperability Council VII published a report describing the future 9-1-1 system. Since then, the National Emergency Number Association (NENA) has worked with 9-1-1 professionals and technology industries to determine the needs, solutions and standards for what has become known as NG9-1-1. Next Generation 9-1-1 will allow 9-1-1 "calls" from multiple devices and technologies,

and provide a new critical, redundant yet flexible system to serve 9-1-1 now and into the future. The central theme of NG9-1-1 is a digital Internet Protocol (IP) network that will allow PSAPs to receive text, video, photos and data, in addition to voice.

Programs within the U.S. Department of Transportation (USDOT) and FCC support the efforts of these states, encouraging states to work together on intra-state and inter-state levels in an effort towards NG9-1-1.

1.2 PSAP Consolidation

Consolidation may be a natural progression of NG9-1-1. A new digital IP NG9-1-1 network will not only give PSAPs more technology capabilities, but will also provide more options regarding their geographical location and the number of PSAPs needed throughout the State. Calls can be routed anywhere in the State on an IP network, regardless of the caller's location.

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2. CURRENT FUNDING PROVISIONS

2.1 Funding Statutes

9-1-1 service in Ohio is governed by Chapter 128 of the Ohio Revised Code (ORC).

Rates, terms and conditions for 9-1-1 tariffed services are governed by ORC 4927.15.

2.1.1 Wireline 9-1-1 Funding

The Incumbent Local Exchange Carriers' (ILEC) costs for wireline 9-1-1 is paid for by a "bill and keep" system under ORC 128.18 that allows wireline companies to assess a tariffed monthly fee on their subscriber's bills. The rates, terms, and conditions for 9-1-1 service provided in Ohio by a telephone company or a telecommunications carrier are required to be approved and tariffed in accordance with ORC 4927.15. AT&T, Century Link, Cincinnati Bell, Frontier and Windstream Ohio each have approved tariffs on file with the PUCO. The tariffs also permit the wireline companies to recover incremental costs associated with the routing of wireless 9-1-1 calls to the appropriate PSAP. Five companies - AT&T, Frontier, Cincinnati Bell, Windstream and CenturyLink, - have tariffs to recover incremental costs associated with the routing of wireless 9-1-1 calls.

The monthly wireline tariff rates established by the carriers identified above are:

AT&T	$0.24
Frontier	$0.12
Cincinnati Bell	$0.12
Windstream	$0.20
CenturyLink	$0.18

While the tariffed rates are known, there is no mechanism in regulation of statute to compel the 9-1-1 system providers to divulge the cost to provide this service. While L.R. Kimball was unable to determine exactly what it costs to provide the service, we can provide an estimate of how much revenue is generated by the fee.

In developing the estimated revenue, the L.R. Kimball team utilized an aggregate wireline subscriber count provided by the latest available FCC report. That report provided for 2013 the total wireline count in the State of Ohio was 2,464,000 wireline access lines. Since obtaining wireline access lines for each carrier is virtually impossible for proprietary and competitive reasons, we must utilize aggregate mean average charge for cost recovery. That rate mean average is $0.18 across all five carriers. When factoring the average of $0.18 per month times the number of access lines we have estimated the average annual revenue for the wireline carriers is $5,322,240.

2.1.2 Wireless 9-1-1 Funding

The wireless capabilities provided by the E9-1-1 system are funded by a statewide 9-1-1 surcharge assessed on wireless telephones, which the wireless service providers and resellers collect and remit to the Administrator of the Ohio Department of Taxation. The rate is a flat $0.25 per month for each wireless phone. Pre-paid wireless service also has a wireless 9-1-1 charge of five-tenths of one per cent of the sale price to be collected by the seller. The Administrator deposits the funds from the wireless 9-1-1 charges into accounts as follows:

ORC 128.54(2) Amounts remitted under section 128.46 of the Revised Code shall be paid to the treasurer of state for deposit as follows:
(a) Ninety-seven per cent to the wireless 9-1-1 government assistance fund. All interest earned on the wireless 9-1-1 government assistance fund shall be credited to the fund.
(b) One per cent to the wireless 9-1-1 administrative fund;
(c) Two per cent to the 9-1-1 program fund.
(3) The tax commissioner shall use the wireless 9-1-1 administrative fund to defray the costs incurred in carrying out this chapter.
(4) The steering committee shall use the 9-1-1 program fund to defray the costs incurred by the steering committee in carrying out this chapter.
(5) Annually, the tax commissioner, after paying administrative costs under division (A)(3) of this section, shall transfer any excess remaining in the wireless 9-1-1 administrative fund to the next generation 9-1-1 fund, created under this section.
(B) At the direction of the steering committee, the tax commissioner shall transfer the funds remaining in the wireless 9-1-1 government assistance fund to the credit of the next generation 9-1-1 fund. All interest earned on the next generation 9-1-1 fund shall be credited to the fund.
(C) From the wireless 9-1-1 government assistance fund, the director of budget and management shall, as funds are available, transfer to the tax refund fund, created under section 5703.052 of the Revised Code, amounts equal to the refunds certified by the tax commissioner under division (D) of section 128.47 of the Revised Code.

2.1.3 Fund Distribution

The tax commissioner distributes the wireless 9-1-1 surcharge to the counties per the funding formula set forth in ORC 128.55, below. The counties, in turn, distribute the funds to PSAPs within the county that are designated as primary answering points for wireless 9-1-1. ORC 128.55 specifies that the wireless 9-1-1 surcharge is distributed in the following manner:

(A)
(1) The tax commissioner, not later than the last day of each month, shall disburse moneys from the wireless 9-1-1 government assistance fund, plus any accrued interest on the fund, to each county treasurer.
(a) If there are sufficient funds in the wireless 9-1-1 government assistance fund, each county treasurer shall receive the same amount distributed to that county by the public utilities commission in the corresponding calendar month in 2013.
(b) If the funds available are insufficient to make the distributions as provided in division (A)(1)(a) of this section, each county's share shall be reduced in proportion to the amounts received in the corresponding calendar month in 2013, until the total amount to be distributed to the counties is equivalent to the amount available in the wireless 9-1-1 government assistance fund. Any shortfall in distributions resulting from insufficient funds from a previous month shall be remedied in the following month.
(2) The tax commissioner shall disburse moneys from the next generation 9-1-1 fund in accordance with the guidelines established under section 128.022 of the Revised Code.
(B) Immediately upon receipt by a county treasurer of a disbursement under division (A) of this section, the county shall disburse, in accordance with the allocation formula set forth in the final plan, the amount the county so received to any other subdivisions in the county and any regional councils of governments in the county that pay the costs of a public safety answering point providing wireless enhanced 9-1-1 under the plan.

(C) Nothing in this chapter affects the authority of a subdivision operating or served by a public safety answering point of a 9-1-1 system or a regional council of governments operating a public safety answering point of a 9-1-1 system to use, as provided in the final plan for the system or in an agreement under section 128.09 of the Revised Code, any other authorized revenue of the subdivision or the regional council of governments for the purposes of providing basic or enhanced 9-1-1.

2.2 Funding Inefficiencies

Revenue generated from wireline is estimated at $5,322,240 plus the $25 million collected from wireless carriers brings the estimated cost to Ohio citizens to approximately $30 million for the current 9-1-1 system.

The Wireless 9-1-1 charge and Prepaid Wireless 9-1-1 charge provide approximately $25,000,000 to fund wireless 9-1-1 service throughout the State. The remainder of the total cost of providing 9-1-1 services is made up at the local level through the use of county general revenue funds, user fees, property tax, special assessments and sales tax revenues. In addition, the funds are currently distributed to the counties based on the amount of funds distributed in 2013 by the PUCO. A distribution formula should be established that takes into account factors such as the number of PSAPs in a county that could be changing due to the reductions incentivized in ORC 128.571 and a county's need for funding. There are counties in Ohio that have a significant increase in 9-1-1 call volume during certain months of the year due to tourism. The current distribution method does not address their need for increased funds to provide service during those busy months.

Furthermore, users of new technologies may not be required by statute to pay the 9-1-1 fees, even though they are able to access the 9-1-1 system. This means that local governments are left to subsidize 9-1-1 system access for providers and users of new technologies.

One predominant untapped service is Voice over Internet Protocol (VOIP); the FCC's latest data from June 2014 shows 149 VOIP providers in Ohio.[1] These VOIP service providers are not currently collecting a 9-1-1 charge from subscribers in Ohio. As consumers move away from standard wireline phone services in favor of new technologies like VOIP, there is a corresponding loss of revenue. The Ohio Telecom Association estimated that in 2012 there were 925,000 cable VOIP customers in Ohio. This number does not include non-cable VOIP users such as Vonage and MagicJack. Voice over Internet Protocol is one example of technologies capable of accessing 9-1-1 services that the current body of law does not require to contribute to the support of the state's 9-1-1 system and results in a loss of revenue.

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[1] Voice Telephone Services Report, FCC, available at, https://www.fcc.gov/voice-telephone-services-report.

3. FUNDING ANALYSIS

3.1 National Average Surcharge Rates

Surcharge types and collection models vary greatly across the United States. Some states collect at the local level, some states collect at the state-level, and some have a mixture of both. Some states only collect on a few of the technologies, while some have all encompassing technology neutral surcharges that catch more revenue from untapped technologies. Most state surcharges linger around the $1.00 mark. Below is a discussion on the average surcharges for the differing surcharge types found across the Country.

Taxes, fees, and surcharge amounts on wireline 9-1-1 service vary by state, ranging from $0.08 by the State of Utah to $6.40 by some counties in West Virginia with typical fees in the $0.30 to $1.00 range, and are authorized through state and local laws. Some fees are percentages of tariff rates (e.g., Arkansas), sales taxes (e.g., Missouri), or other rates. Some fees differ for residential and business lines (e.g., Louisiana). Initially, wireline surcharges for 9-1-1 were the only method used to fund 9-1-1. All states currently have enabling legislation to assess taxes, fees, or surcharges for wireline subscribers.[2]

Taxes, fees, and surcharges on wireless telephone subscribers are billed monthly to the subscriber. They can be imposed at the local and/or state level. Wireless taxes, fees, and surcharge amounts vary by state, ranging from $0.19 by the State of Michigan to $3.00 by West Virginia with typical fees in the $0.35 to $1.00 range, and are authorized through state and local legislation. Currently, only Missouri has no wireless taxes, fees, or surcharges.[3] Taxes, fees, and surcharges on VoIP subscribers are billed monthly to the subscriber. They can be imposed at the local and/or state level. VoIP taxes, fees, and surcharge amounts vary by state, ranging from $0.19 by the State of Michigan to $6.40 by some counties in West Virginia with typical fees in the $0.35 to $1.00 range, and are authorized through state and local legislation. Rather than flat fees, some states charge a percentage of bundled rates. Currently, 42 states have VoIP taxes, fees, or surcharges in place.[4]

States have various methods in place to capture fees on prepaid cellular device users, such as collecting a tax at the point of sale (POS) or deducting minutes monthly from customer accounts. States that do not collect sales tax (currently Alaska, Oregon, Montana, New Hampshire, and Delaware) may not have a facility in place to collect POS fees. Fees vary from a percentage of the total retail sales price to fixed fees on each retail purchase. Thirty five states now collect the 9-1-1 fee at POS on prepaid wireless purchases. In addition, some states have reported that monitoring, collecting, and enforcing prepaid fees from national and online retailers can be inconsistent and burdensome.[5]

3.2 Universal Device Fee

Current 9-1-1 funding approaches that assess fees on end use devices or access lines, administered largely by traditional carriers, may no longer be sufficient in this world of rapid emerging technologies. States continue to face

[2] Blue Ribbon Panel on 9-1-1 Funding, Report to the National 9-1-1 Program, 9.
[3] *Id.*
[4] *Id.*
[5] *Id.*

challenges in fitting emerging services into existing funding mechanisms. Pre-paid wireless subscriptions, pre-paid wireless cards, Voice over Internet Protocol (VOIP) technologies (nomadic, and fixed), and OTT (over the top) Internet data services have all raised such challenges. These new technologies and services allow some carriers to gain a competitive edge by avoiding paying an equitable share of 9-1-1 support. Such gaps in fee collection have forced some members of the 9-1-1 community to engage in extensive legislative battles and litigation with those non-contributing carriers whose customers still rely on the 9-1-1 system. Today, revenues from 9-1-1 fees imposed on wireline services continue to decrease as more households, approximately 45%, shift to wireless-only voice service.[6]

In response, the Federal government and industry groups encourage the transition to an "all device" surcharge model that is technology neutral and recently, many industry groups have been considering how to assess a fee on any device that can access 9-1-1. The National 9-1-1 Program has been urging States to transition to technology neutral funding models for years in a number of their efforts including a Blue Ribbon Panel on Funding and the National 9-1-1 Assessment Guidelines Work Group. Additionally, The NENA Next Generation Partner Program's Next Generation 9-1-1 Transition Policy Implementation Handbook: A Guide for Identifying and Implementing Policies to Enable NG9-1-1, recommends a technology neutral approach to funding 9-1-1. Recently, the National Association of State 9-1-1 Administrators released a white paper on four potential funding models for NG9-1-1 and that white paper recommends that any funding solution implemented should be technology neutral. The Ohio ESInet Technical Standards sub-committee recommended that in order to provide the most adequate long-term funding source for 9-1-1 into the future, funding mechanisms should meet the following criteria:

- The funding method should encompass the principle of access, so that anyone capable of accessing the legacy and IP networks should share in the costs of 9-1-1 service.
- The funding method should be technology, vendor, and competitively neutral, so it does not give competitive advantages to one telecommunications, broadband, or data provider at the expense of other providers.
- The funds collected should be used only for their intended purposes and should not be re-allocated at the state or local level for non-9-1-1 purposes.
- The funding method should provide for the total cost of providing 9-1-1 service.
- The funding method should be easy to understand and administer.
- The funding method should be fair and equitable to all individuals and devices capable of accessing the current and future 9-1-1 network.
- The funding method should be stable, and therefore not require frequent legislative adjustments.

Most recently, the FCC's Task Force on Optimal PSAP Architecture (TFOPA), Working Group 3: Optimal Approach to Next-Generation 9-1-1 Resource Allocation for PSAPs released its Final Report in September. Working Group 3 shares the view of many in the public safety community that any technology or services capable of accessing the 9-1-1 system should contribute its fair share to operate the legacy 9-1-1 systems and also to assist in the build-out of NG9-1-1 networks. Working Group 3 adopted the following policy statement that introduces the concept of assessing a 9-1-1 fee on broadband bandwidth:

> "Nine-one-one funding must be predictable, stable, and dedicated only for that purpose. A 9-1-1 fee shall be assessed monthly in a competitively neutral manner on all technologies utilized to place a 9-1-1 emergency request for assistance to a public safety answering point through an emergency communications network.

[6] FINAL REPORT OF TFOPA WORKING GROUP 3 Task Force on Optimal Public Safety Answering Point Architecture (TFOPA) Working Group 3: Optimal Resource Allocation, Sept. 28, 2015, 5.

Such fee can include a traditional fee on an access line or communications device in a subscription, an amount in a pre-paid wireless plan, or going forward, assessed on a unit of upstream bandwidth of an internet access network provider."[7]

3.3 Analysis of other States' Universal Device Surcharges

This section contains a detailed sampling of the surcharges of three States contiguous to Ohio that have implemented a statewide all-device fee including Indiana, Michigan and Pennsylvania. The communications technologies that the public uses to communicate continue to change at a rapid pace. New technologies tax the 9-1-1 system because many are outside of the application of the technology specific surcharges that have sustained 9-1-1 in the past. In response, many States are implementing a technology neutral funding model to capture revenue from any device capable of reaching 9-1-1. Indiana, Michigan and Pennsylvania have implemented this form of surcharge and are detailed in this section.

3.3.1 Indiana

Indiana law requires that the State provide a guaranteed minimum level of funding to counties on an annual basis generated from a technology neutral single statewide fee. The $1.00 monthly statewide 9-1-1 fee is assessed uniformly on each standard user having a place of primary use in Indiana. A standard user is defined as "a communications service user who pays retrospectively for the service and has an Indiana billing address for the service; and in the case of a non-mobile communications service user, an exchange access facility used in Indiana." VOIP providers are treated like all other technology providers and are subject to the uniform collection. A separate 9-1-1 fee of $.50 is assessed on prepaid wireless services at the point of sale by retailers and remitted to the Indiana Department of Revenue. The Indiana Statewide 9-1-1 Board has authority to adjust the statewide 9-1-1 fee. They can increase the fee in the amount of $0.10 once between June 30, 2015 and July 1, 2020 after review of the budget committee. The fee may be lowered once annually by $0.10, any more would require legislative approval. Local government does not have authority to assess a 9-1-1 fee. All fees are remitted to the State and deposited into the statewide 9-1-1 Fund, which is managed by the Board. The Board has the authority to audit providers' compliance with collection and remittance procedures on an annual basis. The Board distributes these funds in the following manner:

> "(1) In each state fiscal year, the board may retain the lesser of:
> (A) ten percent (10%) of the statewide 9-1-1 fees deposited in the fund in the previous state fiscal year; or
> (B) the amount of fees deposited in the fund in the previous state fiscal year that would provide for the operating expenses of the statewide 9-1-1 system during the state fiscal year for which the fees are retained; to pay the board's expenses in administering this chapter and to develop, operate, and maintain a statewide 9-1-1 system. The board may decrease the amount of fees retained by the board under this subdivision.
> (2) After retaining the amount set forth in subdivision (1), the board shall distribute to the counties the remainder of the statewide 9-1-1 fees in the fund. With respect to any state fiscal year beginning after June 30, 2015, the board shall first ensure a distribution to each county in an amount that is equal to the total amount of statewide 9-1-1 fees distributed to the county during the fiscal year ending June 30, 2014.

[7] *Id* at 6.

(3) If any statewide 9-1-1 fees remain in the fund after the distributions ensured under subdivision (2), the board shall distribute the fees as follows:
(A) Ninety percent (90%) of the fees shall be distributed to the counties based upon each county's percentage of the state's population.
(B) Ten percent (10%) of the fees shall be distributed equally among the counties.
(b) The board may not distribute money in the fund in a manner that impairs the ability of the board to fulfill its management and administrative obligations under this chapter."8

3.3.2 Michigan

Michigan amended its 9-1-1 statute in 2007 to provide for a technology neutral funding model that requires all communications services that can provide access to 9-1-1 to collect and remit the 9-1-1 surcharge, regardless of technology. This change broadened the surcharge base.

Under MCL 484.1401, Michigan has three statutory funding provisions for 9-1-1: 1) a statewide "all devices" surcharge, 2) a county "all devices" operational surcharge, and 3) a technical fee (wireline-based).

Michigan's statewide 9-1-1 surcharge is set forth in MCL 484.1401; it is collected by the communication service providers and remitted to the Michigan Department of Treasury (Treasury). A separate fee on pre-paid wireless services is also remitted to the Treasury. The Treasury is responsible for the financial distribution of those funds. This includes processing remittances from the communications service providers; depositing them into the Emergency 9-1-1 Fund; distributing the funds to the counties, LECs, and the PSAPs as directed by the Committee; and accounting for all transactions from the 9-1-1 Fund.

Funds generated by the State 9-1-1 surcharge of $0.19 on all devices that can access 9-1-1 are outlined in MCL 484.1408 and distributed as follows:

- 82.5% - To counties distributed in two manners: 40% on an equal share basis and 60% on a per capita basis
- 7.75% - To fund 9-1-1 network costs for delivery of wireless calls to PSAPs
- 6.0% - To 9-1-1 training program
- 1.87% - To administer the act and fund the State 9-1-1 Office
- 1.88% - To the Michigan State Police (MSP) to operate a regional dispatch center that receives and dispatches 9-1-1 calls

In addition to 9-1-1 surcharges, some counties in Michigan also use general fund money to support PSAP operations. Other counties utilize special millage funds (a voter-approved tax rate on property, expressed in mills per dollar of value of the property) to support their 9-1-1 programs that range from $0 - $3.00.[9]

[8] Indiana HB 1475 of 2015.
[9] State of Michigan, State 9-1-1 Plan Revision 2.0, *available at* http://www.michigan.gov/documents/msp/State_of_MI_9-1-1_Plan_06232009_286537_7.pdf.

3.3.3 Pennsylvania

Pennsylvania's 9-1-1 Statutes were amended in 2015 to establish a new funding program for public safety answering points (PSAPs) across the Commonwealth. The new funding program includes a uniform 9-1-1 surcharge fee of $1.65, a uniform 9-1-1 Fund for collecting surcharges, and updated procedures related to remitting and distributing surcharge revenues.

Each subscriber or consumer is required to pay the $1.65 surcharge for each 9-1-1 communications service or prepaid wireless device for which that subscriber or consumer is billed by a provider or seller.[10] In the case of multiline telephone system subscribers, except PBX subscribers, each line is assessed the surcharge for the first 25 lines. For lines 26 through 100, each line is assessed 75 percent of the surcharge. For lines 101 through 250, each line is assessed 50 percent of the surcharge. For lines 251 through 500, each line is assessed 20% of the surcharge. For lines 501 or more, each line is assessed 17.2% of the surcharge. Each digital transmission link, including primary rate interface service or Digital Signal-1 (DS-1) level service, or equivalent, that can be channelized and split into 23 or 24 voice-grade or data-grade channels for voice communications, that when the digits 9-1-1 are dialed provides the subscriber access to a PSAP through permissible interconnection to the dedicated 9-1-1 system, a subscriber's assessments shall pay 23 surcharges per transmission link. Each VOIP provider is required to collect the uniform 9-1-1 surcharge for the number of VoIP service lines for which the VOIP provider has enabled the capacity for simultaneous outbound calls regardless of actual usage.[11]

Providers pay the surcharge collections to the State Treasurer for deposit in the 9-1-1 fund. The Treasurer may retain up to one percent of the remitted surcharge to pay expenses directly related to the cost of collection. Each provider collecting the surcharge may retain an amount not to exceed one percent of the gross receipts of surcharges collected as reimbursement for its actual administrative costs.[12] Money in the 9-1-1 fund and the interest the money accrues is appropriated to the Pennsylvania Emergency Management agency to be disbursed by the agency.[13]

The surcharge on prepaid wireless service is collected by the seller of the service from the consumer per each retail transaction that occurs in person, by telephone, through the Internet or by any other method. The seller may retain 1.5 percent of the surcharge for administrative costs. The rest of the surcharge is remitted to the Department of Revenue and the Department may retain one percent for administration. The Department pays the remainder of the remitted surcharges to the State Treasurer for deposit into the 9-1-1 fund within 30 days of receipt.[14]

Within 30 days after the end of each quarter, the agency shall determine the amount available from the fund for distribution and make disbursements. The Pennsylvania Emergency Management Agency has until February 2018 to establish a distribution formula. The Statute lays out the following parameters for that formula: not less than 80 percent of the amount in the fund shall be disbursed to a 9-1-1 system through a mathematical formula established by the agency, of which at least 30% shall solely be based on population. Up to 15 percent of the amount in the fund shall be used by the agency to establish, enhance, operate or maintain statewide interconnectivity of 9-1-1 systems,

[10] 35 Pa. Cons. Stat. § 5306.2.
[11] 35 Pa. Cons. Stat. § 5307(b).
[12] 35 Pa. Cons. Stat. § 5306.2.
[13] 35 Pa. Cons. Stat. § 5306.1.
[14] 35 Pa. Cons. Stat. § 5307.1.

including, but not limited to, the use or obligations of money for debt service related to regional or statewide interconnectivity. Three percent of the amount available shall be disbursed equally to the PSAPs. Consolidation of PSAPs does not reduce an allocation to a county. Two percent of the amount in the fund may be retained by the agency to pay for agency expenses directly related to administering the provisions of this chapter. The distribution formula is reviewed every two years and may be adjusted annually. If the fund experiences a surplus for eight consecutive quarters, the agency shall recommend a reduced surcharge for consideration by the General Assembly.[15] Additionally, the statute lays out the following factor for the Agency to consider while developing a distribution formula:

> In developing and evaluating the distribution formula, the agency, in consultation with the board, shall consider and may include the following factors that permit the formula to reflect 911 system needs: (i) Base level costs common to all 911 systems. (ii) Population and population density. (iii) Call volume, including definition of what constitutes a call as published by the agency. (iv) Extenuating factors such as topography, concentrated exposure such as transit or industrial facilities, or cyclical exposures such as high-attendance public events. (5) In development of the distribution formula, the agency, in consultation with the board, shall consider the 911 system's average reported allowable 911 system costs for the five years immediately preceding the effective date of this section. (6) Notwithstanding the provisions of paragraph (5), the total annual disbursement from the fund to any one 911 system may not exceed the actual annual costs to enhance, operate or maintain that 911 system in accordance with the Statewide 911 system plan. Actual costs may include amortization or depreciation of allowable capital costs of the 911 system as determined using generally accepted accounting principles and approved plan allocations to capital and operating reserves, if approved by the agency. (f) Interim distribution formula.--Commencing on the effective date of this subsection, until the board develops and the agency implements a distribution formula under subsection (e), the money available under subsection (d)(1) and (3) shall be distributed to each 911 system as follows: (1) A share equivalent to 106% times the respective 911 system's average of local exchange telephone carriers surcharge collections under section 5305 (relating to 911 system plan) for the five years immediately preceding the effective date of this section. (2) A share equivalent to 106% times the respective 911 system's average of VoIP provider's surcharge collections under section 5307 for the five years immediately preceding the effective date of this section. (3) The remaining amount distributed to each 911 system shall be based on the ratio that its average reported allowable 911 system costs for the five years immediately preceding the effective date of this paragraph bear to the average reported allowable 911 system costs for all 911 systems for the five years immediately preceding the effective date of this paragraph.[16]

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[15] 35 Pa. Cons. Stat. § 5306.1.
[16] 35 Pa. Cons. Stat. §5306.1(c).

4. ANALYSIS OF OTHER STATES' AUTHORIZED USES

Authorized uses for 9-1-1 surcharge funds vary across the United States. Some states have specific rules that draw a bold line on the allowable uses of 9-1-1 funds, while some states have very general rules and field regular inquiries on allowable expenses at regular state-level 9-1-1 board or committee meetings. Either method can work well for states depending on the state and local political environment and working relationships of jurisdictions. Below, Indiana's, Michigan's and South Dakota's authorized use rules are outlined. All of these states have specific rules for authorized uses.

4.1 Indiana

County governments are required to deposit fee receipts in a separate account, from which they allocate the funds among their PSAPs to be used for the following purposes:

- The lease, purchase or maintenance of communications service equipment
- Necessary system hardware and software and data base equipment
- Personnel expenses (wages, benefits, training and continuing education) to the extent reasonable and necessary for the provision and maintenance of the statewide 9-1-1 system
- Operational costs (including utilities, maintenance, backup power and backup systems, logging recorders,
- Board approved emergency notification systems
- Connectivity to the Indiana data and communications system (IDACS)
- Rates charged by 9-1-1 system service providers
- First responder mobile radio equipment
- Up to 50 percent of the costs associated with radio and equipment replacements necessary to comply with the FCC's narrow banding mandate

Funds generated from the 9-1-1 fee may not be used for the construction, purchase, renovation, or furnishing of PSAP buildings; or vehicles.

The Board enforces compliance with the statutory requirements regarding the use of 9-1-1 funds by ensuring the County reimburses the state 9-1-1 fund in the dollar amount of the non-complying expenditure.[17]

4.2 Michigan

The following are allowable expenditures of 9-1-1 surcharge funds as approved by the Michigan State 9-1-1 Committee:

- Personnel Costs directly attributable to the delivery of 9-1-1 service (i.e.; directors, supervisors, dispatchers, calltakers, technical staff, support staff):
    - Salaries MSAG Coordination Uniforms
    - Fringe Benefits Addressing/Database EAP
    - Note: If 9-1-1 staff serves dual functions (i.e.; a director who is also in charge of Emergency Management, a dispatcher who is also a police officer) then only those portions of personnel costs attributable to their 9-1-1 functions should be allowable.

[17] Indiana Statewide 9-1-1 Plan.

- Facility Costs of the dispatch center directly attributable to the delivery of 9-1-1 service:
  - Capital improvements for construction, remodeling, or expansion of dispatch center
  - Electrical/Heat/AC/Water, Fire Suppression System, Cleaning, Maintenance, Trash Removal, Telephone, Generator/UPS and Grounding, Insurance, Office Supplies, Printing and copying, Furniture
  - Note: If a shared facility, only those portions of facility costs attributable to the 9-1-1 functions should be allowable.

- Training and Memberships directly related to 9-1-1 service:
  - On the job training, Vendor provided training, Conferences, Travel and lodging as necessary, Membership in associations (APCO, NENA, etc.)

- Hardware, software, connectivity and peripherals directly attributable to the delivery of 9-1-1 service:
  - Customer Premise Equipment, Remote CPE Hardware/Modems, Computer-Aided Dispatch, Radio system (consoles, infrastructure, field equipment), LEIN costs for dispatch purposes, Paging System, pagers and related costs, Voice logging equipment, Mobile Data Systems, GIS/Mapping Systems/AVL Systems, Alarms/Security Systems, Connectivity for any of the above, Maintenance and service agreements of above, Software licensing of the above, Associated database costs

- Vehicle costs (staff vehicle, pool car, mileage reimbursement, fuel, etc.) directly attributable to the delivery of 9-1-1 service:
  - Travel for meetings, training, conferences, Travel for MSAG verification and testing, Travel for 9-1-1 Public Education purposes

- Professional Services
  - Attorneys, Consultants, Insurance, Architects, Auditor

- Public Information/Education Expenses directly attributable to the delivery of 9-1-1 service.

- Miscellaneous

The following are disallowable expenditures of 9-1-1 surcharge funds as approved by the Michigan State 9-1-1 Committee:

- Personnel Costs of law enforcement, fire, and EMS responders, emergency management staff, shared support or technical staff, except for portions of time directly functioning as 9-1-1 allowable staff.

- Facility Costs of law enforcement, fire, EMS, emergency management, or other municipal facilities, except for that portion housing the 9-1-1 center or back up center, or leased to the 9-1-1 center for allowable training or meeting facilities.

- Capital costs and furnishing for facilities for which the primary purpose is other than 9-1-1 (i.e.; a conference room used primarily for the City Council but occasionally leased/loaned to the 9-1-1 center for meetings).

- Training for staff not involved directly in the delivery of 9-1-1 service, or for any staff for courses not directly attributable to 9-1-1 or dispatching services.

- Memberships for staff not involved directly in the delivery of 9-1-1 service, or for associations with a primary purpose other than public safety communications (i.e., sheriff's associations, police or fire chief associations, etc.)

- Hardware, software, connectivity and peripherals not attributable to the delivery of 9-1-1 service:
  - Law Enforcement Record Management Systems, Fire Records Management Systems, EMS Records Management Systems, Jail Records Management Systems, LEIN costs for non-9-1-1 functions (e.g., Records unit), Word processing, databases, etc. not directly attributable to 9-1-1 service, GIS not directly related to the delivery of 9-1-1 service, Court Information Systems, Connectivity for any of the above, Maintenance and service agreements for any of the above, Software licensing for any of the above, Non-Emergency N-1-1 systems

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

- Professional Services not directly attributable to the delivery of 9-1-1 service.

- Public Information not directly attributable to the delivery of 9-1-1 service.

- Miscellaneous: Road Signs/Addressing Implements[18]

4.3 Pennsylvania

Pennsylvania is still determining the authorized use of the revenue from its newly enacting uniform surcharge, but the Statute does lay some parameters including:

> The money in the fund shall be used only for reasonably necessary costs that enhance, operate or maintain a 911 system in this Commonwealth in accordance with the Statewide 911 plan established by the agency. For the purposes of this paragraph, reasonably necessary costs shall be determined by the agency, in consultation with the board, consistent with the following: (i) The agency shall establish factors for reasonably necessary costs. (ii) The agency shall provide the factors annually through agency guidelines. (iii) Notwithstanding any guidelines provided by the agency, use of the fund by a 911 system or the agency to establish, enhance, operate or maintain Statewide interconnectivity of 911 systems or to establish a capital or operating reserve consistent with a 911 system plan shall be deemed reasonably necessary. (2) Money from the fund shall not be expended on a 911 system that does not conform to the standards and guidance published by the agency.19

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[18] ALLOWABLE/DISALLOWABLE USAGE OF 9-1-1 SURCHARGE FUNDS, Michigan State 9-1-1 Committee, *available at* http://www.michigan.gov/documents/ListingofAllowable_14259_7.pdf.
[19] 35 Pa. Cons. Stat. § 5306.1(c)

5. RECOMMENDATIONS

5.1 Single All Device Fee Funding Model

Users of new technologies may not be required by Ohio statute to pay 9-1-1 fees, even though they are able to access the 9-1-1 system. This means that local governments are left to subsidize 9-1-1 system access for providers and users of new technologies. Limitations of the existing revenue model drive the need for a new funding model. In order to provide the most adequate long-term funding source for 9-1-1 into the future, Ohio should consider a technology neutral, all-device funding mechanism, similar to those State examples detailed in the previous section, that aligns with The Ohio ESInet Technical Standards sub-committee's criteria:

- The funding method should encompass the principle of access, so that anyone capable of accessing the legacy and IP networks should share in the costs of 9-1-1 service.
- The funding method should be technology, vendor, and competitively neutral, so it does not give competitive advantages to one telecommunications, broadband, or data provider at the expense of other providers.
- The funds collected should be used only for their intended purposes and should not be re-allocated at the state or local level for non-9-1-1 purposes.
- The funding method should provide for the total cost of providing 9-1-1 service.
- The funding method should be easy to understand and administer.
- The funding method should be fair and equitable to all individuals and devices capable of accessing the current and future 9-1-1 network.
- The funding method should be stable, and therefore not require frequent legislative adjustments.

L.R. Kimball recommends that Ohio establish funding legislation that enacts one statewide fee for any device that can access 9-1-1. The legislation should be crafted to allow for future technologies and flexibility. It should also allow the state to modify the fee (either up or down) if needed within a set range. One fee for all devices will require Ohio to transition from the current "bill and keep" method currently in place for wireline 9-1-1 expenses. The transition could occur as the counties move to the NG9-1-1 network and capability, or could be done prior to that. In order to make an informed decision on the transition, it will be necessary to understand what the true current expenses are and to understand what the NG9-1-1 implementation plan and timeline will be. Carriers have been charging PSAPs for transitioning configurations needed to implement NG9-1-1 in Ohio, so, the Administrator should speak with the PUCO about the details related to these costs moving forward.

In addition to a fee on devices that access the 9-1-1 network, statutes, regulations and tariffs should enable system components to be shared among the participating agencies and there should be a mechanism for these agencies and entities to share the costs.

The funds from the statewide fee would be collected at the state-level and remain in a dedicated account that allows any interest accrued to remain in the dedicated account. Distribution rules should be established to specify what expenditures would be authorized uses for funds distributed to the counties. The PSAP funds should be used for 9-1-1 related expenses, such as costs to design, purchase, implement and maintain equipment (either leased or purchased), hardware or software, maintenance (both equipment and hardware/software), GIS, GIS maintenance, PSAP training, and UPS. The Ohio 9-1-1 Program Office might consider allowing additional PSAP expenditures to some areas as part of a consolidation incentive. For example, furniture/work station expenses or a percentage of personnel expenses.

Once the NG9-1-1 network is in place and operational for at least one year; L.R. Kimball recommends the State conduct a distribution study to revisit the distribution of funds; based at least partly on total 9-1-1 call volume. This

cannot be done until the new network is in place and call statistics are being tracked consistently in the same manner across the state.

L.R. Kimball recommends that the Department of Taxation audit service provider fee remittances annually to ensure accuracy and compliance with legislative intent. In addition, the Ohio 9-1-1 Program Office should audit state and local use of 9-1-1 revenues annually in order to ensure compliance with statutes and rules.

5.1.1 Fee Amount Models

L.R. Kimball offers two funding models that both include migrating to a single statewide all-device fee. One model involves applying the current $0.25 Wireless 9-1-1 charge to a single statewide all device fee environment. The other is a $0.20 single statewide all device fee. Legislation should be crafted to allow the state to modify the fee (either up or down) if needed within a set range based on the funding needed to provide 9-1-1 in the State.

5.1.1.1 Methodology

A few factors complicate the ability to project revenue for a single statewide all-device fee. Ohio's current revenue from wireless phones does not equate with the number of wireless phone subscriptions in Ohio. Ohio is currently collecting $25,000,000 from the Wireless 9-1-1 charge and Prepaid Wireless 9-1-1 charge, however, the FCC reports that there are 12,198,000 wireless subscriptions in the State.[20] There is an approximate 32 percent discrepancy between the number of wireless phones in the state and the amount being collected from wireless providers. This discrepancy can be due to several variable and/or unknown factors such as cell phone number portability and wireless provider cost recovery. Additionally, not all IP devices can connect to 9-1-1 yet, a factor that Ohio is looking to resolve in the future with the implementation of an all device fee. L.R. Kimball uses the approximate 32 percent differential in the funding methodology laid out below to estimate realistic revenues for a transition to an all device fee in the current environment.

L.R. Kimball used the following methodology to estimate the revenue for each funding model option. L.R. Kimball used an estimated number of IP devices in Ohio based on the 2014 census and the Cisco published white paper statistic that there were 2.2 network devices per capita in 2015.[21] As of the 2014 Census, Ohio's population is 11,594,163.[22] So, there is an estimated 25,507,158.6 IP devices in Ohio based on that statistical data. However, because of the 32 percent differential discussed above, L.R. Kimball subtracted 32 percent from the estimated number of IP devices in order to account for the unknown and variable factors resulting in an estimated total of 17,344,868 IP devices in Ohio which includes the traditional wireless, prepaid and voice over internet protocol access devices. In order to get an estimated number of all of the devices that would fall under the all-device umbrella, L.R.

[20] Local Telephone Competition: Status as of December 31, 2013, FCC, available at, https://apps.fcc.gov/edocs_public/attachmatch/DOC-329975A1.pdf.
[21] The Zettabyte Era: Trends and Analysis, cisco, June 2016, available at, http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/vni-hyperconnectivity-wp.html.
[22] State Facts for Students, US Census Bureau, http://www.census.gov/schools/facts/ohio.html.

Kimball added Ohio's wireline access lines as reported by the FCC (2,464,000)[23] resulting in a grand total of 19,808,868 devices to fall under the recommended fee as applied in the funding models in the following sections.

5.1.1.2 Twenty-five cent single statewide all device fee option

If the estimated 19,808,868 devices in Ohio were subjected to a monthly $0.25 9-1-1 fee, equal to the current Wireless 9-1-1 Charge, an estimated $59,426,604 would be collected annually, $56,490,930 of which would be available for 9-1-1 systems and operational upgrades if the current statutory model is used for receiving, distributing and accounting for the funds, as discussed below.

It should be noted that, according to current statute, wireless service providers or resellers may retain as a billing and collection fee two per cent of the total wireless 9-1-1 charges it collects in a month.[24] An all device fee will involve new kinds of providers. If a billing and collection fee is legislated at two percent for the all device fee as it currently reads in statute, than a blanket two percent off of the top would leave a revenue of $58,238,072.

If the same model is used for receiving, distributing, and accounting for amounts received from the wireless 9-1-1 charges in ORC 128.54, then 97 percent ($56,490,930) of the $58,238,072 revenue would be deposited into the 9-1-1 Government assistance fund for disbursement to the counties, one percent ($582,381) would be deposited into the wireless 9-1-1 administrative fund to be used by the tax commissioner to defray the cost of carrying out ORC Chapter 128 and two percent ($1,164,761) would be deposited into the 9-1-1 program fund to defray the costs of the steering committee in carrying out its duties under the statute.

5.1.1.3 Twenty cent single statewide all device fee option

If the estimated 19,808,868 devices in Ohio were subjected to a monthly $0.20 9-1-1 fee, a decrease to the current Wireless 9-1-1 Charge, an estimated $47,541,283 would be collected annually, $45,192,744.26 of which would be available for 9-1-1 systems and operational upgrades if the current statutory model is used for receiving, distributing and accounting for the funds, as discussed below.

It should be noted that, according to current statute, wireless service providers or resellers may retain as a billing and collection fee two per cent of the total wireless 9-1-1 charges it collects in a month.[25] An all device fee will involve new kinds of providers. If a billing and collection fee is legislated at two percent for the all device fee as it currently reads in statute, than a blanket two percent off of the top would leave a revenue of $46,590,458.

If the same model is used for receiving, distributing, and accounting for amounts received from the wireless 9-1-1 charges in ORC 128.54, then 97 percent ($45,192,744.26) of the $46,590,458 revenue would be deposited into the 9-1-1 Government assistance fund for disbursement to the counties, one percent ($465,904) would be deposited into the wireless 9-1-1 administrative fund to be used by the tax commissioner to defray the cost of carrying out ORC Chapter 128 and two percent ($931,809) would be deposited into the 9-1-1 program fund to defray the costs of the steering committee in carrying out its duties under the Statute.

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[23] Local Telephone Competition: Status as of December 31, 2013, FCC, available at, https://apps.fcc.gov/edocs_public/attachmatch/DOC-329975A1.pdf.
[24] ORC 128.46(a)(2).
[25] *Id.*

5.2 Economic Impact

The State should evaluate each funding model and consider which will generate the funding needed for implementation and maintenance of a Next Generation 9-1-1 system while reducing the economic impact to the citizens of Ohio.

If the State chooses to makes no changes to the current legislation other than going to a single device fee and utilizing the same funding formula currently in place, the State would generate approximately $34 million in additional annual revenue from the wireless carriers (based on the estimated 19,808,868 devices).

If legislation is changed to migrate to an all device fee, at $0.20 per device, the state would generate approximately $47.5 million in revenue annually (based on the estimated 19,808,868 devices). Even if you were to lower the all device fee to $0.15 per device, the State would generate approximately $35.6 million in revenue annually.

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6. CONCLUSION

L.R. Kimball recommends that the State of Ohio move forward with a technology neutral, all-device funding mechanism to transition to a NG9-1-1 network and foster organic consolidation of PSAPs across the state. In order to provide a level of service that meets the expectations of Ohio's citizens and to keep up with technological changes, Ohio PSAPs need an end-of-lifecycle technology replacement to convert the analog 9-1-1 system to an IP-enabled digital broadband network that will provide enhanced functionality throughout the state. The implementation of NG9-1-1 will result in an environment that more efficiently utilizes the wireless 9-1-1 administrative funds and may eventually result in a natural consolidation of PSAPs in the State.

It is imperative that Ohio keep its 9-1-1 system up-to-date with technology and move toward the Next Generation of 9-1-1. Updating technologies and implementing new networks now will assure that Ohio is prepared to support and participate in any national initiatives to share critical data in the future. The safety of Ohio's citizens is dependent upon providing the highest level of public safety available.

Ohio also needs to keep up with citizen expectations of the 9-1-1 system in order to adequately maintain the public's safety. Doing nothing and leaving the public safety of Ohio citizens to an antiquated analog system that is not compatible with modern communications technologies is not a viable option.

This is an initial funding analysis. Once the responses to the RFP are received and we evaluate the costs associated with the responses, there may be an addendum to this document addressing the funding options that will be needed.

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