

STATE OF MICHIGAN

STATE 911 PLAN



Compiled and Presented by the
Emerging Technology Subcommittee
Adopted by the State 911 Committee on June 14, 2017

FEBRUARY 21, 2017

REVISION

3.0

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1. EXECUTIVE SUMMARY

1.1 Background and Purpose Summary

Providing optimum 911 services for its citizens is a long established priority for the state of Michigan. For more than 30 years, a collaboration of legislators, state and county personnel, Public Safety Answering Point (PSAP) agencies, and telecommunication providers have worked together to provide the necessary enhanced 911 framework. This framework is a multi-dimensional system composed of landline, wireless, and internet communication providers that allows delivery of 911 calls through a complex network of routers, switches, databases, and emergency dispatch communication centers. All parts of this network must be able to seamlessly integrate and interact with each other.

Just as 911 technology continues to evolve and change, the Michigan laws that determine the architectural network, 911 legislative and regulatory oversight, training standards, and funding mechanisms need to transform and adapt. The state statutes that provide 911 funding mechanisms will sunset in December 2021.¹ However, changes to Michigan's 911 funding stream and the subsequent impact on the continued migration from a legacy system to a Next Generation 911 (NG911) Internet-Protocol (IP) system must be immediately addressed. The State 911 Plan is one more tool to help guide Michigan through this process by providing professional vision and leadership that will lead Michigan to a NG911 system. The plan is designed to be used by all the 911 stakeholders, state/county/local 911 authorities, and emergency communication centers. Local law enforcement, fire services, emergency medical service (EMS), Homeland Security, military officials, and State and Federal legislators may also utilize this planning aid.

The State 911 Plan continues to identify and monitor Michigan's 911 goals and objectives. It is a "living document" that will be updated as needed. Since the adoption of the State 911 Plan, the updates have identified a decrease in the number of Michigan PSAPs. Adoption of a statewide plan for the coordination and implementation of 911 allows Michigan to apply for Federal funds, and allowed Michigan to receive matching funds for the Federal ENHANCE 911 Act Geographic Information System (GIS) grant in 2010.

Michigan's 911 service is enabled and governed by Public Act 32 of 1986² and its subsequent amendments. This Act created the State 911 Committee and provided the mechanism for the public/private collaboration of subject matter experts that have worked to identify and resolve numerous key 911 issues.³ Recommendations from the State 911 committee and its various subcommittees have been incorporated into several 911 statutes.⁴

Since the 1980s, Michigan has moved from receiving and processing wireline Enhanced 911 (E911) calls, through Enhanced Phase I and Phase II (wireless call processing and routing), through its deployment of Voice over Internet Protocol (VoIP) 911 calls, to its current deployment of NG911.

Soon, Michigan's 911 framework will have to provide access to public emergency services by any communication device in any format, both voice and data, including text messaging, video, photographs, and automatic crash notification. A comprehensive feasibility study of NG911 (Internet Protocol IP-Based network) was completed by the Kimball Corporation in 2009.

The State 911 Committee requested that the Emerging Technology Subcommittee assist the State 911 Administrator in the development of the Plan.

The subcommittee conducted independent research and utilized information compiled by Kimball Corporation (IP-Based feasibility study) to assist in developing the initial plan, which was approved by the State 911 Committee in September 2011. The 2017 revision will follow a similar approval procedure.

¹ P.A. 379 of 2008 <http://legislature.mi.gov/documents/2007-2008/publicact/pdf/2008-PA-0379.pdf>

² P.A. 32 of 1986 <http://legislature.mi.gov/doc.aspx?mcl-act-32-of-1986>

³ MCL 484.1712

⁴ P.A. 249 of 2006 <http://legislature.mi.gov/documents/2005-2006/publicact/pdf/2006-PA-0249.pdf>

2. INTRODUCTION

This section will provide a brief background of Michigan's 911 system and an introduction to the 911 Plan and its purpose.

2.1 National Overview of the History and Background of 911

The concept of a nationwide emergency telephone number was first adopted in Great Britain in 1937. In the United States in 1967, President Johnson's Commission on Law Enforcement and Administration of Criminal Justice recommended a nationally uniform three-digit emergency telephone number. In November of that year, the FCC met with the American Telephone and Telegraph Company (AT&T) and shortly thereafter AT&T announced it had reserved the numbers 911 for emergency use nationwide.

The nation's first 911 system was implemented by the Alabama Telephone Company in Haleyville, Alabama. On February 16, 1968, Alabama Speaker of the House, Rankin Fite, made the first 911 call from the Haleyville City Hall. Congressman Tom Bevill answered the call on a red telephone located in the police department.⁵

When 911 service was first introduced, 911 calls were sent to a single destination based on the caller's telephone exchange. Since there was little or no correlation between a telephone exchange boundary and the emergency responder's jurisdiction, a 911 call could end up at a Public Safety Answering Point (PSAP) that did not serve the caller's location. This early 911 service, now known as Basic 911, did not provide any telephone number or location information with the call. It was a voice service only; the caller had to provide his or her location and call back information.

Significant advancement in 911 technology occurred with the introduction of E911 in the 1980s. This level of service enabled a 911 call to be selectively routed to the PSAP serving the caller's location, and delivered that call with Automatic Number Identification (ANI) and Automatic Location Identification (ALI). Other features, such as selective transfer, further streamlined the call handling process.

The pace of change in telecommunications technology continues to increase rapidly. Voice over Internet Protocol (VoIP), text messaging, and picture messaging are being enthusiastically adopted by consumers for their everyday communications – and these same consumers expect to be able to use these technologies to communicate with 911.

2.2 Overview and Background of Michigan 911

In 1986, the Michigan Legislature enacted Public Act 32, also known as the Emergency Telephone Service Enabling Act and commonly referred to as PA 32 in the Michigan 911 community. While there had been 911 programs in several jurisdictions throughout the state, PA 32 facilitated the onset of enhanced 911 systems through the state. Public Act 32 set out several requirements for the establishment of 911 systems, including empowering counties as the local unit of government to enact the 911 plan and serve as 911 in the service districts⁶; provisions for the telephone service providers to recover recurring and non-recurring costs through a technical surcharge on the service subscribers and, minimally, system requirements for operational, managerial, technical, and fiscal considerations. The act also required that plans identify the Public Safety Answering Points (PSAPs) within the service district, public notice and hearing for the initial plan and subsequent changes to it, and provisions for units of government to "opt out" of participation in the plan. PA 32 also established the Emergency Telephone Service Committee⁷ to provide guidance on policy and technical issues regarding 911.

PA 32 has been amended a number of times since its inception in 1986; the most notable of those amendments included the following:

⁵ Alabama Chapter of NENA website, "World's First 911 Call" http://www.al911.org/first_call.htm (April 18, 2008)

⁶ Wayne County is recognized by PA 32 as the exception and it has four separate service districts. These service districts are: Conference of Western Wayne, Conference of Eastern Wayne, Detroit, and Downriver Mutual Aid.

⁷ PA 165 of 2007 removed the word "telephone" from the committee's title to reflect changing technology. It is now commonly known as the State 911 Committee (SNC).

PA 29 of 1994:

- Permitted counties to enact operational surcharges by geographical boundaries of the county by commission vote⁸, ballot proposal⁹, or a combination of the two¹⁰.
- Gave powers of county commission to establish an emergency 911 district board for a consolidated dispatch and determine that board's scope of authority.

PA 78 of 1999:

- Imposed a surcharge on wireless devices for the purposes of implementing Phase I and II wireless 911.
- Established a cost recovery mechanism for wireless providers to deliver wireless 911.
- Set amounts for distribution of wireless surcharge to counties for costs of 911 service and to PSAPs for training dispatch personnel.

PA 244 of 2003:

- Set deadlines for counties to deploy Phase I and II wireless 911.
- Funded the State 911 Office.
- Set date to end cost recovery for wireless providers.

PA 164 & 165 of 2007:

- Changed local landline operational 911 surcharge to a local "all-device" surcharge.
- Changed statewide wireless 911 surcharge to a statewide "all-device" surcharge.
- Gave rulemaking to the Michigan Public Service Commission over Multi-Line Telephone Service (MLTS) location information, 911 dispatcher training, and standards for operational policies for PSAPs, and receipt and use of 911 funds.

PA 379 of 2008:

- Allowed county commissioners to put up to \$0.42 local "all-device" monthly surcharge by resolution and seek up to \$3.00 by ballot proposal

PA 269 of 2010:

- Allowed the use of \$1.7 million of the former CMRS funds to be used for matching funds for the ENHANCE 911 grant match to establish a statewide GIS repository for use by all PSAPs in the state to share GIS mapping data.

PA 260 of 2012:

- Requires a retailer to collect a prepaid wireless 911 surcharge at the point-of-sale at a rate of 1.92%.

By October 2005, every county in the state of Michigan except for one had county wide enhanced 911 services, and by the end of 2005 all counties in the state were capable of processing wireless Phase II calls. In May 2008, the final county without enhanced 911 became fully enhanced with 911 service, making the state of Michigan fully capable of enhanced 911 for both landline and wireless 911.

In addition to the statewide delivery of enhanced 911 on both wireless and landline communications services, the 911 system in Michigan has also reached broad delivery of VoIP 911 and telematics 911 routing, and an interim text-to-911 solution has been deployed in many counties. Even with this progress, changes in technology are presently being experienced by Michigan's 911 community, as 911 centers move toward NG911. New forms of emergency communications, such as text messages, streaming video and video relay services (VRS). While the current Publicly Switched Telephone Network (PSTN) had been able to accommodate wireless and VoIP technologies through system adaptations, it does not have the capacity or functionality to accommodate digital communications. Evolving technologies and the expectations of the public to access 911 through them, including the speech and hearing

⁸ Up to 4% of the highest monthly base rate in the service district, not to exceed \$.80.

⁹ Up to 16% of the highest monthly base rate in the service district, not to exceed \$3.20.

¹⁰ Total not to exceed \$4.00.

impaired community that rely on data messages rather than voice, have made it clear that the current 911 network is no longer adequate.

The purpose of this plan is to outline the process toward a NG911 system that is capable of delivering and transferring a 911 call for help on any device, through voice, data, or both, that can initiate a 911 call within the state. It is also the purpose of this plan to address operational issues that the State 911 Committee recognizes as key to the successful overall delivery of 911 in the state. It is the intent of the State 911 Committee to leverage all resources available to the 911 community to reach that end.

Those resources include: funding, through both state and federal sources; the utilization of impartial contracted services¹¹; and the long-standing collaborative system involving stakeholders at every level in the 911 community. Michigan's 911 history is a demonstration of progress and adaptability. As we move into the challenges of NG911, this next chapter in technology, we will continue that legacy.

3. CURRENT 911 ENVIRONMENT

3.1 Current Legislative and Regulatory Environment and Program Structure

The state-level 911 coordinating function is led by the State 911 Committee, which is a statutorily created committee under Michigan's Public Act 32 of 1986, as amended. The Committee is tasked with providing assistance in the implementation of 911 systems in Michigan.

Administrative support to the State 911 Committee is provided by the State 911 Administrator's Office located in the Michigan State Police (MSP) Support Services Bureau (SSB). The Committee may recommend technical and operational standards for PSAPs and model 911 systems, as well as provide assistance for the design, implementation and operation of those systems. The Committee does not have rulemaking authority. That authority rests with the Michigan Public Service Commission (MPSC), in consultation with the Committee, for the following specific 911 matters:

- Uniform policies, procedures, and protocols for 911 services in counties and Public Safety Answering Points (PSAPs) in the state.
- Training standards for PSAP personnel.
- Standards for the receipt and use of 911 funds.
- Requirements for multi-line telephone systems.

The mechanisms for coordinating the implementation of 911 system(s) and monitoring those operations and progress by the Committee include a diverse set of subcommittees. These subcommittees, which make recommendations to the Committee, draw from both the public and private sectors of the 911 community in Michigan. The subcommittees include Emerging Technology, Certification, Dispatcher Training, Policy, and Legislative Action. Subcommittees often utilize additional work groups for matters requiring more specific technical and policy input. Participation in these groups is guided by the Committee by-laws. Subcommittee meetings are posted in advance, are open to the public, and work group participation is active and encouraged. Activity of the Committee and its subcommittees are posted on the State 911 web site at www.michigan.gov/snc.

All PSAPs have methods of access to communication that allow them to coordinate and operate with each other; examples of this include data, telephony, and radio. Radio communications between PSAPs are varied. In some areas of the state there are high levels of radio interoperability between PSAPs and in others areas radio interoperability has not been achieved. There are efforts in these areas of the state to achieve interoperability.

Michigan has recently updated its 911 statute (PA 379 of 2008) and it recognizes that updates will likely be needed based on the progress of the NG911 system in Michigan. An annual report on the status of Michigan 911 is presented to the legislature each year, as well as legislative recommendations which may need to be considered in the forthcoming year.

¹¹ Under PA 164 of 2007, MCL 484.1408(5) appropriated \$500,000 for a feasibility study for an IP-based 911 system in Michigan. In 2008, the state contracted with the Kimball Corp. to conduct that study. The final recommendations were presented to the State 911 Committee in December 2009. In March 2010 the contract with the Kimball Corp was extended to include assistance with the development of a plan to migrate to a NG911 system.

3.2 Current 911 Technology

3.2.1 Overview

Michigan currently has three 911 Service Providers which may change as NG911 is deployed.

- AT&T – providing service in the Lower Peninsula only.
- Frontier Communications – providing service in the Lower Peninsula only
- Peninsula Fiber Network, LLC (PFN) – providing service in both the Upper and Lower Peninsulas.

AT&T is the 911 Service Provider for 145 Primary, 5 Secondary, and 23 Back-up (combination of fully featured and voice only) PSAPs. AT&T also provides trunk routing to 13 Frontier-hosted Primary PSAPs.

Frontier Communications is the 911 Service Provider for 22 Primary PSAPs, and 4 back-up PSAPs. Frontier Communications also provides trunk routing to 16 AT&T-hosted Primary PSAPs, 2 AT&T-hosted Secondary PSAPs, and 1 AT&T-hosted Back-up PSAP.

Peninsula Fiber Network is the 911 Service Provider for 21 Primary PSAPs and 2 back-up PSAPs. PFN has established interoperability trunk routing to four of the seven legacy selective routers for PSAP transfers between 911 providers.

3.2.2 Landline E911 Infrastructure

3.2.2.1 System Level of Service

All subscribers of communication service providers are served by PSAPs capable of receiving and processing Enhanced 911 calls.

3.2.2.2 PSAPs

PSAPs utilize multiple CPE vendors throughout the state.

The majority of the PSAPs have their wireline and wireless traffic delivered via one incoming trunk group from their respective 911 service provider.

3.2.2.3 LEC 911 Selective Routers

AT&T uses five Lucent 5 ESS 911 tandem switches in Michigan's Lower Peninsula located in Ann Arbor, Bay City, Cadillac, Grand Rapids, and Rochester.

Frontier Communications uses a Lucent 5ESS 911 tandem switch in Muskegon, a Nortel DMS100 911 tandem switch in Alma, a CML ECS1000 tandem switch in Bellaire, and a CML ECS1000 tandem switch in Adrian.

Peninsula Fiber Network uses four INdigital Emergency Services Routing Proxies (ESRP) located in Baraga, Munising, Southfield and Grand Rapids. Unlike the more traditional selective routers, this routing mechanism is in line with NG911 standards and capable of NG911 features and functions.

3.2.2.4 ALI Database

AT&T provides ALI service to Michigan PSAPs through redundant centralized ALI databases located in Southfield and Northbrook, Illinois. Each PSAP is served by two ALI circuits, one connected to each database. The network provides redundancy and flexibility for future enhancements.

Frontier Communications provides ALI service to Michigan PSAPs through redundant centralized ALI databases located in Ft. Wayne, IN and Everett, WA. Service is provided by redundant IP circuits to each database.

Peninsula Fiber Network provides ALI service to Michigan PSAPs through redundant ALI databases located in Baraga, Munising, Grand Rapids, and Southfield.

The state statute authorizes each county board to implement a county 911 plan. The plan is then required to designate the Operational, Fiscal, Technical, and Managerial consideration of that county's 911 system. This includes designation of the PSAPs, services providers, and the funding for the 911 structure within the county. All eighty-three (83) counties in Michigan have a 911 service plan in place and provide enhanced 911 for wireline, wireless Phase II, and VoIP. There are one hundred forty-three (143) PSAPs networked in the state and five (5) secondary PSAPs.

3.3 Economics

3.3.1 Current Funding Mechanisms

In 2007, Michigan amended its 911 statute to require all communications services that can provide access to 911 to collect and remit the 911 surcharge, regardless of technology. This was a significant advancement as it broadened the surcharge base by making it technology neutral, which will help provide a more solid foundation for the future.

Under MCL 484.1401, Michigan currently has three statutory funding provisions for 911: 1) a statewide "all devices" surcharge, 2) a county "all devices" operational surcharge, and 3) a technical fee (wireline based).

Michigan's statewide 911 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 911 Fund; distributing the funds to the counties, LECs, and the PSAPs as directed by the Committee; and accounting for all transactions from the 911 Fund.

Funds generated by the State 911 surcharge of \$0.19 on all devices that can access 911 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 911 network costs for delivery of wireless calls to PSAPs as approved through the MPSC case U-14000.
- 6.0% - To 911 training program.
- 1.87% - To administer the act and fund the State 911 Office.
- 1.88% - To the Michigan State Police (MSP) to operate a regional dispatch center that receives and dispatches 911 calls.

In addition to 911 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 911 programs.

Michigan statute, under MCL 484.1401, also provides for a technical charge that allows landline providers within the 911 service district to assess an emergency telephone technical charge on their subscribers to cover the cost to provide the E911 network, databases, and trunking in that 911 service district. The amount is calculated by dividing the provider's actual costs by the number of exchange access facilities within the 911 service district. The landline provider can bill and keep the technical charge. The Telecommunications Association of Michigan (TAM) contracts with a CPA firm (McCartney and Associates) to conduct a true up at the end of each year, and each provider pays its portion of the accounting costs.

3.3.2 Current Revenues and Costs

Using the information available to the State 911 Committee in 2015, the operational costs to the counties for providing 911 was approximately \$240,529,770.46 (Baraga County did not report) and was funded to the total of \$257,312,334.71 by the sources as follows:

| Category | 2015 Amount | 2014 Amount |
|----------|-------------|-------------|
|----------|-------------|-------------|

| | | |
|--------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| Total Budget | \$ 240,529,770.46 | \$ 210,173,760.73 |
| Local Operational Surcharge | \$64,755,058.74 | \$60,606,236.97 |
| Millage | \$33,018,238.38 | \$31,958,730.33 |
| General Fund | \$114,742,581.20 | \$72,910,563.50 |
| State | \$24,396,873.69 | \$22,986,774.39 |
| Other Revenues* *Sources include: grants, interest earned, sale of equipment, tower rental, etc. | \$20,399,582.70 | \$10,043,380.77 |

While not all landline providers participate in the technical surcharge pooling process, based on the annual accounting of the landline providers and the “true up” performed by McCartney and Associates, the estimated total figure for technical costs in 2015 was \$7,028,674. However, information was not provided to the State 911 Committee by Baraga County. Wireless and VoIP 911 technical costs cannot be determined because they are self-recovered and unique to each provider.

3.3.3 Next Generation Considerations

The costs of NG911 are not known at this time, nor has the final method of a Next Generation solution been determined. The methods for initiating implementation are spelled out in further detail in Section 9 of this plan.

3.3.4 Allocation/Distribution of State and Federal Funding for Equipment and Operations Allocation of State Funding

The statutory framework of the distribution of state-collected 911 funds is detailed in section 3.4.1 above. MCL 484.401b(14) recognizes the allowable and disallowable uses of the 911 funds collected by the counties and the state. That list is included as Appendix B and generally states:

Allowable Uses:

- 911 call handling equipment
- Master logging recorders
- Instant call check recorders
- TeleTypewriter/Telecommunications Device for the Deaf (TTY/TDD)
- Mapping
- Back-up power
- Training
- Public education
- Contracted services

3.3.5 Allocation of Federal Funding

At this time, federal funding of 911 systems in Michigan has been limited and usually in the form of Homeland Security grants through local Emergency Management programs. These projects, while very beneficial, have been local either at the county or municipal level, and are limited in scope and size. Any federal funding received as a part of the

implementation of this plan's goals and objectives towards NG911 (see Section 5 on page 15) will be utilized within the requirements of the receipt of those funds.

4. FUTURE ENVIRONMENT

4.1 Vision Statement

Michigan shall utilize evolving technology to enable all PSAPs to receive, process, and dispatch 911 requests for emergency services effectively and efficiently to meet the needs of the citizens, public safety, and the service providers.

4.2 Services and Capabilities

Michigan PSAPs will maintain their current excellent standard of 911 service delivery as they migrate to Next Generation 911 (NG911). Historically, governance and control of 911 at the County level of government has proven efficacious in Michigan, as County Boards of Commissioners are in the best position to understand the needs and operations of the local emergency services providers and citizens. However, new regional or other models of governance and control may emerge as technology evolves.

With migration to the NG911, Emergency Services Internet Protocol-enabled network (ESInet), access will be enabled to public emergency services by any communication device and will enhance response by providing responders access to video, photographs, automatic crash notification data, and other data files.

The ESInets will also enable service arrangements by minimizing the need for some PSAPs to be in one physical location, promoting flexibility in the form of virtual PSAPs and virtual back-up PSAPs. While physical consolidation of PSAPs is often cost prohibitive, the flexibility to share services, equipment, and functions on an interconnected network will lead to more effective and efficient call processing.

4.3 Infrastructure, Equipment and Technology

The National Emergency Number Association (NENA) defines NG911 as “A system comprised of Emergency Services IP networks (ESInets): IP-based Software Services and Applications, Databases and Data Management processes that are interconnected to Public Safety Answering Point premise equipment. The system provides location based routing to the appropriate emergency entity. The system uses additionally available data elements and business policies to augment PSAP routing. The system delivers geodetic and/or civic location information and the call back number. The system supports the transfer of calls to other NG911 capable PSAPs or other authorized entities based on and including accumulated data. NG911 provides standardized interfaces for call and message services, processes all types of emergency calls including non-voice (multi-media) messages, acquires and integrates additional data useful to call routing and handling for appropriate emergency entities. NG911 supports all E911 features and functions and meets current and emerging needs for emergency communication from caller to Public Safety entities.”

Michigan will achieve NG911 through a phased approach, including the development of local and regional intranets capable of supporting an IP-Based 911 system; the development of public and/or private networks capable of transferring IP data between and among local networks; the development of appropriate interlocal agreements and supporting legislation; the technology to interconnect multiple networks seamlessly; and the replacement of PSAP Customer Premises Equipment (CPE) with equipment capable of receiving and processing IP data, resulting in a statewide interconnected and interoperable system of local, regional, and national emergency services networks.

Considerations are:

- Infrastructure must be scalable and extensible.
- Infrastructure must be public safety grade, i.e. it must meet a higher level of availability, resiliency, reliability, security, and survivability than non-mission critical enterprise network infrastructure.
- Not all PSAPs/counties/regions will migrate at the same time. The legacy network and selective routers supporting the circuit switched network must continue to function. In concept, the legacy system would eventually connect to an ESInet gateway and convert legacy wireline/wireless 911 calls from analog into Session Initiation Protocol (SIP), attaching the caller's location information and presenting the call to the ESInet.
- Local, regional, and state ESInets must avoid potential single points of failure. Lack of redundancy and diversity in the 911 network can impact the reliability of 911 systems.
- There must be sufficient bandwidth and speed for data sharing between PSAPs.

- Existing state-wide GIS data services should be considered for database sharing across the network using centralized databases while existing systems should be interfaced as deemed necessary. The network's increased capacity and speed will allow efficient transfer of mapping, CAD, and CPE call data for use in NG911.
- Regional 911 ESInets will require connectivity and plans should be carefully established. Plans and agreements should also be established for 7 X 24 X 365 monitoring and maintenance on interconnected ESInets.

4.4 Operations, Staff, and Training

Operations, staffing and training are the responsibility of the Michigan PSAPs, within the guidelines and standards established by the Michigan Public Service Commission upon recommendation of the State 911 Committee. It is critical that PSAP Administrators remain current on evolving multimedia technology and standards throughout the transition to NG911 and adjust operational procedures and policies, staffing levels, and training programs accordingly.

4.5 Governance

Governance and control of 911 has historically resided with the County Board of Commissioners, local governmental entities, and Authority Boards. It is envisioned that this model will continue, although evolving technology may lead to regional or other cooperative governance mechanisms.

The Michigan statute (PA 32 of 1986, as amended) defines a Consolidated Dispatch within a 911 Service District and the mandatory members of an Authority Board governing such an entity. Other models may evolve as technology reduces geographical limitations.

The State 911 Committee will monitor the maturing system and propose statutory amendments that address more flexible governance models and Committee structure as necessary.

Governance of 911 should not only focus on the basics of how and who oversees the provision of services, but also provide broad guidance on a statewide basis given Michigan's "local" control environment of today. Items that should be considered in future rule making with evolving technology and competition in the provision of 911 services should include, but not be limited to:

4.5.1 Public Access to Emergency Communications

- Include the requirements for provision of 911 service
- Definition of emergency communications system(s)
- Definition of communications service provider
- All communications service providers are subject to 911 rules and regulations
- Requirements for multiple line telephone systems (MLTS); requirement for all new technologies to provision emergency communications services

4.5.2 Data Privacy

- Ensure privacy protections of citizens who call 911 to the extent guaranteed by statute
- Develop and maintain rules for use of 911 data for:
 - All agencies necessary to have access to the appropriate data for calls in progress
 - Outbound notification systems for public safety purposes

4.5.3 Data Service Standards

- Promulgate appropriate service standards for provisioning of emergency communications system and services
- All communications service providers shall have minimum service standards for provisioning of emergency communications systems and services

4.5.4 Funding to Achieve the Vision

Funding for local 911 service is historically the responsibility of the County Board of Commissioners. A number of funding mechanisms have been available to the counties, including special millages and surcharges on communication devices. The State of Michigan also collects a surcharge on communication devices, a portion of which is returned to the counties to help offset costs.

It is imperative that the NG911 ESInets be cost effective and competitive so that no additional costs are placed on Michigan taxpayers. The ability of many types of emergency services to share the ESInet should result in economies of scale. Fair cost allocation methodologies among all stakeholders will need to be developed.

Future work to ensure adequate and appropriate funding to support the provision of 911 services should include the historical groundwork already laid here in Michigan, but also look to embrace these key principles:

- Ability to authorize fee assessment and collection process
- A robust yet flexible means for adjustment of an established rate or rate structure already in place
- Define the mechanism for cost recovery, if necessary and appropriate

4.5.5 Stakeholder Engagement and Communications

PSAP Administrators must be prepared to handle contingency planning devoid of geographical constraints. PSAPs must develop up front agreements with neighboring and regional PSAPs, at a minimum, regarding cooperation and protocols.

PSAP and provider network administrators must discuss and codify in written agreements responsibility for design, development, deployment, security, monitoring, and reactive and preventative maintenance.

Database Administrators must develop widely diverse databases inherent in NG911 and collaboratively develop service issue resolution and escalation, data quality assurance measures, security and data rights management.

Public information and education will be critical to the success of the implementation. The expectations of the public must be specifically established and communicated, especially throughout transitional phases during which 911 and PSAP capabilities may be different in various areas of the state.

4.5.6 Federal Government and Other National Factors

The Michigan 911 system will remain compliant with all Federal laws pertaining to 911 service.

4.5.7 Service and Application Providers

NG911 will introduce new service and application providers as needs for IP connectivity, monitoring, and maintenance evolve.

4.5.8 Infrastructure and Equipment Providers

NG911 will introduce new infrastructure and equipment providers to 911. The existing legal and regulatory environment will have to be reviewed and revised to allow: 1) architecture and technology neutrality, 2) the potential delivery of new services by non-Local Exchange Carrier service providers, 3) the extension of liability protection to current and future network service providers, and 4) the alignment of new service arrangements, costs, and funding mechanisms to support infrastructure.

4.5.9 Other Emergency Service Providers

Michigan will have working relationships with (and the ability to seamlessly share data with) other state and federal agencies that provide or support emergency services.

4.5.10 Other related state services

The Michigan NG911 system will be interactive and capable of two-way communication, integrating a number of non-public safety private and governmental services, such as suicide hotlines, trauma centers, poison control, road,

public works, weather services, and Emergency Management. The ESInet will enable both the PSAPs and the general public to receive real time information, alerts, and warnings.

5. GOALS, OBJECTIVES, AND MEASURES

The goals of the revised State of Michigan 911 Plan for the State 911 Committee are to:

- Efficiently and properly implement the funding systems established in Public Act 32 of 1986, as amended.
- Effectively carry out the development of best practices and model policies for PSAPs, local 911 governing units, and service providers as set out in Public Act 32 of 1986, as amended.
- Develop a strategy for moving Michigan's 911 system to a Next Generation 911 platform that is IP-based and capable of processing 911 calls on a technology-neutral basis.
- Issue Request for Information (RFI) to establish identity of qualified providers for IP-based 911 network and Emergency Services Internet Protocol network (ESInet) functional elements. An RFI may result in the subsequent issuance of a Request for Proposal (RFP).

5.1 State of Michigan 911 Plan Objectives:

Objective 1: Pursue collection enforcement provisions in the statute. With continued development of reporting and reviewing of revenue data, a recommendation from the SNC to the Michigan legislature should be proposed for legislative consideration. During 2015/2016, the LAS Subcommittee developed legislative recommendations. These were presented to and approved by the SNC in June 2016. The changes are targeted to be introduced to the Legislature in 2017.

Completion Date: December 31, 2017

Measurement(s): Accountability and financial measures are included in the SNC recommendations to be implemented when the legislation is enacted.

Objective 2: Recommend, in consultation with PSAPs, the implementation of set operational standards and model policies for PSAP operations, 911 fund use, service provider 911 delivery functions, and best practices for 911 governing authorities.

Completion Date: June 30, continually reviewed

Measurement(s): Issuance of administrative rules by the MPSC as recommended by the Committee.

Objective 3: Establish a written best practice document and model policies on interoperability for PSAPs as they transition from a legacy 911 system to a NG911 system.

Completion Date: July 31, 2018

Measurement(s): Approval of a best practice document by the SNC on PSAP interoperability in a NG911 environment.

Objective 4: Make available the statewide GIS Repository to route calls through the ESInet(s) being utilized in the State of Michigan.

Completion Date: June 2017

Measurement(s): Successful system test and use by those that are participating PSAPs.

Objective 5: Recommend, in consultation with PSAPs, the adoption of the NENA i3 standards for PSAP cybersecurity, as well as establishing a planned migration to the TFOPA EC3 concept for cybersecurity.

Completion Date: June 30, 2018

Measurement(s): Issuance of a cybersecurity plan and recommendation in the State 911 Committee's Annual 911 report to the Legislature.

5.2 Tracking Progress

The activity towards the accomplishment of meeting each of the goals and objectives will be included in the State 911 Administrator's quarterly report to the Committee. This will include an evaluation of the "on target" status of each goal and objective, and any corrective measures/ action plans that may be necessary for any goals or objectives that are not being met. The goals, objectives, and status of each will be included in the Committee's Annual 911 Report to the Legislature.

Successfully Completed Objective 1: Emergency 911 Service Standards for Training (AKA: Dispatcher Training Standards) were adopted and effective in December of 2012.

Successfully Completed Objective 2: Utilized the Enhanced 911 Grant to create a statewide GIS repository that houses GIS data for Michigan PSAPs. Seventy-two of Michigan counties are currently participating in the GIS repository.

6. RESOURCE ALLOCATION

The State 911 Office is under the management of the Michigan State Police, in accordance with PA 244 of 2003¹². The office provides staff necessary to carry out the duties of the State 911 Committee, to include an Administrator, assistant to the administrator, two analysts, and a student assistant.

Currently there are eighty-six (86) 911 plans in the state of Michigan (Wayne County has four emergency service districts and the other counties each have one). Each county or emergency service district oversees its 911 system as written in its plan. The State 911 Office provides guidance and oversight to the counties and districts. Staff from the office is assigned to assist specific subcommittees and workgroups of the State 911 Committee.

Much of the work done by the Committee is done via various subcommittees. These subcommittees are composed of subject matter experts from both the public (state and county/PSAP level) and private sector who volunteer their time and expertise, providing resources to the state at no charge. Existing subcommittees can guide the plan's operational standards, model policies, 911 fund use, service provider 911 delivery functions, and best practices for 911 governing authorities. Since this work is voluntary, no costs can be assessed. The knowledge and background of the subcommittee members are beneficial, and play an important role in the implementation of the Plan.

Resource allocation to meet the goals and objectives of the Plan is challenging. Comprehensive planning is needed to identify the additional workload created to fulfill the objectives to develop a system for notification, data collection, reporting, review, and compliance of the funding systems. The planning stage of the project must assess needs, rank priorities, identify the number of staff required, estimate costs, and establish a time line for various phases of the project. Until this is completed, it is difficult to determine if the current staff of the State 911 Office can manage the additional work and if the appropriate expertise is available. The State 911 Office has access to other state agencies (such as the Department of Technology, Management and Budget) that may be able to assist in the implementation of this plan.

Changes to Michigan legislation were enacted in 2007 and 2008 in an effort to provide stable 911 funding. As PSAPs are making the transition from the legacy environment to NG911, established revenue streams are coming up short. There are initiatives underway within the state to change the legislation in support of more stable funding streams for implementation and maintenance of NG911 infrastructure. When preparing the operational budget to implement the plan, it will be necessary to consider state, as well as counties' and local PSAPs' funding. Providing 911 service to Michigan residents is a county responsibility. The counties and PSAPs may need additional support staff, technical experts, and equipment to meet the Plan's goals.

Funding must also be considered for the long-term support of the Plan. While funding and funding allocations may be in place at the beginning of the project, it is possible that this will change over the course of time. Procedures need to be identified to address these possible changes.

It is important to remember the Plan will be constantly evolving as technology advances and funding mechanisms alter. The State 911 Committee continues to be proactive in its efforts to ensure 911 services for the state's residents and visitors, regardless of the format of the 911 call that is placed.

¹²Under PA 244 of 2003, MCL484.1408(4) allowed \$0.005 (½ cent) of the CMRS \$0.29 surcharge to be used by the Michigan State Police to establish the state E911 coordinator position. Under PA 165 of 2007, MCL484.1408(4)(d) that provision was changed to 1.87% of the state 911 surcharge to maintain the office of the state 911 coordinator.

7. UPDATING THE PLAN

Prior to 2009, there was no single 911 plan for the State of Michigan. Each of the state's eighty-three (83) counties prepared and maintained individual county-level (or in the case of Wayne County, four separate "Emergency Service District") plans.

The State of Michigan 911 Plan for 2009 was developed by, and will be updated by, the State of Michigan 911 Committee with assistance from the Committee's Emerging Technology Subcommittee and the State 911 Administrator. Beginning in 2009, the Plan will be included in the State 911 Committee's Annual 911 Report to the Legislature. The Plan will be reviewed and updated as needed.

Changes to the plan will be documented in the following manner:

- The Plan will be given a new version number following annual review and update cycle, or following any interim update necessary. The number given at that time is a full number, that is; 1.0, 2.0, etc.
- Any changes made to the Plan on an interim cycle are given a fractional number, that is 1.1, 1.2, etc.
- All changes will be noted in the "Changes to the Plan" Chart listed as an appendix to the Plan.
- The footers of all revised pages are edited to indicate that the page has been revised and will include the date of the revision.
- The Plan will be posted to the SNC website upon completion and approval of the review.

8. MECHANISM(S) FOR OVERSEEING AND MANAGING THE STATE'S 911 SYSTEM

In Michigan the 911 statute, Public Act 32 (PA 32) of 1986 (as amended), serves as the central oversight mechanism for 911 in the state. PA 32 sets out the authority for which a 911 system is enacted, as well as the minimum requirements of a 911 system. Under MCL 484.1303 (2)(a)(d) these requirements include: managerial, technical, operational, and fiscal considerations.

The State 911 Committee serves as a central coordinating body for 911 policy and planning. The Committee regularly issues best practices, model policies, and evaluates operational and funding compliance by PSAPs and counties through its compliance review system. By using compliance review, the Certification Subcommittee conducts comprehensive evaluations of local 911 operations, administration, and funding use. Further information is available at: www.michigan.gov/snc.

While the Committee has limited oversight powers, PA 32 currently permits direct oversight for funding use of 911 surcharges under MCL 484.1408(4)(a). Using this authority, the Committee has established a list of Allowable and Disallowable Wireless and Wireline 911 Surcharge Expenditures. In accordance with MCL 484.1401(b)(14), any changes made to the list's language must be transmitted to the Michigan Legislature 90 days prior to becoming effective.

The Michigan Public Service Commission (MPSC), in consultation with the State 911 Committee, may promulgate rules for uniform procedures, policies, and standards for the receipt and expenditure of 911 funds [Sec. 413(1)(c)].

The State 911 Committee is also required to issue an annual report to the Michigan Legislature and Governor regarding the status of 911 in Michigan. The report is a comprehensive accounting of the status of 911 in the state. All reports issued since 2000 are available through the Committee's web site at: www.michigan.gov/snc.

Any further oversight mechanisms for the forward movement into NG911 are pending the Michigan NG911 study and the adoption of selected recommendations by the Committee and the Legislature.

As described throughout this plan, the State 911 Committee is inclusive at all levels in its processes to guide the Michigan 911 system, and encourages the participation of all stakeholders in Michigan's 911 community.

9. MECHANISM FOR INITIATING AND MONITORING AN IMPLEMENTATION PROJECT

Michigan's Landline E911 and Wireless E911(Phases I and II) implementation projects have been completed. These projects were conducted on a countywide or Emergency Service District level (i.e., Wayne County has four districts).

The focus of the 2017 Plan revision will be the implementation of a Next Generation 911 system.

The projects will be initiated and monitored by the respective County/District 911 Coordinators, State 911 Committee, and the State 911 Administrator. Based on the solution selected, the future progress of the system's components will be tracked by the State 911 Committee, the State 911 Subcommittees, and included in the State 911 Committee's Annual 911 Report to the Legislature.

Text-to-911 implementation will also be initiated and monitored by the respective county/district 911 coordinators, State 911 Committee, and the State 911 Administrator. The current status of areas receiving Text-to-911 is available on the SNC website.

Roles of the State 911 Committee and State 911 Administrator are outlined in Michigan's 911 statute (PA 32 of 1986, as amended).

Excerpts from Michigan's **EMERGENCY 911 SERVICE ENABLING ACT:**

484.1712 Emergency 911 service committee; creation; purpose; authority and duties.

Sec. 712. An emergency 911 service committee is created within the department of state police to develop statewide standards and model system considerations and make other recommendations for emergency telephone services. The committee shall only have the authority and duties granted to the committee under this act.

484.1714 Duties of committee; staff assistance.

Sec. 714. (1) The committee shall do all of the following:

- (a) Organize and adopt standards governing the committee's formal and informal procedures.
- (b) Meet not less than 4 times per year at a place and time specified by the chairperson.
- (c) Keep a record of the proceedings and activities of the committee.
- (d) Provide recommendations to public safety answering points and secondary public safety answering points on statewide technical and operational standards for PSAPs and secondary PSAPs.
- (e) Provide recommendations to public agencies concerning model systems to be considered in preparing a 911 service plan.
- (f) Perform all duties as required under this act relating to the development, implementation, operation, and funding of 911 systems in this state.

484.1601 Technical assistance and assistance in resolving dispute.

Sec. 601. The emergency 911 service committee created in section 712, upon request by a service supplier, county, public agency, or public service agency, shall provide, to the extent possible, technical assistance regarding the formulation or implementation, or both, of a 911 service plan and assistance in resolving a dispute between or among a service supplier, county, public agency, or public safety agency regarding their respective rights and duties under this act.

10. CONCLUSION

This 911 Plan provides a road map for the future direction of Michigan 911. As each section has outlined, the process is accountable, proactive, and designed to move the 911 system forward.

The State 911 Committee recognizes that NG911 architecture supports an interconnected system of local, regional, and state emergency services networks, and will ultimately expand to cover the entire nation. Effective interconnection requires effective statewide planning and coordination, as well as effective interstate planning and coordination.

The State 911 Committee, through this plan - and the Committee's inclusive process - will move forward in its work to develop recommendations to drive NG911 forward. The Committee recognizes that changes in the state's 911 statutory and network environment need to occur. To that end, this Plan will be a dynamic document that is capable of reflecting those changes.

As reflected in the section on Goals and Objectives, the Committee also recognizes that, in addition to NG911, other goals such as minimum standards for dispatcher training, standard PSAP operational policies, 911 fund contribution compliance and reporting requirements are also elements in making progress in 911. The Committee has created and adopted this Plan, not to simply outline the need to plan for technical progress, but for operational progress as well.

In conclusion, the purpose of this Plan is to outline the process toward NG911 and to address operational issues that the State 911 Committee recognizes as key to successful overall delivery of 911 in the state. As it has done in the past, the Committee will continue to facilitate Michigan's 911 legacy of progress and adaptability as we move into the new challenges facing 911 in the future.

APPENDIX A - ACRONYMS

- ALI – Automatic Location Identification
- ANI - Automatic Number Identification
- APCO – Association of Public Safety Communications Officials
- CAD – Computer-Aided Dispatch
- CLEC – Competitive Local Exchange Carrier
- CPE – Customer Premise Equipment
- E911- Enhanced 911
- ECRF- Emergency Call Routing Function
- ESInet – Emergency Services Internet Protocol network
- ESZ - Emergency Service Zone
- GIS – Geographic Information System
- ILEC – Incumbent Local Exchange Carrier
- IP – Internet Protocol
- LEC – Local Exchange Carrier
- LEIN – Law Enforcement Information Network
- LIS - Location Information Server
- MLTS – Multiple Line Telephone System
- MPSC – Michigan Public Service Commission
- MSAG – Master Street Address Guide
- MSP – Michigan State Police
- NENA – National Emergency Number Association
- NG911 – Next Generation 911
- PSAP – Public Safety Answering Point
- SIP – Session Initiation Protocol
- SNC - State 911 Committee
- TCC - Text Control Center
- TFOPA – Telephony
- VoIP – Voice Over Internet Protocol

- VRS – Video Relay System

Appendix B

ALLOWABLE/DISALLOWABLE USAGE OF 911 SURCHARGE FUNDS

**BY WAY OF EXAMPLE, BUT NOT LIMITATION, THE FOLLOWING COSTS ARE ALLOWABLE OR
DISALLOWABLE (as approved by the STATE 911 COMMITTEE on June 23, 2016):**

ALLOWABLE 911 SURCHARGE EXPENDITURES FOR TRAINING FUNDS

Salaries and travel expenses - Allowed

Actual wages incurred after January 1, 2007 including overtime, not including benefits, of eligible Primary PSAP personnel to attend State 911 Committee approved training courses (either attendee wages OR backfill employee wages), including the hours of travel to and from the approved training and the hours of the approved course. Documentation of overtime wage use must be kept on site.

Travel expenses to attend approved training in-state or out-of-state for states/provinces adjacent to Michigan (Ohio, Indiana, Wisconsin, Ontario, Illinois, and Minnesota) meals, mileage, lodging, parking, etc.

Salaries of instructors for time spent presenting approved 911 center personnel training.

Reasonable travel expenses for instructors (meals, mileage, lodging, parking, etc).

Flat rate fee or tuition paid to a training provider for presenting approved 911 center personnel training.

Facilities, Equipment, Supplies - Allowed

Reasonable rental costs for use of the training facilities for the express purpose of conducting approved 911 center personnel training.

Meal, beverage, and snack expenses provided to trainees during the training.

The cost of purchasing or leasing training materials, including the following: texts, bulletins, tests, writing materials, slides, films, video tapes, and other materials used to assist the eligible trainees in understanding training topics presented as part of State 911 Committee approved training.

DISALLOWABLE 911 SURCHARGE EXPENDITURES FOR TRAINING FUNDS

Salaries and travel Expenses – Not Allowed

Monetary incentives, bonuses or awards for completion of training.

Out-of-state travel expenses to states/provinces not adjacent to Michigan unless otherwise specifically approved by the State 911 Committee's Dispatcher Training Subcommittee.

No reimbursement for PSAP personnel used as trainers in their own PSAP.

Unreasonable travel expense

Facilities, Equipment, Supplies – Not Allowed

Alcoholic beverages

Computer software to be used operationally (i.e. EMD protocol software, CAD software, etc.); computer hardware; any capital investment such as pre-employment testing equipment or simulated console equipment.

ALLOWABLE/DISALLOWABLE USAGE OF 911 SURCHARGE FUNDS

Training Sessions – Allowed

State 911 Committee approved in-state courses including interactive on-line courses and self-paced CD/DVD courses.

Out-of-state State 911 Committee approved courses. All approved expenses are allowed if state/province is adjacent to Michigan (i.e. Ohio, Indiana, Wisconsin, Ontario, Illinois, and Minnesota). Only tuition is allowed for states/provinces not adjacent to Michigan unless otherwise specifically pre-approved by State 911 Committee's Dispatcher Training Subcommittee.

State 911 Committee approved conferences (trainees must attend at least 6 hours of approved courses at the conference within a 24 hour time frame).

Eligible personnel may retake classes as needed.

Training Sessions - Not Allowed

Expired courses, even if previously State 911 Committee approved.

Out-of-state travel expenses to states/provinces not adjacent to Michigan unless otherwise specifically pre-approved by State 911 Committee's Dispatcher Training Subcommittee.

Conferences that are not State 911 Committee pre-approved.

