Wisconsin Statewide NextGen9-1-1 Plan



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1 Executive Summary

This, the second iteration of the Wisconsin Statewide NextGen9-1-1 Plan, sets forth both the achievements already made in respect to the implementation of NextGen9-1-1 (NG9-1-1) in Wisconsin, and more detailed and specific tasks that are required for completion of this important project. The goals of the first version of this Plan are mostly completed and are otherwise subsumed in the nine new goals adopted to continue Wisconsin's progress toward a fully realized NG9-1-1 system. Each goal identified in Section 6 has specific objectives with responsible parties and timelines to create manageable steps for completing each goal. The nine goals are:

- 1. Implement Statewide Emergency Services IP Network (ESInet) and NextGen Core Services
- 2. Implement Geographic Information Systems (GIS) in support of statewide NG9-1-1
- 3. Obtain necessary funding and legislative authority to implement other strategic goals
- 4. Institute an NG9-1-1 governance plan
- 5. Initiate telecommunicator training and service standards
- 6. Implement an NG9-1-1 physical and cyber security plan
- 7. Institute continuity of operations plan (COOP) minimum requirements for Public Safety Answering Points (PSAPs) joining the network
- 8. Utilize NG911 to ensure technological efficiencies and equity of emergency services for all callers, agnostic of call type or location
- 9. Produce and share an NG9-1-1 education plan for the 9-1-1 stakeholders, public and policymakers regarding NG9-1-1 services and capabilities

This Plan addresses the current 9-1-1 environment in Wisconsin from all perspectives: technological, operational, and administrative, including a detailed description of the governance structure and existing legal authorities. To better understand the current environment described in this Plan, a Statewide 9-1-1 System Assessment of Wisconsin's current 9-1-1 infrastructure was completed in 2019. Based on that assessment, there are between 108 and 122 PSAPs staffed by 2,115 public safety personnel. The PSAPs serve 2,288 first responder agencies across the state and answer approximately 9 million calls per year; 3 million of those calls are for 9-1-1 services.

At the State level, the Department of Military Affairs (DMA) Office of Emergency Communications (OEC) oversees communications interoperability, radio, public safety broadband and NG9-1-1. Wisconsin's Interoperability Council is an advisory body to DMA and OEC. The Council has a dedicated 9-1-1 Subcommittee, which oversaw the drafting of this Plan. It has been recognized that Wisconsin's legacy 9-1-1 infrastructure is inadequate to provide effective 9-1-1 service to the citizens and travelers who expect to access 9-1-1 on modern technological devices. The Legislature, therefore, tasked DMA with procuring an NG9-1-1 ESInet, with advice from the 9-1-1 Subcommittee.

DMA currently has an appropriation to fund an initial ESInet contract through June 2021. However, sustainable funding of the ESInet is vitally important. Today, the total cost of the existing system is not precisely known. Based on responses to the Statewide 9-1-1 Assessment survey, costs for 73 of Wisconsin's PSAPs, excluding any network costs, are estimated to be almost \$128 million annually. The existing 9-1-1 system is, at least partially, funded through three separate fees.

- 1. A landline fee assessed per county based on population that is collected by carriers and then applied directly by the carriers to the costs of providing county 9-1-1 networks.
- 2. A \$.75 per line surcharge all on telephone connections, including landline, wireless, and VoIP.
- 3. A \$.38 fee per transaction on all prepaid wireless services.

The \$.75 per line surcharge and prepaid revenues are deposited into the Police and Fire Protection Fund, which is a shared revenue fund appropriated through standard State budgeting procedures.

The Plan examines three funding options for on-going funding of the ESInet as an individual component of NG9-1-1, and the NG9-1-1 system as a whole: local, combined local and State, and State funding. It is recommended that State funding, appropriated from the Police and Fire Protection Fund, be used to pay the on-going costs of the ESInet; and that local funding, with assistance from grant programs, continue to be used for other 9-1-1/NG9-1-1 expenses. The \$128 million cited above includes personnel, call handling equipment, radio equipment, and computer-aided dispatch. It does not include current network charges, as those are handled through the landline fee and other local government levies. Therefore, locals would continue to pay the majority of 9-1-1 costs, with State funding providing the new NG9-1-1 network (ESInet). This option maintains commitment to NG9-1-1 at all levels, is the most efficient, and the most cost effective.

NG9-1-1 will bring a variety of benefits to Wisconsin, including text-to-9-1-1, video call and telematics capabilities. These capabilities also provide equal access for all callers, including the deaf and hard of hearing, regardless of their location or communication device. With a statewide ESInet, all participating PSAPs will have automatic back-ups and call rerouting, as well as mobility options. Increased information flow to PSAPs allows greater information sharing with first responders leading to improved situational awareness and response.

Another important feature of NG9-1-1 is improved call routing, using GIS to more accurately route calls to the most appropriate PSAP. Basic NG9-1-1 routing uses four GIS data layers. A GIS Gap Analysis is currently underway to identify what is necessary for Wisconsin to move forward in this area. Stakeholder meetings have already identified lack of data, lack of standardization in administration and data management, and funding as issues to be addressed. Local governments can begin to prepare for GIS call routing immediately by gathering data and standardizing it to existing models provided by state and national organizations such as the Wisconsin Land Information Association (WLIA) and the National Emergency Number Association (NENA).

Education at all levels is a key facet of implementing NG9-1-1. The public needs to be aware of the variety of ways by which 9-1-1 emergency assistance can be reached. Additional training will be required for telecommunicators who will be receiving increased data in new ways.

Leaders in government and private stakeholders must understand the importance of NG9-1-1 and the requirements to implement and maintain the best services possible for Wisconsin. Additionally, the Plan explores any possible improvements that could be made to the governance structure of the ESInet, and any legislation necessary to enable fully operational NG9-1-1. The existing governance structure is well constructed to oversee NG9-1-1. There are only two recommendations pertaining to governance. The first is to clarify that DMA has authority to oversee the ESInet after a contract is finalized. That can be accomplished through the budget process. The second is to create a network operations committee under the 9-1-1 Subcommittee as an additional advisory body. This would further expand the inclusion and outreach already being achieved by the Interoperability Council and the 9-1-1 Subcommittee to directly solicit ESInet management input from frontline PSAP staff. The only legislative action recommended, apart from the budget process, is to upgrade certain statutory 9-1-1 definitions to encompass NG9-1-1 and allow for further technological advancement in this area. The specific statutory changes are included in the Statewide 9-1-1 System Assessment and can be accessed through this Plan.

To assist in on-going and long-term planning, the Plan provides some topics for future consideration. These include how to successfully transition PSAPs from selective routers to the ESInet, considering that once DMA declares a PSAP active on the ESInet, the current network providers cannot legally continue with their existing bill and keep practices for funding the existing system. Some PSAPs already face the challenge of upgrading their call handling equipment to be NG9-1-1 compatible, and one resolution for future consideration may be a hosted system, which brings economies of scale and other technological advantages. PSAPs will also have to comply with continuity of operations and cyber security requirements to ensure ESInet operations are as coordinated and secure as possible. Those requirements will have to be determined in concert with all stakeholders and the ESInet provider.

On a broader scale, in keeping with Wisconsin's home rule structure, it is recommended that participation in the statewide ESInet remain voluntary. But as the system matures, participation will have to be reviewed to ensure the best, standardized level of service is available throughout Wisconsin. The State's liability for providing the statewide ESInet should also be reviewed and any gaps remediated.

Great strides have already been made in moving toward NG9-1-1 statewide. A clear and conducive governance structure is in place. DMA is working through procurement of an ESInet and the core services necessary for statewide NG9-1-1. DMA is also working through the GIS Gap Analysis. Finally, DMA is creating the necessary administrative rules for a legislatively authorized local NG9-1-1 grant program and has successfully applied for and received a federal grant to assist PSAPs. One round of federally funded grant awards has already been completed and DMA is preparing for a second round to further assist local entities in the transition to NG9-1-1.

This Plan is not a complete how-to for NG9-1-1 in Wisconsin, but rather a collaborative effort to give structure to the implementation process at all levels, to proactively address challenges, and to transparently educate all leaders and users of 9-1-1.

1.1 Plan Purpose and Background

Under Wis. Stat. § 15.315 (2), a 9-1-1 Subcommittee was established under the State Interoperability Council to advise the DMA on all aspects of NG9-1-1 implementation and operation to ensure appropriate stakeholders have a voice in the path to NG9-1-1.¹ A focus group of the 9-1-1 Subcommittee was established to bring together a representative group of stakeholders to establish this Statewide NG9-1-1 Plan. A list of the focus group members is attached as Attachment B in Section 9.

The purpose of the Wisconsin Statewide NG9-1-1 Plan is to:

- 1. Build a cooperative and collaborative mechanism for the advancement of NG9-1-1
- 2. Facilitate the migration of Wisconsin's Public Safety Answering Points (PSAPs) to NG9-1-1 capability
- 3. Identify, educate, and inform stakeholders
- 4. Establish the foundation for Wisconsin's NG9-1-1 capabilities to ensure that all Wisconsin PSAPs achieve a minimum standard level of service while also providing an advanced level of service to meet the evolving needs of the public
- 5. Articulate a set of goals and objectives that foster innovation for the advancement of public safety and allow deployment of creative solutions

1.2 Goals and Objectives

Much progress has been made since the last NG9-1-1 Plan was published in May 2017. The original Plan had four goals: to determine statewide NG9-1-1 requirements, to create a 9-1-1/NG 9-1-1 governance/authority process, to select solution provider(s) by function, and to develop the NG9-1-1 project plan. As discussed in this Plan, a statewide 9-1-1 telecommunications system assessment was performed in 2019 and a Request for Proposals has been issued for an ESInet, which is the backbone of NG9-1-1; and satisfies much of the requirements and solution selection goals. A clear governance structure is in place, and a project plan will be created after selection of the ESInet provider.

Based on the successful accomplishments since the first Plan version, updated goals and accompanying objectives have been identified. These nine goals and objectives are key for designing NG9-1-1 services and functionality across Wisconsin. They focus on implementing the ESInet, NextGen Core Services, and GIS for call delivery; and instituting ESInet governance, cyber security plans, continuity of operations (COOP) plans, telecommunicator training standards, and multi-faceted education plans. The remaining goals identify the necessary steps for any required legislation and emphasize the importance of using NG9-1-1 to promote efficiency and service for all 9-1-1 callers. Tables detailing these goals and objectives are shown in Section 6.

¹ <u>https://docs.legis.wisconsin.gov/statutes/statutes/15/II/315</u> https://docs.legis.wisconsin.gov/statutes/statutes/256/35/3s/d

The successful achievement of the Plan's goals and objectives will result in Wisconsin's ability to meet the public's expectations for 9-1-1 service, to provide a consistent level of NG9-1-1 service statewide, and to contribute to the security and safety of all of Wisconsin's residents and visitors. The overarching vision of NG9-1-1 in Wisconsin is to ensure that all Wisconsin's citizens and visitors have NG9-1-1 service regardless of their location, what type of device they use, or whether they communicate by voice, text, or other emerging technology.

2 Introduction

2.1 National Overview of the History of 9-1-1

The origin of 9-1-1 in America dates back to 1968. Much of the infrastructure utilized then is still in place today. The timeline below illustrates a high-level history of 911.



The Alabama Telephone Company implemented the nation's first 9-1-1 system in Haleyville, Alabama in 1968. Early 9-1-1 technology had limited capability and 9-1-1 calls were delivered to an answering point within the caller's telephone exchange.

This basic 9-1-1 service, as it has since been defined, did not provide any telephone number or location information with the call-it was a voice service only-and the caller had to provide their location and call-back information when talking with the telecommunicator at the PSAP.

Significant advancement in 9-1-1 technology occurred with the introduction of Enhanced 9-1-1 (E9-1-1) service in the early 1980s. Using existing circuit-switched technology, 9-1-1 calls were selectively routed to the PSAP serving the caller's location. In addition, E9-1-1 delivered the call with the caller's telephone number and address.

By the 1990s, the use of cellular technology increased dramatically, which presented a technological challenge to the 9-1-1 system. In 1996, the Federal Communications Commission (FCC) released the First Report and Order on Docket 94-102, which mandated wireless E9-1-1 capabilities in two phases. Phase 1 provides the call-back number and the address of the tower that received the wireless 9-1-1 call. Phase 2 provides the call-back number and the caller's approximate location (as measured in longitude and latitude), within certain accuracy parameters.

Not long after wireless E9-1-1 implementations began to reach maturity at the majority of PSAPs, Voice over Internet Protocol (VoIP) was introduced with both individual consumer and business services. VoIP is a technology that allows customers to make a call using an internet connection instead of traditional landlines. In 2005, the FCC ordered that interconnected VoIP providers must supply their customers with E9-1-1 service as a standard and mandatory feature of their services.

The current E9-1-1 system was never designed to receive calls and data from new and emerging (digital) technologies. As a result, through cumbersome adaptations, E9-1-1 is being asked to perform functions it was not designed to handle, using analog technology to deliver vital information to PSAPs. The reliance on this outdated technology has prevented the delivery of information that could save lives in an emergency such as text, video, or telematics (e.g., "automatic collision notification"). Although the current E9-1-1 network has served the public safety industry well over the last 40 years, it must be able to accommodate the data demands of wireless and VoIP, as well as public safety technologies of the future.

Each time a new technology is introduced (e.g., wireless or VoIP) or system functionality is expanded (e.g. location determination), the existing 9-1-1 network and equipment must undergo significant, convoluted, and costly engineering changes. These changes result in significant time delays and solutions that are not completely effective. The current 9-1-1 network and infrastructure cannot support the technology needs of the future. Delivering additional data on a 9-1-1 call requires a digital network to provide the speed and data capacity to properly deliver the emergent load of information (9-1-1 call, text, picture, video, telematics, and location data) to the appropriate PSAP in the fastest possible manner.

NG9-1-1 was developed in response to the need for more technologically advanced 9-1-1 services. At its most basic level, NG9-1-1 is an ESInet and NextGen Core Services (NGCS). NGCS refers to the various functional elements that gather and process a variety of data with each call or other outreach to 9-1-1 to route that call, text, etc. to the appropriate PSAP. NENA defines the NGCS's functional elements as:

- Emergency Services Routing Proxy (ESRP)
- Emergency Call Routing Function (ECRF)
- Location Validation Function (LVF)
- Border Control Function (BCF)
- Bridging
- Policy Store
- Logging Services

• Standard IP service such as Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP).²

These NG9-1-1 functional elements replace the legacy ALI (automatic location information) used in E9-1-1 today.

An analogy used by NENA to explain the ESInet and NGCS is to visualize NG9-1-1 as a transportation system. The ESInet is the roadway; the NG9-1-1 NGCS are the traffic control devices, rules and laws which govern traffic flow; and the vehicle occupants are the data being transported (calls, texts, call data, etc.).³

NG9-1-1 also changes how calls are routed. In legacy 9-1-1, the caller's location is determined after the call reaches the PSAP, and calls may then have to be transferred to a different, more appropriate PSAP. In NG9-1-1, the caller's location is determined by the system once the call is placed and the call is then routed to the correct PSAP based on that location information; this method leads to a decrease in call transfers and shortens initial response times. GIS aids in developing the location databases within the system that will be used to determine the caller's location more quickly and improve the accuracy of PSAP call routing.

GIS compiles a variety of data layers including street centerlines, provisioning/PSAP boundaries, address points, emergency services boundaries, and mile markers. NENA has developed a data model for GIS, which provides the basis for how an NG9-1-1 system uses the location information within GIS to route calls. GIS will help administer and manage the layers responsible for routing in the NG9-1-1 system and PSAP identification of a caller's location.

PSAPs will continue to utilize Customer Premise Equipment (CPE) (also known as Call Handling Equipment (CHE)) to receive calls. In order to appropriately process all the information available within an NG9-1-1 system, the CPE/CHE must be compatible with NG9-1-1 technology.

In summary, the rapid growth in communications technology is forcing PSAPs to change how they operate in order to provide equivalent or improved services to consumers. Wisconsin's legacy 9-1-1 system has served the citizens and visitors of the state well, but can no longer adapt to evolving modes of communication, particularly those based on IP which require a more sophisticated system to transmit data critical to communications. The antiquated E9-1-1 infrastructure must be updated in order to provide the opportunity for a consistent level of service across the state. To provide the call-handling service necessary to respond to the types of communications that many people will use in an emergency, PSAPs must migrate to a new digital platform, which enables current and future communication devices to access 9-1-1 services through their digitally native state. As the rest of the U.S. moves to NG9-1-1, the current analog E9-1-1 system in Wisconsin will continue to lag further behind technologically, with continued degradation and the inability to meet the demands and needs of residents and tourists.

² See NENA's 911 Guide for 911 Authorities, pg 8, available at:

www.nena.org/resource/resmgr/standards/nena-ref-005.1-2020_ng911_gu.pdf

³ NENA 911 Guide for 911 Authorities, pg 7.

Consumers are willingly adopting these technologies and applying them to their everyday communications, thus reasonably expecting to be able to use them to communicate with 9-1-1. NG9-1-1 will allow Wisconsin to meet those expectations.

2.2 Overview of the History of 9-1-1 in Wisconsin

Milwaukee County was the first county in Wisconsin to implement E9-1-1 service in 1989, and Iron County was the last county to implement E9-1-1 service in 2016. In 2003, the Wisconsin Legislature implemented a supplemental wireless surcharge to reimburse wireless service providers and counties for their costs to implement wireless E9-1-1 service. The wireless surcharge was discontinued in 2008, and the wireless E9-1-1 grant program expired on April 1, 2009.⁴

Although the surcharge was temporary, the greatest progress made in wireless deployment occurred during those years. In order to continue to progress and ensure the continued safety of the public, Wisconsin will need to address funding, governance, and coordination in relation to 9-1-1 services to allow for a smooth transition to NG9-1-1 without compromising the current services provided to the public.

3 Wisconsin's Current 9-1-1 Environment

In 2019, Wisconsin performed a Statewide 9-1-1 Telecommunications System Assessment Report (Assessment Report) as directed by Wis. Stat. § 256.35 (3s).⁵ A major component of the Assessment Report was determining the details of Wisconsin's current 9-1-1 environment including the size, scope and scale of 9-1-1 PSAP operations across the state. A statewide survey of PSAPs was completed and the table below was created to show high-level metrics as determined by the survey responses.⁶

9-1-1 in Wisconsin – Quick Facts				
Wisconsin PSAPs	108/122			
(Responded/Estimated actual)				
9-1-1 Call Answering Positions	641			
9-1-1 Trunks	653			
9-1-1 Staff	2,115			
First Responder Agencies Served	2,288			
(Fire, Police, EMS, includes				
duplication)				

⁴Public Service Commission of Wisconsin Website, "Frequently Asked Questions Regarding 911 Service in Wisconsin," <u>http://psc.wi.gov/utilityinfo/tele/newsInfo/n11FAQ.htm</u>, November 3, 2016.

⁵ 2019 Statewide 9-1-1 Assessment is available at:

https://dma.wi.gov/DMA/divisions/oec/library/2019/2019_WI_Statewide_911_System_Assessment-FINAL-1.pdf

⁶ 2019 Statewide 9-1-1 Assessment, pg 37.

9-1-1 Calls	3,000,000
(annual approximate as reported)	
Total Calls handled by PSAPs	9,000,000
(annual approximate as reported)	

Based on the Assessment Report, each of Wisconsin's 72 counties have a PSAP that directly answers 9-1-1 calls, but not all counties dispatch all of those calls, nor do all county PSAPs answer all of the 9-1-1 calls originating within their county. This makes the lack of technology integration even more problematic and important as call transfers are a common practice across the state. This section of the Plan outlines the current environment of 9-1-1 in Wisconsin in relation to governance, technology, and funding.

3.1 9-1-1 Governance Structure

The Wisconsin Department of Military Affairs (DMA) administers the Office of Emergency Communications (OEC) which is responsible for the following program areas:

- Wisconsin Interoperable System for Communications (WISCOM)
- Public Safety Broadband Initiative
- NextGen9-1-1
- Land Mobile Radio (LMR)/Interoperability
- Communications Unit (COMU) Workgroup

Under Wis. Stat. § 323.29 (3)(a), the OEC also provides staff support to the State Interoperability Council (IC), its subcommittees, and workgroups. The IC currently has four subcommittees and one workgroup: the 9-1-1 Subcommittee, WISCOM Subcommittee, NPSBN Subcommittee, LMR Subcommittee, and the COMU Workgroup.

Wisconsin's IC operates in an advisory capacity to the DMA and shares statutory responsibilities for interoperable communications with DMA/OEC. Traditionally, interoperability has focused on Land Mobile Radio (LMR) systems which provide "voice" communications to first responder agencies including PSAPs. An NG9-1-1 system changes the dynamics of interoperability to include "voice and data" being shared among the general public, first responder agencies, and PSAPs.

The Wisconsin Legislature statutorily created the 9-1-1 Subcommittee in 2017 within Wisconsin Act 59. The 9-1-1 Subcommittee is a governor appointed body that has been charged with advising DMA on aspects related to NG9-1-1 emergency services IP network contracts and implementing NG9-1-1 in Wisconsin. Prior to this legislation, in late 2016, the NextGen9-1-1 Workgroup was formed under the previous 9-1-1 Subcommittee to assist in planning for the deployment of NG9-1-1 throughout Wisconsin by drafting a strategic plan. Comparative charts of the workgroups before and after the 2017 legislation are Attachment A of Section 9. The subsequent statutory creation of the 9-1-1 Subcommittee shows state commitment to building a governance model that is inclusive and fosters stakeholder support. Such support is crucial to the successful transition to and maintenance of a statewide NG9-1-1 system.

3.2 Legacy 9-1-1 Technology and Operations

At present, most Wisconsin PSAPs function independently of each other with some ad hoc coordination and regional governance. There is limited integration of E9-1-1 with other related public safety systems such as Computer Aided Dispatch, Radio, Recording, and Records Management Systems. There are also some PSAPs that have employed interim technologies to allow NextGen-type services, particularly text-to-9-1-1.

According to the Assessment Report, there are seven different 9-1-1 network providers and fifteen selective routers that comprise the current 9-1-1 infrastructure in Wisconsin.⁷ Because of this variety, it would be very costly and difficult for individual PSAPs to aggregate digital calls in a NG9-1-1 environment. PSAPs not served by the same selective router are not able to transfer 9-1-1 calls without losing important premise information such as the caller's location.

Half of the 102 PSAPs who responded to the Assessment question regarding call overflow said their unanswered calls do not reroute to another PSAP. At least one PSAP was uncertain what happened to their unanswered calls.⁸ Today, in many Wisconsin PSAPs, if the 9-1-1 lines are already in use, a caller will receive a busy signal.⁹ This demonstrates the need for statewide coordination in relation to NG9-1-1 planning and implementation to establish interoperability among PSAPs and ensure all 9-1-1 calls are answered.

14 PSAPs responding to the Assessment indicated that they accept texts to 9-1-1. 92 PSAPs responded that they do not accept texts to 9-1-1.¹⁰ Standardization is critical in this area so that the public does not mistakenly assume that they can successfully reach 9-1-1 via text. The ability to receive texts sent to 9-1-1 is inherent within NG9-1-1 systems.

3.3 Funding

3.3.1 Current Fees

Wisconsin currently has three statutory fees to partially fund 9-1-1, but none of the fees are collected directly by local government. The first is a landline fee¹¹, which is established as a "bill and keep" practice; landline providers both collect the fee from customers and keep the funds as reimbursement for services to county 911 entities. This fee is applied to the telephone network expenses related to 9-1-1 for each county, and is deposited in a pooled fund. Each carrier deposits the fees collected into the revenue side of the pool and takes from the pool the amount of its own expenses in providing 9-1-1 services.

⁷ 2019 Statewide 9-1-1 Assessment, pgs 46-47.

⁸ 2019 Statewide 9-1-1 Assessment, pg 48.

⁹ 2019 Statewide 9-1-1 Assessment, pg 49.

¹⁰ 2019 Statewide 9-1-1 Assessment, pgs 59-60.

¹¹ See Wis. Stat. § 256.35 (3)

In order to levy the fee, each county must enter into a contract with the participating telephone companies within that county, and the amount of the surcharge varies from county to county based on the network costs and the number of exchange access lines. Charges per exchange access line are capped based on population.¹² There are specific statutory requirements for the contract and other requirements counties must meet to levy the fee. General oversight of these contracts and the landline 9-1-1 fee falls within the duties of the Public Service Commission of Wisconsin.¹³

The landline fee, as it pertains to recurring costs, ceases in each county once DMA declares the county operational on the ESInet.¹⁴ The landline fee for nonrecurring costs may continue after the declared operational date until the provider is fully compensated for the nonrecurring services.¹⁵ Services considered recurring or nonrecurring may vary by vendor across the state. A transition plan will be created after the NG9-1-1 network procurement process to identify the appropriate technological milestones for declaring counties operational. The plan will consider and balance regulatory considerations, carrier, county and regional needs.

The second fee is a monthly surcharge of 75 cents per line for all telephone connections, including landline, wireless, and VoIP lines.¹⁶ The third fee is 38 cents per transaction on prepaid wireless services, regardless of the number of minutes purchased.¹⁷ Neither fee has inflationary increases. Both of these fees go directly to the Police and Fire Protection Fund.¹⁸

3.3.2 Police and Fire Protection Fund

The Police and Fire Protection Fund is a nonlapsible trust fund.¹⁹ However, money in the Fund is not directly available to emergency service providers or telecommunications providers. Instead, it is shared revenue and is appropriated through the state's budgeting procedures.²⁰ As of the drafting of this Plan, an accurate, total Fund balance could not be obtained. \$19.7 million is presently allocated from the Fund to DMA over the 2019-21 biennium for the creation, operation, and maintenance of the statewide ESInet and for the 9-1-1 Subcommittee to administer its duties.

Concerns about the Fund include that it should be used solely for direct support of 9-1-1 services, particularly since it is billed to telephone customers. However, the revenue from this fee is used to support 9-1-1 and public safety through the appropriation to DMA and by providing additional revenue to local governments, where broader public safety costs are one of

¹² See Wis. Stat. § 256.35 (3)(b)

¹³ See Wis. Stat. § 256.35 (3)

¹⁴ See Wis. Stat. § 256.35 (3s)(c)1

¹⁵ See Wis. Stat. § 256.35 (3s)(c)2

¹⁶ See Wis. Stat. § 196.025 (6)(b) 1

¹⁷ See Wis. Stat. § 196.025 (6)(b) 2

¹⁸ See Wis. Stat. § 196.025 (6)(c) 3

¹⁹ See Wis. Stat. § 25.99

²⁰ See Wis. Stat. § 20.465 (3)(qm), § 256.35 (3s) and § 256.35 (3s)(d)

the largest local expenditures. And, while public safety may be one of the largest local expenditures, it should also be noted that local funding from the Police and Fire Protection Fund is often in direct competition with other local costs outside of public safety such as social services and public works.

4 Implementation Progress

Since the first adoption of an NG9-1-1 Plan in 2017, much progress has been made to ready Wisconsin for NG9-1-1. Many specific achievements and ongoing efforts are presented below, all of which support the Goals and Objectives in Section 6 adopted to continue moving NG9-1-1 forward.

4.1 Organizational Structure

As discussed in Section 3.1, the implementation of NG9-1-1 now has a clear, statutorily created governance structure. The efforts to improve 9-1-1 service in Wisconsin are smoothly integrated into the expansive efforts of the Interoperability Council/9-1-1 Subcommittee and the DMA/OEC.²¹ This cohesive structure provides an excellent foundation for the successful procurement and implementation of NG9-1-1 in Wisconsin.

The DMA works in conjunction with the 9-1-1 Subcommittee under the Interoperability Council to ensure appropriate stakeholders have a voice in the path to NG9-1-1. Through work with the 9-1-1 Subcommittee, the NG9-1-1 program under OEC continues to progress towards NG9-1-1 statewide and this ongoing relationship will help ensure the statewide network not only meets the needs of the public but of the PSAPs who will operate on it.

There are four state staff members within OEC that currently work on the NG9-1-1 program in some capacity as detailed in the graphic and descriptions below. Due to the highly technical nature of NG9-1-1 and building out a statewide IP-based network, DMA has also engaged a 9-1-1 consulting firm to assist in the overall planning, implementation, and preparation for a fully operational statewide NG9-1-1 system. Additional consulting services have been initiated to perform the GIS Gap Analysis discussed in Section 5.1.2. Following system implementation, there may be other staff positions necessary to maintain the ongoing operation of a statewide system including training/compliance staff, technical and financial experts.

²¹ The Interoperability Council's Consolidated Subcommittee By-Laws for the Wisconsin Interoperability Systems for Communications (WISCOM) Subcommittee, the Land Mobile Radio (LMR) Subcommittee, the Nationwide Public Safety Broadband Network (NPSBN) Subcommittee, and the 9-1-1 Subcommittee lay out the differing subcommittee responsibilities and clearly show the many facets of communication issues being addressed individually and collectively. The Consolidated Subcommittee By-Laws can be accessed at: https://dma.wi.gov/DMA/divisions/oec/library/2019/Consolidated_SubcommitteeBy-Laws_ADOPTED_9.26.2019.pdf



Director of Emergency Communications:

- Executive oversight of all emergency interoperable communications program areas and responsibilities assigned to DMA including NG9-1-1, WISCOM, and public safety broadband
- Statewide Interoperability Coordinator for Wisconsin
- Appointed by and reports to the Wisconsin Adjutant General
- Designee for the Wisconsin Adjutant General on the 9-1-1 Subcommittee

OEC Supervisor:

- Provides direct supervision over all OEC program staff and program areas including NG9-1-1, WISCOM, and public safety broadband
- Deputy Statewide Interoperability Coordinator

NG9-1-1 Program Manager:

- Day-to-day project management of the NG9-1-1 program
- Implements program policies and directives based on recommendations from the 9-1-1 Subcommittee/Interoperability Council and executive leadership decisions
- Provides research and analysis of various project areas necessary for overall NG9-1-1 implementation
- Direct oversight of NG9-1-1 implementation

NG9-1-1 Grant Specialist (0.6 Project FTE):

- Provides support for administering Wisconsin's federal NG9-1-1 grant program
- 60% project position with federal funding ending in 2022

4.2 ESInet and NGCS Procurement

The first goal articulated in this NG9-1-1 Plan is implementation of a statewide ESInet and NGCS. Several vital steps have already been completed in that process. A Request for Information was published, and the responses were reviewed to gather information on the current technology environment to assist in the writing of a Request for Proposals (RFP). Additional requirements were gathered as part of the 2019 Statewide 9-1-1 Telecommunications System Assessment and a completed RFP was published in October 2019. RFP responses are currently under review.

4.3 Local NG9-1-1 Grant Projects

4.3.1 Federal Grant Program

Wisconsin has applied for and successfully secured a grant from the Federal Government to further implement NG9-1-1 capable equipment across the state. DMA is administering this grant to fund local projects for upgrading CPE/CHE for NG9-1-1 compatibility, which will be necessary to establish a direct connection to the statewide ESInet. DMA has awarded the first round of subgrants to localities and plans to issue a second round based on remaining funds. In concert with the 9-1-1 Subcommittee, a determination will be made as to eligible expenses and other criteria for the second round of awards.

4.3.2 State Grant Program

A state grant program was established by Wis. Stat. §256.35 (3s)(6)(bm) (Wisconsin Act 26) and requires DMA to create administrative rules to govern the eligible expenses for the grant, and recipient criteria for receiving grant funding. The administrative rules process is currently in progress and a funding request will be made in the future. The grant program will provide much needed funding for PSAPs to upgrade and maintain the technological and operational requirements necessary for full NG9-1-1 implementation statewide.

4.4 GIS Gap Analysis

The second goal identified for realizing NG9-1-1 in Wisconsin is to create a GIS dataset for use in the new statewide system. A GIS Gap Analysis is underway to assist the Subcommittee and Council in understanding what issues must be addressed to institute this component of NG9-1-1 in all areas of the state. Expected completion date of the analysis is June 2021 and the implementation of the recommendations within the analysis report will be essential in achieving the second goal of this Plan.

5 Wisconsin's Future 9-1-1 Environment

5.1 Technological Advancements

NG9-1-1 enhances 9-1-1 capabilities via a phased approach by improving the hardware, software, data, transport facilities, and operational policies and procedures to process various types of emergency calls including the services of non-voice (multimedia or text) messages. NG9-1-1 can also acquire and integrate additional data useful to call routing and handling, deliver calls and messages with corresponding data to the appropriate PSAP, and support data and communications needs for coordinated incident response and management.

NG9-1-1 employs a secure, open-architecture (i.e. non-proprietary), and managed IP-based network used to process and manage new communications devices and services such as text messaging, data transfer, and video delivery. Once fully implemented in Wisconsin, NG9-1-1 will:

- 1. Provide equal access for all 9-1-1 callers, including the deaf and hard-of-hearing community
- 2. Resolve current infrastructure limitations among PSAPs by creating a shared traffic network
- 3. Improve resiliency and functionality from the legacy system and reduce overall 9-1-1 system downtime
- 4. Provide an increase in situational awareness that comes from consistent, supplemental data from outside agencies and the public that can be shared to better prepare first responders when they arrive on the scene, potentially saving more lives
- 5. Deliver increased location accuracy for all 9-1-1 calls
- 6. Facilitate and enable incident and mutual aid collaborations and overall voice and data interoperability of PSAPs
- 7. Provide almost-instant backup of PSAPs and the ability to re-route 9-1-1 calls during crises, periods of high call volume, and planned and unplanned outages
- 8. Support a variety of consumer devices as technology continues to evolve
- 9. Enhance financial efficiencies at both the state and local level
- 10. Support connectivity with outside organizations, with the ability of each PSAP to quickly change or add connections in response to emergencies

An ESInet is the core of NG9-1-1 and is needed to provide NG9-1-1 service delivery. Wisconsin is currently in the process of planning and implementing a statewide ESInet that can interconnect all PSAPs. The statewide ESInet will be the transport infrastructure upon which independent application platforms and core functional processes can be deployed. An ESInet will provide for broadband speed transmissions; allowing prioritized, efficient, and speedy delivery of texts and data that telecommunicators at the PSAP and responders in the field will use for safer and more effective field operations.

Of course, as is true of most progress, there are additional considerations that must be managed. Cyber security risks are inherent in systems that are open to the Internet, such as an ESInet. This speaks to the wisdom of statewide coordination, in that cyber security may be very difficult to provide if done PSAP-by-PSAP. The FCC Taskforce on Optimal PSAP Architecture (TFOPA) explains in great detail the cyber risks that will be faced and must be managed in NG9-1-1. It further recommends a state-level Emergency Communications Cybersecurity Center (EC³).²² This presents another reason for statewide NG9-1-1 coordination.

The diagram below shows the basic 9-1-1 call flow as it exists today and how it will function in an NG9-1-1 system.



NG9-1-1 will provide the opportunity for increased and expedited information flow to the first responder community. The public will be able to make and send calls, texts, videos, and other data from a variety of devices and platforms to the appropriate PSAP via the ESInet. As PSAPs receive and process the surge of information, they will become information hubs, responsible for relaying all the data received.

NG9-1-1 will be used to transmit the influx of data from the community to the PSAP, while public safety broadband and land mobile radio will be used to send the outflow of data from the PSAP to the first responders. Careful collaboration among the Nationwide Public Safety Broadband Network (NPSBN) Subcommittee, the ESInet vendor, and the 9-1-1 Subcommittee will be necessary to identify and implement the best methodology for dispersing and exchanging the information from the PSAPs.

²² Federal Communications Commission (FCC). *Taskforce on Optimal PSAP Architecture (TFOPA) Adopted Final Report.* January 2016, pg 57-60. <u>https://apps.fcc.gov/edocs_public/attachmatch/DA-16-179A2.pdf</u>

5.1.1 Staff and Technical Efficiencies Through Technology Upgrades

Goal eight of this Plan is to utilize NG9-1-1 to ensure technological efficiencies and equity of emergency services for all callers, agnostic of call type or location. As discussed above, one effect of implementing NG9-1-1 will be increased data moving through PSAPs. GIS, discussed in more detail below, will require enhanced data maintenance, which may or may not be taking place today. Throughout the implementation and maintenance of NG9-1-1, OEC staff will have increased communications with PSAPs to assist in preparing for and continually utilizing the system. However, these new challenges are balanced by the efficiencies and other opportunities created by NG9-1-1.

Even with increased data flow through the PSAPs, the mechanisms for receiving and sharing information will be streamlined and more efficient. It will be much easier to transfer calls, and the data associated with those calls, to another PSAP in any circumstance. Moreover, the call routing accuracy within NG9-1-1 will reduce the number of necessary call transfers. Duplicative efforts will be reduced, and situational awareness will be heightened both on the telecommunicator side and on the part of first responders on the scene.

On a larger scale, PSAPs will have mobility to accommodate special events, physical challenges such as natural disaster impacts to the physical location, and other emergencies such as pandemics. The availability of backups will be greatly enhanced, as will the ability to seamlessly utilize those backups, which will also allow other opportunities for resource sharing at the PSAP level. It is also expected that cooperative purchasing of CPE/CHE and information sharing regarding type and compatibility of existing or future CPE/CHE among PSAPs will reduce CPE/CHE costs through economies of scale and will increase technological compatibility across the state. A shared ESInet also allows unified efforts regarding funding, administration, and technological advancements.

5.1.2 GIS

As discussed in Section 2.1, GIS will be an integral part of the future NG9-1-1 system. The following sections outline current planning projects related to GIS for NG9-1-1 and steps that can be taken to better prepare local GIS data for call routing.

5.1.2.1 GIS Gap Analysis Project

DMA has contracted with a vendor to complete a Gap Analysis regarding GIS for NG9-1-1. As part of that project, DMA has specified requirements for the vendor to provide a complete report outlining the challenges that face the implementation of GIS for NG9-1-1 in Wisconsin. The final report, anticipated in June 2021, is expected to be thorough and provide options for addressing the identified issues related to GIS for NG9-1-1. Based on discussions with stakeholders, some known issues are included in the following sections. These issues are expected to be addressed as part of the Gap Analysis.

5.1.2.1.1 Data Issues

At this time, no known statewide GIS dataset that could support NG9-1-1 exists in Wisconsin. Local entities such as towns, cities and villages assign addresses without any wide-spread standardization. Some GIS data is currently aggregated at the county level, but there are no set processes for updating new or revised addressing information from the addressing authority to the county. Furthermore, there is no standardization of the data once it reaches the county level. Therefore, in order to reap the many benefits of GIS for call-routing in NG9-1-1, the data will have to be aggregated from all existing sources in the state and reconciled using ALI (Automatic Location Information) and MSAG (Master Street Address Guide). The WLIA (Wisconsin Land Information Association) developed and is promoting a standard for the exchange of street centerline and address point GIS datasets. One reason the WLIA adopted this standard was to aid data aggregation.

ALI and MSAG are in use in the legacy 9-1-1 system today and will be enhanced with the addition of standardized GIS information. Merging the existing ALI and MSAG data with GIS data will identify missing or disparate information, which will have to be rectified at the local level. Once those corrections are made, maintenance of the data is vital and ongoing. As a home rule state, all local participation is voluntary, but vital for a functional NG9-1-1 system.

5.1.2.1.2 Administration Issues

Maintaining an accurate GIS database to provide the best possible 9-1-1 call routing is an ongoing task. Moving forward, Wisconsin will have to decide the best way to operate the GIS function for NG9-1-1. Currently, no entity in Wisconsin has authority to mandate or supervise the gathering and operationalization of GIS data for NG9-1-1. Land information officers have only very limited authority at the county level. DMA will be providing the necessary connectivity between a GIS database and all PSAPs via the ESInet. However, there must be an entity authorized to supervise assembly, standardization, storage, and maintenance of the data.

NG9-1-1 only requires four data layers for call routing: street centerlines, address points, emergency services boundaries, and provisioning/PSAP boundaries. As an initial step, some specific body must be granted authority to collect and standardize those layers in order to avoid delaying overall statewide NG9-1-1 implementation. Additional layers and applications can be developed in later stages. Another decision point will be whether creating and maintaining the GIS database should be an internal task completed by new or existing employees; or if contracting with a vendor to build and manage the database is a more efficient option.

5.1.2.2 GIS Planning

While awaiting the final GIS Gap Analysis report, some preparatory steps can be taken by local GIS authorities. A necessary first step is ensuring that the four necessary layers exist. Then, in order to make Wisconsin's GIS data usable for NG9-1-1 call routing, it must meet the NENA data model. That model is publicly available and can be utilized by anyone. While remediation to

normalize the data can be done on a large scale once the data is aggregated, local authorities can become familiar with the NENA model and could start implementing the model with their existing ALI and MSAG information if they choose.

Once aggregation is complete, and normalization begins, updates and corrections will have to be in the NENA format. Best practices for formatting the data can be formulated at the local level now to decrease the remediation necessary after aggregation. As an interim transition, local GIS authorities could also work toward standardizing their existing information to the WLIA address point and street centerline standards available today.²³

Local entities can also utilize the resources provided by the Wisconsin Land Information Program (WLIP) within the Department of Administration. All Wisconsin counties participate in the WLIP, and that ongoing stakeholder participation can be leveraged to assist in this effort. The WLIA also has a NextGen9-1-1 Task Force. The Task Force may provide information and assistance to local governments working on GIS information.²⁴

5.1.2.3 GIS Funding

Significant time and effort will be required to operationalize GIS for NG9-1-1, and funding is a concern for all entities. Once the Gap Analysis is completed, more specific costs can be estimated, not only for data aggregation and normalization, but on-going remediation and maintenance costs. Other anticipated expenses include training on the SIF (Spatial Information Function) operations and administration, as well as handling discrepancies, and data storage. One possible offset will be a reduction of the ALI costs PSAPs are currently paying. However, as part of bill and keep, ALI costs are not tracked in Wisconsin, so that amount cannot be quantified at this time. Funding options and models will have to be formulated and discussed once more complete information is available.

5.1.3 Training

NG9-1-1 presents the need for more advanced telecommunicator training. The fifth goal in this Plan discusses telecommunicator training objectives in detail. The NG9-1-1 system will provide new call format functionality. Calls may come into the PSAP with additional data such as pictures and video, and PSAPs will also receive text messages. This influx of data necessitates additional training on top of the intense training already necessary. Telecommunicators will need instruction on how to manage the increased data flow, and resiliency training should be included to manage higher stress levels. Increased public relations training is recommended due to the sensitive nature of these new data types. The training should be both operational and technical in nature, including the following topics:

- Managing increased data to the PSAP
- Text-to-911

²³ The WLIA standards, which have been cross-walked to the NENA model, and more information, are available at: <u>https://www.wlia.org/resources/standards/</u>

²⁴ <u>https://www.wlia.org/about/task-forces/</u>

- Supplemental location data
- Interagency coordination
- Mapping
- Call taking standardization to ensure a consistent level of service
- Video analysis
- Wellness

Along with the required NG9-1-1 training comes the opportunity and ability for more standardization in services already provided, such as telecommunicator-assisted CPR training and other protocol training including Emergency Medical Dispatching. Utilization of NG9-1-1 features, such as automatic rerouting will be more seamless if telecommunicators have the same general standards for these critical functions. Basic training standards are a requirement of grant eligibility under Wisconsin Act 26, and will form a solid foundation for advanced and standardized training in all areas of telecommunicator responsibility.

5.1.3.1 Education Plan for the Public, Policymakers and 9-1-1 Stakeholders Regarding NG9-1-1 Services and Capabilities

As Wisconsin rolls out the NG9-1-1 network, education outside of the PSAP must also become a priority. The public must know the variety of ways by which they can contact a PSAP and receive emergency assistance. Policymakers at all levels must understand not only the new functionality of NG9-1-1, but also the implementation and maintenance required to continue providing the best service possible to all of Wisconsin. Finally, without the buy-in and support of stakeholders, the challenges of implementing NG9-1-1 will be exacerbated, and the system will not operate at its optimal potential. However, there are existing tools, which can be adapted to meet Wisconsin's specific public education needs. The ninth goal in this Plan further details the objectives to fulfill this necessity.

5.2 Funding for NG9-1-1

NG9-1-1 requires an ESInet, which can interface with digital and legacy call traffic, NGCS, GISbased call routing, and compatible CPE/CHE in PSAPs. But there are many other expenses in providing 9-1-1 services. Although there is no known authoritative amount for total 9-1-1 costs across the state, some information was provided by 73 PSAPs in response to the Statewide 9-1-1 Assessment Survey. The exact figures provided are shown in the table, and the graph visually compares the percentages of the four expense categories. This cost information does not fully represent the total cost for providing 9-1-1 services in the state.

Category	Amount
Personnel	\$111,029,987.24
Radio	\$7,360,789.59
CAD	\$4,338,076.38
Call Handling	\$4,916,051.69
Grand Total	\$127,644,904.90



Deployment of NG9-1-1 across Wisconsin will require financial commitment at both the state and local level. Funding for the ESInet is discussed first followed by broader NG9-1-1 system-related funding.

5.2.1 ESInet Funding

DMA currently has a biennial appropriation to carry out its responsibilities enumerated in Wis. Stat. § 256.35 (3s). However, it is essential to have a reliable and sustainable funding method for the expenses of the ESInet after state fiscal year 2021. There are three main options for sustainable funding for the ESInet in Wisconsin today: local, shared, and state funding. It is recommended that state funding be secured for sustainable funding of the Wisconsin ESInet. Discussions of each option are below, and the Recommendation sections for both ESInet Funding and NG9-1-1 System Funding fully explain why state-level funding is the preferred option for this piece of the System.

5.2.1.1 Local Funding Option for the ESInet

A local funding approach places responsibility for the ESInet costs on the local entities operating PSAPs. This makes sense in the context of Wisconsin's home rule ethos and direct payment for a particular local service. A new local fee could be approached in at least two ways:

a) First, the cessation of the bill and keep charges to landline telephone service customers would allow local governments to levy an equal amount on landline customers receiving service from a particular PSAP without any actual increase to those citizens.

b) Second, local governments could levy the same fee on all phone users, regardless of service type (landline, wireless, prepaid, etc.).

However, there are several issues with either approach. Legislative action would be required in both options to either remove the levy cap for this specific purpose, or a local governing body could hold a vote or referendum to exceed the existing levy.²⁵ Local governing body action would be necessary to exceed or increase the local levies in every applicable entity across Wisconsin. In the first option, although it would be "budget neutral" to existing landline customers, landlines are decreasing and would not be a reliable method for long-term funding. Moreover, due to the current bill and keep methodology, it is not known whether the fee generates sufficient revenue to fund the ESInet. In the second option, it would be a new fee to all non-landline phone customers in Wisconsin, and is unlikely to be popular.

Both options constitute a major administrative challenge to local governments, particularly how to actually bill and collect the appropriate fee. A variety of mechanisms would be necessary. Prepaid fees could be collected by all retailers by adding a charge to each purchase and remitting the proceeds on a monthly basis, or other preferred timeline. However, retailers would need to know how to determine which entity receives the fee; or else remit all the fees to some other agency (such as the Department of Revenue) to then disburse to local entities. Internet providers would have to do the same for VoIP services as would telephone companies for both landline and wireless customers. Costs for administering any local fee would presumably have to also come out of the fee, which might require a higher fee than exists today. Because of the way the landline fee is currently administered, much about this approach remains unknown.

Additionally, once a contract is finalized, the total costs for the ESInet would have to be divided up to determine what each PSAP owes for its share. To be as fair as possible to the citizens, the division would likely have to be based on an analysis of the population served by each PSAP, and may require occasional realignment if populations or PSAPs shift. A final hurdle identified for this option is that any such local fee or surcharge would appear duplicative of the existing state surcharges going to the Police and Fire Protection Fund.

Risks of Local Funding for the ESInet

The greatest risks identified with the local funding option are that the counties simply will not levy the necessary fees, either through governing body action or referendum. Without every entity levying the necessary funding, ESInet expenses per PSAP will increase. In fact, if too few PSAPs join, the ESInet will not be sustainable in this model. Even if the network can be maintained, but not all PSAPs join, it will create a lack of parity of services available across Wisconsin. This becomes dangerous if individuals, particularly travelers, do not know whether the PSAP for the area they are in is capable of receiving and responding to all communication mediums (for example text to 9-1-1 or video messaging). Even if PSAPs levy the necessary fees and join the ESInet initially, it will be a complicated and disparate process to adjust costs and fees and ensure sustainable funding throughout the life of the network, particularly without an entity to coordinate this localized effort.

²⁵ See Wis. Stat. § 66.0602

5.2.1.2 Shared State and Local Funding Option for the ESInet

Combining state and local resources is another option for funding the ESInet. One way to combine funding sources is local governments levying a fee as described above, but likely at a lower rate. Then, the Wisconsin Legislature could either create a new surcharge, increase the existing surcharge for the Police and Fire Protection Fund, or simply designate a sustainable portion of the existing Police and Fire Protection Fund for the ESInet. Sharing the cost promotes buy-in at all levels and balances local and state needs. If State funding can, at least in part, be derived from existing sources, then direct impact to citizens can be lessened.

In addition to all the challenges to local funding cited above, and the state funding challenges discussed below, this option highlights ownership challenges that are particularly exacerbated in this model. DMA has the statutory directive to contract for the ESInet. However, if the locals are required to pay for it, either entirely or in part, they may want shared control over the contracting process already in statute. Local entities may also perceive this option to be unfair if the State funding comes from the Police and Fire Protection Fund, thus possibly decreasing the locals' shared portion for other public safety items.

Risks of Shared Funding for the ESInet

Because this model remains dependent on local funding, the same risks appear as for a solely locally funded concept. The appropriate fees may not be levied, and PSAPs may continue to operate on legacy systems. It also relies on State action, making the process even more complex. Ownership and operational responsibilities of the system due to the shared funding approach is another significant risk to this approach.

5.2.1.3 State Funding Option for the ESInet

The third option is full and direct funding of the ESInet by the State. Again, multiple possibilities exist for funding at this level. Options for this approach include:

- a) Creating a new fee specifically for the ESInet;
- b) Increasing the existing surcharges for the Police and Fire Protection Fund; or
- c) Designating a specific amount or percentage of the existing Fund surcharges to pay the ESInet costs.

State funding avoids the instability of funding coming from over 100 different authorities. The necessary administrative functions are already in place. Further, the contract costs for the ESInet would not have to be divided or pro-rated among all the PSAPs and their governing entities.

Risks of State Funding for the ESInet

This option carries the least risk. The most serious concern is whether or not the Legislature will fund the ESInet on an on-going basis. However, based on the existing recognition of the value of an ESInet, as evidenced by the statutory direction and existing biennial appropriation to DMA to obtain an ESInet, on-going funding should be feasible. A secondary risk is that local

governments may oppose funding coming from the Police and Fire Protection Fund, because it is a shared revenue fund. This recommendation takes that concern into account. The direct impact to each local entity is reduced by paying the ESInet costs directly from the shared Fund. ESInet funding already appropriated from the Fund is currently offset by an increase in general purpose revenue for the county and municipal aid program. Therefore, no great reduction in the availability of funding for other expenses is expected.

5.2.1.4 Recommended Funding Option for the ESInet

State-level funding should be pursued for the ESInet as a continuous appropriation within DMA's budget. It is recommended that a set percentage (based on the cost of the ESInet contract) of the existing surcharges for the Police and Fire Protection Fund be designated for the ESInet. State funding represents the most efficient use of funds, and is most consistent with the Legislature's direction for DMA to obtain an ESInet contract. The funding for the ESInet would come directly from the State via the Police and Fire Protection Fund, which would balance state and local needs. State funding will help promote adoption of the ESInet by all PSAPs, which in turns provides parity for all 9-1-1 callers in Wisconsin.

Utilizing an existing funding source is most palatable as it shows good stewardship of existing surcharges. It also does not require additional legislation, outside of the normal budget process. Designating a percentage of the Fund surcharges allows for inflationary increases if the surcharges should ever be increased in the future. Any increases to the DMA appropriation for the ESInet which exceed the direct contractual ESInet costs can go back to the locals through the grant program established in 2019 Wisconsin Act 26, to assist with other local expenses. Having only a portion of the Police and Fire Protection Fund designated for 9-1-1 also protects federal grant eligibility while recognizing locals' other important public safety funding needs. As long as the portion of the Fund designated for the ESInet is used for 9-1-1, there will not be any diversion issues under the present federal guidelines.

5.2.2 Other NG9-1-1 System Costs

5.2.2.1 Legacy Network

State funding for the ESInet becomes even more logical when considering, as shown in the charts above, that local governments and PSAPs still pay many ongoing operational costs and provide important components of the NG9-1-1 system as discussed below. As previously explored, when DMA declares a county operational on the ESInet, the landline fee will cease. Currently, in some counties that fee covers the costs of the legacy network, including trunks and selective routers. Other counties have to pay the difference between the network costs and the landline fees collected directly by the providers. However, if any PSAP in an "ESInet operational" county or region is still reliant on existing equipment, such as a selective router, the county will continue to be responsible for the cost of any legacy network charges until NG9-1-1 is fully implemented in all respects. All of these specific considerations will be reviewed in a transition plan before any county is declared operational.

5.2.2.2 Customer Premise Equipment/Call Handling Equipment

CPE/CHE is an indispensable component of NG9-1-1 and is currently found in every Wisconsin PSAP. Historically, these costs were fully funded by local entities. Since the passage of 2019 Wisconsin Act 26, grants will become available to locals once administrative rules and a funding source have been established. The 2019 Statewide 9-1-1 System Assessment reviewed the current state of CPE/CHE, and out of 107 responding PSAPs, 49 reported NG9-1-1 compatible CPE/CHE. Another 49 of the PSAPs reported their CPE/CHE was not NG9-1-1 compatible, but 39 of those indicated plans to upgrade their existing CPE/CHE within the next one to two years.²⁶ The remaining PSAPs will not be able to take advantage of the full capabilities of the ESInet until their CPE/CHE is NG9-1-1 compatible. Funding for upgrading and maintaining CPE/CHE will be primarily dependent on local funding, with assistance from the federal and state grant programs.

5.2.2.3 Miscellaneous Costs

Other local expenses include Computer Aided Dispatch (CAD) programs and radio systems, which will feed into the ESInet but are a part of normal PSAP operations. Indirect, but in some cases even more crucial, and costly, expenses shouldered by local governing entities include PSAP personnel costs, administrative lines, PSAP space, utilities, office furniture, and training. The State grant program can be used for advanced training for NG9-1-1. However, basic training will remain the responsibility of the PSAPs.

5.2.2.4 Recommendations for Other NG9-1-1 System Funding

State funding of the ESInet will absorb the loss of revenue that the locals would face with the cessation of the Landline Fee due to joining the ESInet. Legacy equipment is unnecessary in a fully transitioned NG9-1-1 environment, and its replacement (the ESInet) will be paid for by the State. Harnessing the existing financial and administrative capabilities of the OEC and DMA; having a single, funded entity for negotiation with potential ESInet vendors; and providing the ESInet to all PSAPs in Wisconsin without additional charge is the best balance possible. These efficiencies will also contribute to making the ESInet as economical as possible. Landline customers in Wisconsin will see direct savings once their area PSAP is operational on the ESInet, as the Landline Fee is no longer charged.

It is recommended that local entities, with appropriate assistance from the grant program, continue to fund PSAP operational costs, including CPE/CHE, personnel, and workspace requirements. Locals may be concerned about needing to look for additional money to make up for any decrease in their current shared funding, but the existing biennial appropriation is already

²⁶ 2019 Statewide 9-1-1 System Assessment, pgs 52-53.

coming out of the Fund with no impact to shared funding. While the numbers are still speculative, any new local impact should be minimal.

This shared approach to funding Wisconsin's NG9-1-1 system shows commitment to this indispensable service at all levels of leadership. The technological benefits of NG9-1-1 will prove themselves all across the state, and the vital necessity of providing the best 9-1-1 system to support the best emergency response to everyone in need in Wisconsin, is well worth the investment.

5.3 NG9-1-1 Governance Recommendations

As discussed in Section 3.1, the governance structure for a statewide NG9-1-1 system statutorily exists today. DMA has the legislative imperative to procure an ESInet for all Wisconsin PSAPs, and the Interoperability Council works directly in the 9-1-1 field with advice from its 9-1-1 Subcommittee. Other states' governance models were considered when drafting this Plan, but the current structure is working effectively in Wisconsin and no fundamental changes are deemed necessary. Two small steps are recommended.

In order to provide clarity that DMA has authority for operation and maintenance of the ESInet beyond contract execution, it is recommended that DMA include that minor clarification with the continuous appropriation request for ESInet funding.

Additionally, utilizing the existing statutory authority to create subcommittees²⁷, it is recommended that a Network Operations Committee be formed under the 9-1-1 Subcommittee, as an advisory body. The Interoperability Council and 9-1-1 Subcommittee already bring together excellent representation from fields working in and with 9-1-1. An advisory Network Operations Committee could facilitate even more direct input from PSAP personnel regarding how the ESInet should be managed to provide the best service possible.

5.4 Legislation

In reviewing the current legislative framework and the goals for the ESInet, five main areas were considered: funding, governance, existing statutory definitions, implementation of the ESInet, and GIS. Recommendations for each are below.

5.4.1 Funding

As fully explained in Section 5.2.1.4, state-level, continuously appropriated funding derived from a percentage of the surcharges going into the Police and Fire Protection Fund is recommended for sustainable ESInet support. Procedurally, it is recommended and requested that DMA include this provision in its next biennial departmental budget request as part of the state biennial budget process.

²⁷ See Wis. Stat. § 15.04 (1)(c)

5.4.2 Governance

As discussed in Section 5.3, it is recommended that as part of DMA's ESInet budget request, clarification be provided as to DMA's authority to operate and maintain the ESInet beyond contract execution. The creation of an advisory Network Operations Committee does not require legislative action.

5.4.3 Existing Statutory Definitions

It is recommended that the statutory definitions pertaining to 9-1-1 be updated and adopted as specified in the Assessment Report.²⁸ This will provide cohesive, shared language for NG9-1-1 throughout the state, and allow for further technological advancements. Procedurally, such legislation will need to be sponsored by a legislator and will require support from all 9-1-1 stakeholders. It is recommended that the following entities be contacted regarding this effort, and, to the extent possible, their support secured:

PSAP Operations & Associations (from small, medium, and large PSAPs) Police Chiefs & Associations Sheriffs & Associations **Highway Patrol EMS** Commission Fire Chiefs & Associations (full-time and volunteer departments) **EMS Providers & Associations Emergency Management Association** Local elected officials & Association County elected officials & Associations Large Communications Associations Independent Communications Associations **Broadband Associations** Wireless Communications Companies Individual Communications Companies CTIA representing U.S. wireless communications industry 9-1-1 System Service Providers 9-1-1 related vendors (GIS, mapping, CAD, radio, etc.) Department of Revenue Public Service Commission Wisconsin Land Information Association Wisconsin Land Information Officers Network

Public support is always key, and as information about the ESInet and the numerous advantages of NG9-1-1 are shared, public support should continue to grow.

²⁸ 2019 Statewide 9-1-1 Assessment, pgs 14-15.

5.4.4 GIS

The statewide GIS gap analysis is in process. No specific legislative recommendations are being made at this time, pending completion of that analysis. It is expected that some future legislation may be necessary to implement recommendations from the analysis.

5.5 Future Considerations for Wisconsin's NG9-1-1 System

As Wisconsin continues its positive forward momentum to completing an NG9-1-1 system, additional areas for discussion and decision will emerge. This section outlines areas for future consideration when implementing and maintaining Wisconsin's NG9-1-1 System. Some areas identify specific goals associated with this Plan and others will be addressed in future iterations or separate initiatives outside this document.

5.5.1 Funding

Addition costs not discussed elsewhere in this Plan may be associated with NG9-1-1. For example, PSAPs may have individual charges to purchase compatible network equipment or upgrades to existing equipment to enable NG9-1-1 compatibility. PSAPs may also have costs to expand backroom space. It is impossible to quantify all implementation costs at this phase, and it is important to note that additional, unanticipated costs are likely to arise.

5.5.2 Selective Router Decommissioning

Wisconsin has several technology goals detailed in this Plan, however there are some aspects of technology in NG9-1-1 that must be addressed later in the process. One such issue is the decommissioning of the selective routers throughout the state. The DMA has a great responsibility in determining when to consider each county operational on the ESInet, and thereby suspending the carriers' ability to collect existing bill and keep fees as discussed in Section 3.3.1. This issue is less likely to be problematic for larger carriers but may be more complicated with smaller telephone companies. The ESInet vendor will be required to assist with and coordinate this issue.

However, there are strategies that can be utilized to help plan for the transition. For example, if Wisconsin brings wireless traffic over to the ESInet first, this will allow for approximately 80 percent of the traffic to go over the network while the details of selective router decommissioning are finalized. The wireless traffic cutovers will be performed in phases as opposed to a flash cut where all traffic is brought onto the network at the same time. Details on the strategies and phases of selective router decommissioning should be outlined in a comprehensive transition plan.

5.5.3 Customer Premise Equipment/Call Handling Equipment

CPE/CHE is an ongoing consideration for the continuity of the ESInet. Hosted CPE/CHE is one option to reduce costs. Hosted CPE/CHE could possibly be procured through a cooperative purchase agreement, allowing economies of scale and reduced per-PSAP overhead. Other states

are working on a hosted CPE/CHE model and their experiences can be researched and leveraged for Wisconsin's benefit.

5.5.4 Continuity of Operations Planning

Goal seven of this Plan discusses the need to create a Continuity of Operations Plan ("COOP"). Wisconsin recognizes that this is an important piece of the NG9-1-1 puzzle. A state-level COOP will detail how to maintain operations in the event of an outage or disaster, and PSAPs will be required to maintain their own COOP plans, which meet the required network minimums. These plans provide guidance for continuing operations when largely "unplanned" events impact 9-1-1 centers. The NG9-1-1 system allows for additional COOP options due to improved technology, such as automatic call failover and re-routing. The state-level COOP will augment individual agreements that PSAPs will need to have in place to handle call transfers. This standardized COOP will also include a checklist that PSAPs should consider in specific situations.

5.5.5 Cyber Security Planning

Cyber security planning supports the completion of goals six and seven in this Plan related to implementing a security plan, which inherently includes both cyber and physical security safeguards and instituting minimum COOP requirements for PSAPs joining the ESInet. In order for the ESInet to operate effectively, it is vital that all participants adhere to a basic level of security. PSAPs will need to have physical security measures in place onsite and will need to have an implemented security plan consistent with NG9-1-1 best practices. Physical security may not be an issue for PSAPs already in compliance with CJIS security requirements, but that will need to be verified.

Additionally, PSAPs must self-audit or perform a security assessment annually. When an ESInet vendor is selected, the vendor will assist in setting the minimal security requirements, which will be included in a service level agreement (SLA). Cooperative efforts from all parties may be required to assist PSAPs in understanding the requirements and reaching the minimum criteria to facilitate their participation in the ESInet.

5.5.6 Voluntary or Mandatory Participation in the ESInet

Other states have followed both voluntary and mandatory participation models for ESInets. In voluntary states, PSAPs are invited to join a network; but not required. In mandatory states, PSAPs must join a specified ESInet. Because Wisconsin is a home rule state, it is recommended at this time that participation in the Wisconsin ESInet remain voluntary. The benefits and advantages of a statewide ESInet, as explained throughout this Plan, should encourage PSAPs to voluntarily join.

However, Wisconsin's citizens and visitors would be best served by every PSAP participating in the ESInet. As NG9-1-1 implementation continues, many challenges to PSAPs joining the ESInet will be met and overcome. If some PSAPs remain unwilling to provide NG9-1-1 services, it may be necessary to revisit this issue.

5.5.7 Liability Considerations

In relation to governance for the ESInet, liability issues must be explored. Under Wis. Stat. § 256.35 (7) telecommunications utilities, wireless carriers, local governments, and "a person that supplies any service, product, equipment, or database, including any related emergency notification service or process, that is used for or in conjunction with the installation, implementation, operation, or maintenance of the emergency number system and that is used by a public safety answering point" are exempt from liability to any person calling 9-1-1. Some protections are also provided for PSAP personnel. The State is not specifically named in these statutes, and a legal opinion should be sought as to whether the State would have sovereign immunity for any suits brought regarding the ESInet. Immunity protection seems likely based upon existing interpretations of Article I, Section 9 of the Wisconsin Constitution.

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6 Plan Goals and Objectives²⁹

GOAL 1: Implement Statewide ESInet and NextGen Core Services					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Approve ESInet Project Plan	DMA	4Q 2020		
2	Educate PSAPs on ESInet Project Plan	Network Vendors, DMA	1Q 2021		
3	Approve Testing and System Acceptance Plan	Network Vendors	1Q 2021		
4	ESInet backbone built out 100% statewide to PSAPs	Network Vendors	2Q 2021		
5	Identify participant(s) and complete ESInet Pilot project(s)	Network Vendors, DMA, and PSAPs	3Q 2021		
6	25% of PSAPs receiving calls over ESInet	Network Vendors	4Q 2022		
7	50% of PSAPs receiving calls over ESInet	Network Vendors	2Q 2023		
8	75% of PSAPs receiving calls over ESInet	Network Vendors	4Q 2023		
9	100% of PSAPs receiving calls over ESInet	Network Vendors	2024		

²⁹ Due to the COVID-19 outbreak, all goal completion dates in this section will have to be reviewed and adjusted after the pandemic restrictions are lifted and the ESInet contract has been finalized.

GOAL 2: Implement GIS in support of statewide NG9-1-1					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Establish a geospatial point person for each PSAP	PSAPs/LIOs	3Q 2020		
2	Perform and participate in GIS Gap Analysis, analyze results and incorporate findings into strategy	LIOs, GIS Consultant & DMA	3Q 2021		
3	Determine approach and authority for implementing NG911 GIS management services	TBD	4Q 2021		
4	Determine who will host the statewide dataset	911 Subcommittee /State	4Q 2021		
5	Education and outreach to PSAPs/LIOs	911 Subcommittee /GIS Vendor	Ongoing		
6	Perform GIS data gap remediation	In house or Vendor	4Q 2021		
7	Establish plan for ongoing maintenance of a statewide dataset	TBD	4Q 2021		

GOAL 3: Obtain necessary funding and legislative authority to implement other strategic goals					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Review existing statutory structure to determine what legislative changes are necessary to prepare for the continuing evolution of technology	911 Subcommittee	3Q 2020		
2	Identify potential funding sources for NG9-1-1	911 Subcommittee	Ongoing		
3	Develop sustainable funding model	911 Subcommittee	Ongoing		
4	Solicit stakeholder input on legislation drafting	911 Subcommittee/ Stakeholder Associations	Ongoing		
5	Identify "champion" legislators	911 Subcommittee	Ongoing		
6	Prepare bill for the 2021 legislative session	"Champion" Legislator(s)	2020		
7	Communicate status of ongoing legislative efforts regularly to stakeholders	Legislature/91 1 Subcommittee	Ongoing		

GOAL 4: Institute an NG9-1-1 governance plan					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Establish governance model for network operations	911 Subcommittee/ State	4Q 2020		
2	Appoint members to committees necessary for effective NG9-1-1 governance such as a PSAP network operations committee	911 Subcommittee/ State	4Q 2020		
3	Institute process for sharing of resources, data, records, tools, etc.	911 Subcommittee/ State	2Q 2021		
4	Draft PSAP to PSAP intergovernmental agreement template	911 Subcommittee/ State	3Q 2021		

GOAL 5: Initiate Telecommunicator Training and Service Standards for 2019 Wisconsin Act 26 Requirements					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Identify groups or agencies currently working to develop minimum training standards and collaborate among groups	911 Subcommittee	4Q 2020		
2	Create a standards committee with appropriate stakeholders	911 Subcommittee/ State	1Q 2021		
3	Document pros and cons for PSAPs minimum training requirements	911 Subcommittee/ Standards Committee	2Q 2021		
4	Identify sustainable funding to support initial and ongoing training at PSAP	911 Subcommittee/ Standards Committee	2Q 2022		
5	Establish statutory changes necessary to implement a recommended standard	911 Subcommittee	No later than 1Q 2023		

GOAL 6: Implement an NG9-1-1 physical and cyber security plan					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Audit NG physical security standards at PSAPs utilizing NGSEC form and share results with ESInet Vendor	DMA / PSAPs/ Network Vendor	4Q 2020		
2	Perform PSAP cybersecurity training	TBD	3Q 2021		
3	Implement ESInet vendor cybersecurity standards and recommendations	PSAPs/ DMA/ Network Vendor	2Q 2021		
4	Incorporate audit and assessment process for cybersecurity	DMA	2Q 2021		

GOAL 7: Institute continuity of operations plan (COOP) minimum requirements for PSAPs joining the network					
Objective Number	Description	Owner(s)	Goal Completion Date	Status	
1	Determine requirements for PSAP COOP plan	911 Subcommittee	Prior to PSAP cutovers to ESInet		
2	Develop COOP template for use by agencies	911 Subcommittee	Prior to PSAP cutovers to ESInet		
3	Train PSAPs on the implementation, use, and maintenance of the COOP plans	911 Subcommittee /DMA	Prior to PSAP cutovers to ESInet		

GOAL 8: Utilize NG911 to ensure technological efficiencies and equity of emergency services for all callers, agnostic of call type or location.						
Objective Number	Description	Owner(s)	Goal Completion Date	Status		
1	Ensure that the ESInet and NGCS are improved upon as technology, standards, and societal demands evolve	911 Subcommittee/ Vendor	Ongoing			
2	Ensure solutions and services implemented in Wisconsin meet and continue to meet evolving industry standards (e.g. NENA i3)	911 Subcommittee/ Vendor	Ongoing			
3	Enterprise wide call accounting and data collection is utilized for quality control and auditing purposes.	911 Subcommittee/ Vendor	Ongoing			
4	Explore ways that PSAPs can work together to share functional components to increase technological efficiencies	911 Subcommittee/ Vendor	Ongoing			

GOAL 9: Produce and share an NG9-1-1 education plan for the 9-1-1 stakeholders, public and policymakers regarding NG9-1-1 services and capabilities						
Objective Number	Description	Owner(s)	Goal Completion Date	Status		
1	Utilize tools that exist from the National 911 Program and other states that help to educate telecommunicators in NG911 "101" and on their role in NG911.	911 Subcommittee	1Q 2021			
2	Ascertain topics to be presented in education campaigns (text to 911, video calls, social media platforms, etc.)	911 Subcommittee	3Q 2024			
3	Educate first responders on use of additional information being provided by ESInet	DMA	3Q 2024			
4	Initiate public awareness campaigns for: users (adult and children-possible school campaign), GIS professionals, first responders, and elected officials	DMA	4Q 2024			
5	Provide resources to local PSAPs to educate the public	DMA	4Q 2024			
6	Text-to-911 education campaign for public and PSAPs	DMA	4Q 2024			
7	Document successes of NG911 network and PSAP operations for legislature, public, and PSAPs	DMA	Ongoing			

7 Plan Monitoring and Maintenance

The Wisconsin Statewide NG9-1-1 Plan will be updated by the 9-1-1 Subcommittee. Due to the COVID-19 outbreak, Plan dates and deadlines will be reviewed after the pandemic restrictions are lifted and the ESInet contract has been awarded. Thereafter, the Plan will be reviewed and updated at least annually. Progress on the previous year's goals and objectives will be reviewed and reported and goals and objectives will be updated and added for the next plan year for review. There may be legislative or technological changes in the 9-1-1 environment that may require the 9-1-1 Subcommittee to revise the plan in between annual updates.

Version	Publication Date	Description of Change
Initial Plan	May 2017	Initial Wisconsin Statewide NextGen 9-1-1 Plan
V2	June 2020	Rewrite

Changes to the Plan are documented in the below version history table:

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8 Glossary of Terms

For the complete NENA Master Glossary of Terminology (NENA ADM-000.23.2020, 01/20/2020), use the following link: <u>https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/NENA-ADM-000.23-2020</u> FINAL 2.pdf

9-1-1: A three-digit telephone number to facilitate the reporting of an emergency requiring response by a public safety agency.

9-1-1 System: The set of network, database, and CPE components required to provide 9-1-1 service.

Access Line: The connection between a customer premises network interface and the Local Exchange Carrier that provides access to the Public Switched Telephone Network (PSTN).

Alternate PSAP: A PSAP designated to receive calls when the primary PSAP is unable to do so.

Automatic Location Identification (ALI): The automatic display at the PSAP of the caller's telephone number, the address/location of the telephone, and supplementary emergency services information.

Automatic Number Identification (ANI): Telephone number associated with the access line from which a call originates.

Backup Public Safety Answering Point (Backup PSAP): Typically, a disaster recovery answering point which serves as a backup to the primary PSAP and is not co-located with the primary PSAP.

Busy Signal/Tone: An audible signal indicating a call cannot be completed because the called access line is busy. The tone is applied 60 times per minute.

Call: A session established by signaling with two-way real-time media and involves a human making a request for help or a non-human initiated call. Sometimes it is referred to as a "voice call", "video call" or "text call" when specific media is of primary importance. The term "non-human-initiated call" refers to a one-time notification or series of data exchanges established by signaling with at most one-way media, and typically does not involve a human at the "calling" end. The term "call" may also be used to refer to either a "Voice Call", "Video Call", "Text Call" or "Data–only call", since they are handled the same way through most of Next Generation 9-1-1. It is an element of current and anticipated 9-1-1 payloads.

Call Transfer: The capability to redirect a call to another party.

Cell: The wireless telecommunications (Cellular or PCS) antenna serving a specific geographic area.

Civic Address: Any city-style address that includes a house number and a street name is considered a Civic Address. Civic addresses include a community name that may or may not be recognized by the United States Postal Service or be MSAG valid. Civic addresses may be used as Postal address if recognized by the United States Postal Service. Civic Addresses may be used as MSAG addresses if they are an exact match to the MSAG address. A rural route delivery address or FPO or APO address is not considered a Civic address.

Communication Services: Includes any of the following: (a) the transmission, conveyance or routing of realtime, two-way voice communications to a point or between or among points by or through any electronic, radio, satellite, cable, optical, microwave, wireline, wireless or other medium or method, regardless of the protocol used; (b) the ability to provide two-way voice communication on the public switched network; (c) wireless enhanced 9-1-1 service; (d) wireline enhanced 9-1-1 service; (e) interconnected VoIP provider service as defined by the regulations of the FCC regulations; (f) IP -enabled service; or (g) prepaid wireless service.

Communication Service Provider: An entity that provides communication services to a subscriber or end user.

Computer Aided Dispatch (CAD): A computer-based system which aids PSAP attendants by automating selected dispatching and record keeping activities.

Customer Premises Equipment (CPE): Also known as call handling equipment (CHE) at a PSAP.

Cutover: The activation of a new telephone call processing or switching system.

Database: An organized collection of information, typically stored in computer systems, comprised of fields, records (data) and indexes. In 9-1-1, such data bases include MSAG, telephone number/ESN, and telephone customer records.

Emergency Call: A telephone request for public safety agency emergency services which requires immediate action to save a life, to report a fire, or to stop a crime. This may include other situations as determined locally.

Emergency Services Internet Protocol Network (ESInet): A managed IP network that is used for emergency services communications, and which can be shared by all public safety agencies. It provides the IP transport infrastructure upon which independent application platforms and core functional processes can be deployed including, but not restricted to, those necessary for providing Next Generation 9-1-1 services. ESInets may be constructed from a mix of dedicated and shared facilities. ESInets may be interconnected at local, regional, state, federal, national, and international levels to form an IP-based inter-network (network of networks).

Enhanced 9-1-1 (E9-1-1): An emergency telephone system which includes network switching, database and CPE elements capable of providing Selective Routing, Selective Transfer, Fixed Transfer, ANI and ALI.

Exchange: A defined area, served by one or more telephone central offices, within which a Local Exchange Carrier furnishes service.

FCC: Federal Communications Commission.

Geographic Information Systems (GIS): A computer software system that enables one to visualize geographic aspects of a body of data. It contains the ability to translate implicit geographic data (such as a civic address) into an explicit map location. It has the ability to query and analyze data in order to receive the results in the form of a map. It also can be used to graphically display coordinates on a map i.e., latitude/longitude from a wireless 9-1-1 call.

Interoperability: The capability for disparate systems to work together.

IP-enabled Service: A service, device or application which makes use of Internet Protocol (IP) and is capable of entering the digits 9-1-1, or by other means as approved by the department, for the purposes of interconnecting users to the enhanced 9-1-1 systems including, but not limited to, voice over IP and other

services, devices, or applications provided through or using wireline, cable, wireless, or satellite facilities or any other facility that may be provided in the future.

Legacy Network: A 9-1-1 network that is operating as a basic or enhanced 9-1-1 system and/or the existing analog-based enhanced 9-1-1 systems in the State of Wisconsin.

Legacy PSAP: A PSAP that cannot process calls received via i3-defined call interfaces (IP-based calls) and still requires the use of CAMA or ISDN trunk technology for delivery of 9-1-1 emergency calls.

Local Exchange Carrier (LEC): A Telecommunications Carrier (TC) under the state/local Public Utilities Act that provides local exchange telecommunications services. Also known as Incumbent Local Exchange Carriers (ILECs), Alternate Local Exchange Carriers (ALECs), Competitive Local Exchange Carriers (CLECs), Competitive Access Providers (CAPs), Certified Local Exchange Carriers (CLECs), and Local Service Providers (LSPs).

Master Street Address Guide (MSAG): A data base of street names and house number ranges within their associated communities defining Emergency Service Zones (ESZs) and their associated Emergency Service Numbers (ESNs) to enable proper routing of 9-1-1 calls.

National Emergency Number Association (NENA): The National Emergency Number Association is a not-forprofit corporation established in 1982 to further the goal of "One Nation-One Number." NENA is a networking source and promotes research, planning and training. NENA strives to educate, set standards and provide certification programs, legislative representation, and technical assistance for implementing and managing 9-1-1 systems.

NENA i3 Standards or i3: NENA Next Generation 9-1-1 standards and requirements, including without limitation, the NENA Security for Next Generation 9-1-1 Standard and the NENA i3 Technical Requirements Documents, now available or as may become available in the future.

Network Components: Any software or hardware for a control switch, other switch modification, trunking or any components of a computer storage system or database used for selective routing of 9-1-1 calls, automatic number identification and automatic location identification, including a PSAP.

NextGen Core Services (NGCS): The base set of services needed to process a 9-1-1 call on an ESInet. This includes functional elements such as the ESRP, ECRF, LVF, BCF, Bridge, Policy Store, Logging Services and typical IP services such as DNS and DHCP. The term NG9-1-1 Core Services includes the services and not the network on which they operate.

Next Generation 9-1-1 (NG9-1-1) System: An enhanced 9-1-1 system that incorporates the handling of all 9-1-1 calls and messages, including those using IP-enabled services or other advanced communications technologies in the infrastructure of the 9-1-1 system itself.

Overflow: The process of automatically rerouting calls to an alternate facility.

Primary PSAP: A PSAP equipped with automatic number identification and automatic location identification displays and is the first point of reception of a 9-1-1 call (see PSAP).

Public Safety Answering Point (PSAP): A facility equipped and staffed to receive 9-1-1 calls. A Primary PSAP receives the calls directly. If the call is relayed or transferred, the next receiving PSAP is designated a Secondary PSAP.

Quality Assurance (QA)/Quality Control (QC): Quality assurance is the maintenance of data at a required level of quality through each step or process of preparation. Quality control is the system of maintaining standards during the development of data.

Redundancy: Duplication of components, running in parallel, to increase reliability.

Secondary PSAP: A PSAP to which 9-1-1 calls are transferred from a Primary PSAP (see PSAP).

Selective Routing (SR): The routing of a 9-1-1 call to the proper PSAP based upon the location of the caller. Selective routing is controlled by the ESN which is derived from the customer location.

Service Provider: An entity providing one or more of the following 9-1-1 elements: network, CPE, or database service.

Spatial: Relating to, occupying, or having the character or space. Geographical information systems store spatial data in regional databases.

Spatial Interface Function (SIF): A standardized data replication interface used to publish GIS data to the applications that consume GIS data in a NextGen9-1-1 system.

State 9-1-1 Office: An organization that operates on a statewide basis to coordinate the implementation and operation of 9-1-1 services. The responsibilities and level of authority of a State 9-1-1 Office vary across the nation and usually include administrative oversight, grant administration, and some rule-making authority. Wisconsin's equivalent to a State 9-1-1 Office is the Department of Military Affairs' Office of Emergency Communications.

System Service Provider (SSP): The entity acting as the prime 9-1-1 service provider for all calls and traffic throughout the state.

Telecommunicator: As used in 9-1-1, a person who is trained and employed in public safety telecommunications. The term applies to call takers, dispatchers, radio operators, data terminal operators or any combination of such functions in a PSAP.

Transfer: A feature which allows the PSAP Telecommunicator to redirect a 9-1-1 call to another location.

Trunk: Typically, a communication path between central office switches, or between the 9-1-1 Control Office and the PSAP.

Voice over Internet Protocol (VoIP): A type of IP-enabled service that allows for the two-way real time transmission of voice communications and has access to the public switched network.

Wireless Enhanced 9-1-1 (E9-1-1) Service: The service required to be provided by wireless carriers under, and governed by, FCC order.

Wireless Telecommunications: The family of Telecommunications services under the heading of Commercial Mobile Radio Service. This includes Cellular, Personal Communications Services (PCS), Mobile Satellite Services (MSS) and Enhanced Specialized Mobile Radio (ESMR).

Wireline Carrier: An incumbent local exchange carrier or local exchange carrier operating in the commonwealth, or a telephone company, or any other person, corporation or entity that provides local exchange service.

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9 Attachments

Attachment A: Previous and Current 9-1-1 Subcommittee Organizational Charts



Prior to 2017 Wisconsin Act 59:

Post-2017 Wisconsin Act 59



Attachment B: NextGen9-1-1 Focus Group Participants

This Plan was drafted in conjunction with the NG9-1-1 Focus Group, 9-1-1 Subcommittee, Wisconsin Department of Military Affairs' Office of Emergency Communications, and 911 Authority, LLC. The NG9-1-1 Focus Group was made up of the following individuals who provided extensive input and assisted in the drafting of this Plan:

Name/Agency	Type of Representation	
Eric Damkot – Washington County	WLIA NG9-1-1 Task Force/GIS	
	expert	
John Dejung – Dane County	Large PSAP/9-1-1 Subcommittee rep	
Courtney Doberstein – City of Milwaukee	Large PSAP/Municipal	
Bill Esbeck – Wisconsin State Telecommunications	Telecommunications Industry expert	
Association		
Bob Frank – WIPSCOM/Crawford County	9-1-1 Subcommittee Chair	
Frank Hanousek – Marathon County	Medium PSAP	
Dani Miller – Douglas County	9-1-1 Subcommittee Vice	
	Chair/Small PSAP	
Erik Nielson – Outagamie County	Medium PSAP	
Kristina Page – Jackson County	Small PSAP/9-1-1 Subcommittee	
	rep/Emergency Management	
Brad Rollo – Wisconsin Department of Justice	Crime Information Bureau/Criminal	
	Justice Information Services expert	
Colter Sikora – Public Service Commission	State Broadband/GIS expert	