



**Arizona Department of Administration  
Office of Grants and Federal Resources  
Arizona 9-1-1 Program**

**Text-to-9-1-1 Implementation Plan  
August 2019**

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## Background

In August 2014, the Federal Communications Commission (FCC) adopted an order requiring all wireless carriers and other providers of interconnected text messaging applications to deliver emergency texts to PSAPs that request them. As with wireless voice enhanced 9-1-1 service (Wireless Phase II), Text-to-9-1-1 service is treated as a requested service from public safety, generally a Public Safety Answering Point (PSAP), to the wireless carrier through the Request for Service process.

Per CFR 47 § 20.18 911 Service:

(iii) *Valid Request* means that:

(A) The requesting PSAP is, and certifies that it is, technically ready to receive 911 text messages in the format requested;

(B) The appropriate local or state 911 service governing authority has specifically authorized the PSAP to accept and, by extension, the covered text provider to provide, Text-to-9-1-1 service; and

(C) The requesting PSAP has provided notification to the covered text provider that it meets the foregoing requirements. Registration by the PSAP in a database made available by the Commission in accordance with requirements established in connection therewith, or any other written notification reasonably acceptable to the covered text provider, shall constitute sufficient notification for purposes of this paragraph.

The FCC cites multiple benefits of Text-to-9-1-1 services, including enhanced access for people with disabilities, alternative means of emergency communication, and availability and ease of use for the general public. The FCC encourages emergency call centers to begin accepting texts as text providers develop Text-to-9-1-1 capability, but it is up to each call center to decide on the particular method in which to implement and deploy Text-to-9-1-1 technology.

In August 2018, as a result of *Enos et.al. vs. Arizona, the State of Arizona*, 9-1-1 program has created a statewide implementation plan for deployment of Text-to-9-1-1 statewide. Per the stipulation, the State had made available \$1,362,964.85 to Arizona PSAPs to implement either an ESInet/IP Network Solution or a Web-Portal/Over-the-Top Solution. The Arizona Implementation Plan provides guidance to Arizona 9-1-1 Systems and PSAPs regarding Text-to-9-1-1 deployment.

## **How Interim Short Message Service (SMS) Text-to-9-1-1 Works**

The interim text-to-9-1-1 solution will utilize the most commonly available texting technology, i.e., carrier native short message service (SMS) texting. Carrier native SMS is a feature provided by the carrier, and not a third-party texting or messaging application (app) that may be installed on the mobile device. A valid wireless subscriber with a text-capable phone and service plan, is able to send emergency SMS messages to a PSAP by dialing “9-1-1”. Contrary to the delivery of a voice wireless enhanced 9-1-1 call, the interim solution will only process SMS messages via the carrier’s native SMS; hence, only over their native cell tower network. The interim solution will not support non-initialized phones or a wireless subscriber who is roaming. A roaming subscriber who attempts to request a Text-to-9-1-1 service will receive a bounce-back message.

SMS texting is not real-time and delays may be experienced in sending and receiving text messages especially during times of congestion where a text can be delayed by minutes if not hours. As stated in the NENA Informational Document, INF-007.1-2013, *NENA Information Document for Handling Text-to-9-1-1 in the PSAP*,

“Text messages are not delivered to its recipient in the same manner as a voice call. Texting, and in particular SMS, was designed as a secondary service within a carrier’s network while voice traffic remains the primary service. As a secondary service, it utilizes the carrier’s signaling channels and other resources when they are not being used for voice calls, essentially storing the message until network resources are available, then forwarding the text message on to its recipient. This may cause a significant delay in the delivery of a Text-to-9-1-1 message to a PSAP. During periods of congestion, e.g. due to severe weather, a text message may be delayed by several minutes, or potentially hours. Additionally, PSAPs should be aware that texting is not a real-time two-way messaging service. When handling a 9-1-1 text message, communications can be delayed due to waiting for the message sender and PSAP call taker to acknowledge receipt of the message and respond.”

Texts to 9-1-1 traverse a different part of the wireless carriers’ network than a 9-1-1 voice call and may therefore provide slightly different location information. Text-to-911 is routed to a PSAP based on the centroid of the cell sector and will deliver initial location similar to Wireless Phase I location. While a more precise location may be available, it is carrier and/or vendor implementation specific and may not apply to all 9-1-1 requests. Standards are being addressed to support a new class of service (TEXT) to assist the dispatcher in determining the type of 9-1-1 call received.

## I. 9-1-1 System/PSAP Implementation Guide

This section includes the following tasks that must be completed in order to deploy Text-to-9-1-1 services:

- Apply for funding
- Select technology platform
- Complete internal training
- Send required FCC notice
- Complete testing
- Complete public education

### a. Funding

Funding was made available through the Arizona Department of Administration, Office of Grants and Federal Resources, 9-1-1 program on August 3, 2018. The Notice of Funding Availability (NOFA) outlines the requirements the PSAP or 9-1-1 System Administrator must complete to submit a grant application for funding from the Arizona Text-to-9-1-1 Grant Program. **A grant application must be submitted and approved before Text-to-9-1-1 services may begin.** The amount available is \$1,362,964.85 and up to \$2,362,965.00, contingent upon availability of funds. Grant applications will be accepted through July 3, 2021, unless funds are fully expended.

The grant application details can be found at: <https://az911.gov/text-9-1-1>

### b. Technology Platform

The delivery of Text-to-9-1-1 services can be facilitated over three (3) types of networks: ESnet/IP Network Service Interface, Web Service or Text to TTY/TDD. While three options exist to receive Text-to-9-1-1 messages, per the 2018 stipulation, the statewide implementation plan only includes deployment through an ESnet/IP Network or Web Service/Over-the-Top.

#### i. ESnet/IP Network Service Interface

This option requires the PSAP to have both IP capable equipment and IP connectivity to the wireless service provider or to a Text Control Center (TCC) provider.

- Compatible with a full NG9-1-1 (i3 compliant) network.
- Delivers emergency requests for service over the 9-1-1 network.
- Allows for existing default and overflow protocols as well as logging solutions to be utilized consistent with other 9-1-1 calls.
- Allows for ALI display that contains information similar to a Wireless Phase I call today including the x/y coordinates of the cell site or sector centroid.
- Allows for emergency requests for service to be handled by the PSAP 9-1-1 customer premise equipment (CPE).

- Allows for the transfer of Text-to-9-1-1 requests to another text capable PSAP.

## ii. Web Service/Over-the-Top (OTT) Solution

This option requires that a PSAP have IP connectivity, either provided by their local agency or over the public internet.

- This solution does not have connectivity with the existing 9-1-1 network.
- May require additional equipment to be purchased and monitored for incoming emergency requests for services.
  - While some solutions have the ability to utilize the existing PSAP equipment for the processing of text services, not all solutions are integrated and may require the monitoring of another window and/or monitor.
  - May not connect to existing logging solutions.
- Allows for ALI display that contains information similar to a Wireless Phase I call today including the x/y coordinates of the cell site or sector centroid.
- The ability to transfer should be discussed with the TCC provider as there may be limitations.

## c. Training

### i. PSAP:

Training of PSAP personnel is an important component of Text-to-9-1-1 deployment. PSAP should review the resources provided by the National Emergency Number Association (NENA) prior to requesting Text-to-9-1-1 services for their community.

Information regarding training, template standard operating procedure(s), canned messages for responding to emergency requests and early adopter experiences can be found on the NENA website at: [http://www.nena.org/?text\\_training\\_docs](http://www.nena.org/?text_training_docs).

In addition, [NENA INF-007.1-2013, NENA Information Document for Handling Text-to-911 in the PSAP](#), is available to assist in PSAP preparations for Text-to-911 services.

## d. Required Notices

The PSAP/System Administrator is required to complete mandatory notices to the FCC and Wireless Carriers that indicate the PSAP is text ready. Registration with the FCC indicates to wireless carriers that a PSAP is ready and able to receive Text-to-9-1-1 messages. A separate notification to wireless carriers is not needed.

### i. FCC Notification

To be listed on the FCC's centralized database, PSAP Managers or System Administrators must submit the PSAP Text-to-911

Readiness and Certification Form (Form) to provide information on each PSAP that is ready to accept texts.

The Form provides entries for the PSAP to:

1. Indicate that it is text-ready
2. Include its contact information and other information necessary to notify covered text providers of the PSAP's readiness. The form enables the entry of multiple PSAPs.

In order to complete registration with the FCC, PSAPs need to:

1. Download the Form at: [PSAP Readiness Certification Form](#)
2. Fill out the Form
3. Email the completed Form to: [T911PSAPREGISTRY@fcc.gov](mailto:T911PSAPREGISTRY@fcc.gov) and CC the Arizona 9-1-1 Program at: [az911@azdoa.gov](mailto:az911@azdoa.gov)

PSAP Text-to-911 Information can be found on the FCC website below:

<https://www.fcc.gov/general/psap-text-911-readiness-and-certification-form>

#### **e. Public Education**

Educating the public regarding the capabilities and responsibilities of 9-1-1 is essential in a Text-to-9-1-1 deployment strategy. The 9-1-1 system must inform and educate the public about the services, how they work, and what to do during an emergency. Public education resources can be found at:

- <https://www.fcc.gov/consumers/guides/text-911-quick-facts-fags>
- <http://www.nena.org/?page=textresources>.

## **II. Project Implementation**

### **a. Project Management**

The 9-1-1 System must assign a project manager (PM) for the Text-to-9-1-1 deployment. The PM may be the system administrator, individual PSAP Manager, or 9-1-1 Wireless Administrator. The PM is responsible for working with the vendor to manage their Text-to-9-1-1 implementation.

#### **i. 9-1-1 Wireless Administrator**

Text-to-9-1-1 utilizes wireless technology routing, it is recommended that the responsibility of this type of service will fall under the duties of a 9-1-1 Wireless Administrator.

The 9-1-1 Wireless Administrator will have the responsibility to:

- Work with PSAPs within their wireless system and 9-1-1 Wireless Administrators from adjoining counties
- Facilitate project meetings and decisions necessary to implement the project, including routing and network design
- Serve as the "single point of contact" to the State's 9-1-1 program, wireless service providers, and other individuals/organizations involved in the delivery of Text-to-9-1-1 services

- Establish the service agreement with vendors and obtain appropriate approvals

**ii. System Administrator**

- Coordinate the training of PSAP personnel to handle Text-to-9-1-1 emergency requests for service
- Complete the public education and outreach as necessary
- Update the 9-1-1 System's Service Plan, upon completion of the project

**b. Routing**

Routing for Text-to-9-1-1 follows similar routing practices as Wireless Phase II primary call routing by utilizing the location of the tower and the sector orientation to determine the proper PSAP routing. The call will be routed to a pre-determined PSAP based on location of the tower within an E9-1-1 area. The 9-1-1 System must identify which PSAPs are primary and secondary.

**c. Back Up**

The 9-1-1 System Administrator must identify which PSAP will function as the appropriate back-up.

**d. Text-to-9-1-1 Service Agreements**

Each 9-1-1 Wireless Administrator will be responsible to work with the appropriate people within their county to determine whether they wish to pursue service agreements with the WSPs. If they do, the responsibility of presenting, negotiating, and finalizing those agreements are the total responsibility of the 9-1-1 Wireless Administrator. The Arizona 9-1-1 Program will serve as a resource to the 9-1-1 system; however, it will not manage nor negotiate the contracts. Indemnity protection has been provided to the PSAPs under federal and state legislation. Arizona Revised Statute §12-713 is provided, in part, in Attachment A.

**e. Service Plan**

Arizona's Administrative Code states that a service plan shall be submitted as part of the County/9-1-1 jurisdiction application for funds. Upon completion of the project, an updated service plan must be submitted to the Arizona 9-1-1 Program.

A service plan checklist may be found at:

<https://az911.gov/9-1-1-system-administrators/service-plan>



## Glossary

Following is a listing of relevant definitions and abbreviations that are contained in this plan.

**9-1-1 Call** - means any telephone call that is made by dialing the digits 9-1-1.

**9-1-1 System** - means a telephone system that automatically connects a caller, dialing the digits 9-1-1, to a PSAP.

**Automatic Location Identification (ALI)** - means a system capability that enables an automatic display of information defining a geographical location of the telephone used to place the 9-1-1 call.

**Automatic Number Identification (ANI)** - means a capability that enables the automatic display of the number of the telephone used to place the 9-1-1 call.

**Call Attendant** - means the person who initially answers a 9-1-1 call.

**Call Transfer** - means the call attendant determines the appropriate responding agency and transfers the 9-1-1 caller to that agency.

**Central Office (CO)** - means a telephone company facility that houses the switching and trunking equipment serving telephones in a defined area.

**Centralized Automated Message Accounting (CAMA)** - An MF signaling protocol originally designed for billing purposes, capable of transmitting a single telephone number.

**Customer Premises Equipment (CPE)** - Terminal equipment at a PSAP.

**Emergency Call** - means a telephone request for service which requires immediate action to prevent loss of life, reduce bodily injury, prevent or reduce loss of property and respond to other emergency situations determined by local policy.

**Emergency Service Number (ESN)** - A three to five digit number representing a unique combination of emergency service agencies designated to serve a specific range of addresses within a particular geographical area. The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the dispatching of the proper services.

**Enhanced 9-1-1 (E9-1-1)** - means the general term referring to emergency telephone systems with specific electronically controlled features, such as ALI, ANI, and selective routing.

**Integrated Services Digital Network (ISDN)** - A digital interface providing multiple channels for simultaneous functions between the network and CPE.

**Local Exchange Carrier (LEC)** – A telecommunications carrier under the state/local Public Utilities Act that provide local exchange telecommunications services.

**Mobile Directory Number (MDN)** - The callback number associated with a wireless phone.

**Mobile Switching Center (MSC)** - The wireless equivalent of a Central Office, which provides switching functions from wireless calls.

**Multi-Frequency (MF)** - A type of signaling used on analog interoffice and 9-1-1 trunks.

**One-Button Transfer** - means another term for a (fixed) transfer which allows the call attendant to transfer an incoming call by pressing a single button. For example, one button would transfer voice and data to a fire agency, and another button would be used for police, also known as “selective transfer.”

**Phase I, Wireless 9-1-1 Service** - means an emergency wireless telephone system with specific electronically controlled features such as ANI, specific indication of wireless communications tower site location, selective routing by geographic location of the tower site.

**Phase II, Wireless 9-1-1 Service** - means an emergency wireless telephone system with specific electronically controlled features such as ANI and ALI and selective routing by geographic location of the 9-1-1 caller.

**Provider** - means a person, company or other business that provides, or offers to provide, 9-1-1 equipment, installation, maintenance, or access services.

**Pseudo Automatic Location Identification (pALI)** - An ALI record associated with a pANI, configured to provide the location of the wireless cell of sector and information about its coverage or serving area.

**Pseudo Automatic Number Identification (pANI)** - A telephone number used to support routing of wireless 9-1-1 calls. It may identify a wireless cell tower, cell sector or PSAP to which the call should be routed.

**Public or Private Safety Agency** - means a unit of state or local government, a special purpose district, or a private firm, which provides or has the authority to provide firefighting, police, ambulance, or emergency medical services.

**Public Safety Answering Point (PSAP)** - means a 24-hour, state, local, or contracted communications facility, which has been designated by the local service board to receive 9-1-1 service calls and dispatch emergency response services in accordance with the E9-1-1 service plan.

**Public Switched Telephone Network** - means a complex of diversified channels and equipment that automatically routes communications between the calling person and called person or data equipment.

**Selective Routing (SR)** - means an enhanced 9-1-1 system feature that enables all 9-1-1 calls originating from within a defined geographical region to be answered at a pre-designated PSAP.

**Service Control Point (SCP)** – means a centralized database system used for, among other things, wireless E9-1-1 service applications. It specifies the routing of 9-1-1 calls from the cell site to the PSAP and includes all relevant cell site location information.

**Signaling System 7 (SS7)** - An inter-office signaling network separate from the voice path network, utilizing high-speed data transmission to accomplish call processing.

**Subscriber** - means any person, firm, association, corporation, agencies of federal, state and local government, or other legal entity responsible by law for payment for communication service from the telephone utility.

**Tariff** - means a document filed by a telephone company with the state telephone utility regulatory commission that lists the communication services offered by the company and gives a schedule for rates and charges.

**Telecommunications Device for the Deaf (TDD)** - means any type of instrument, such as a typewriter keyboard connected to the caller's telephone and involving special equipment at the PSAP which allows an emergency call to be made without speaking, also known as a TTY.

**Trunk** - means a circuit used for connecting a subscriber to the public switched telephone network.

**Wireless Communications Service** - means cellular, broadband PCS, and SMR that provide real-time two-way interconnected voice service, the networks of which utilize intelligent switching capability and offer seamless handoff to customers. This definition includes facilities-based service providers and non-facilities based resellers. For purposes of wireless 9-1-1 surcharge, wireless communications service does not include services whose customers do not have access to 9-1-1, or a 9-1-1-like service, a communications channel utilized only for data transmission, or a private telecommunications system.

**Wireless Communications Surcharge** - means a surcharge imposed on each wireless communications service number provided in this state and collected as part of a wireless communications service provider's monthly billing to a subscriber.

**Wireless Service Provider (WSP)** – a communications carrier who provides wireless service.

Attachment A:

§ 12-713. Providers of emergency services; civil liability

In the provision of 911 services, a person, a provider as defined in section 42-5251 or a public entity or any employee of the public entity is not liable for damages in any civil action for injuries, death or loss to a person or property that are incurred by any person with respect to all decisions made and actions or omissions taken that are based on good faith implementation except in the cases of wanton or wilful misconduct, regardless of technology platform including a public safety radio communications network, that receives, develops, collects or processes information for the service's location information databases, relays, transfers, operates, maintains or provides emergency notification services or system capabilities, or provides emergency communications or services for ambulances, police and fire departments or other public safety entities.