Call if you can, Text if you can’t

Guidelines for Interim Text-to-911 Deployment
3/6/2015 v.2

Please Note: These guidelines are in the process of evolving as the interim Text-to-911 solutions mature. Each version of this document will be dated and numbered as it is revised and updated.

What is SMS and interim text-to-911?

Full NG911 (Next Generation 911) deployment is still in development and will likely be so for several years going into the future. The interim solution was developed as a way to allow 911 to be activated via SMS text messaging prior to full NG911 development. The interim Text-to-911 solution utilizes the most commonly available texting technology, carrier native Short Message Service (SMS) texting. Carrier native SMS is a feature provided by the carrier, and not third party texting or messaging applications (apps) that may be installed on the mobile device. The interim Text-to-911 service provides support for wireless subscribers to send 911 SMS messages to PSAPs and for subscribers to receive text replies from PSAPs. Wireless customers with SMS service are able to send emergency text messages to a PSAP by using the single code “911” as the destination address of the SMS message.

Why is interim Text-to-911 needed?

According to the National Organization on Disability (2007), there are an estimated 54 million individuals with a disability in the United States, which has a total population of more than 300 million. Over 37 million individuals are deaf, hard of hearing, or have a speech disability. There are also countless wireless users who are not deaf or hard of hearing who use text as a routine means of communication. Additionally, there may be circumstances, such as domestic violence or in-progress incidents in which a voice call is not practical or dangerous to make.

Is Text-to-911 service mandatory?

Not at this time. However, under a consent agreement with APCO, NENA, the FCC, and the four major wireless carriers, the FCC required that these carriers be capable of providing the service by May of 2014. All other U.S. wireless carriers and other text messaging providers must be capable of doing so, and must respond to PSAP requests to deliver Text-to-911 by June 30, 2015, or six months from the date of a PSAP request, whichever is later. Based on the current political atmosphere and discussions, it is likely that some mechanism such as industry best practices or some type of governmental mandate (for example DOJ or the FCC) will likely require that PSAPs provide it in the future, much like TTY access.

How does the Interim SMS Text-to-911 work?

The interim solution will have three interface options; all three are explained in further detail, later in this document. Two of the three options allow Public Safety entities that have not begun deploying IP-based 911 services the capability to receive text messages without making substantial changes to their existing equipment.
What will happen in areas that do not implement Text-to-911?

All wireless carriers are required to send a “bounce-back” message to anyone who attempts to use Text-to-911 prior to local service availability or when the service may be otherwise unavailable.

What is a “bounce-back” message?

If Text-to-911 is not available, the subscriber will receive a text response explaining that the Text-to-911 service is not available and to contact 911 by another method, such as a voice call or telecommunications relay service (the latter for consumers who are deaf, hard of hearing or have a speech disability).

What are other causes of a “bounce-back” message?

There are a number of reasons including:

- The 911 message was not sent as an SMS message.
- The wireless carrier is currently unable to properly relay the SMS message.
- The PSAP has lost connectivity to its Text-to-911 service.
- The PSAP Text-to-911 service is in overload mode.

Will the Interim Text-to-911 work in roaming mode?

No, the Interim Text-to-911 solution will not be supported when a subscriber is roaming due to SMS service limitations and the customer will receive the “bounce back” message. In the context of Text-to-911, roaming means the subscriber is receiving wireless service from any carrier other than his/her home carrier regardless of the subscriber’s current location.

What are my PSAP’s text-to-911 Delivery Options?

There are three text-to-911 delivery options and there are certain prerequisites prior to requesting SMS through wireless carriers. Those options and prerequisites are as follows:

1) ESInet/IP Network Service Interface

This option requires that the PSAP has IP-capable equipment and IP connectivity to the carrier’s TCC provider. The text message will be delivered into the 911 PSAP CPE interface. This solution should be compatible with a full NG911 (i3 compliant) solution. The ALI will display the number associated with the text and information similar to a Phase 1 wireless caller today. The prerequisites are:

- PSAPs install dedicated, redundant IP circuits to the Text Control Center at their own expense or have an ESInet in place.

- PSAP customer premise equipment (CPE) must be capable of receiving IP messages on standard (NENA i3 and ATIS J-STD-110 defined) IP interfaces (SIP/MSRP).

- Call taker workstations must have integrated text handling software.
• PSAP is responsible for CPE equipment (upgrades/maintenance/technical support), firewall configurations and text call taker training.

• PSAP must provide point of contact for CPE and IP/ESInet customer support.

2) Web-based portal

This option requires that a PSAP have IP-based access, either through a private IP network or over the public Internet. A separate web portal would be opened at the beginning of the shift and would need to be monitored for incoming text messages. This solution currently requires a separate monitor for the web portal; however, some equipment manufacturers are working to incorporate the portal into the 911 CPE display. The ALI will display the number associated with the text and information similar to a Phase 1 wireless caller today. The prerequisites are:

• PSAP must have public Internet or private IP network connectivity into workstations readily available.

• PSAP workstations must have web browser capability (IE8 or higher, Chrome or Firefox).

• PSAP is responsible for CPE equipment (upgrades/maintenance/technical support) and Firewall configuration (if applicable).

• Text is not delivered to 911 directly; it is delivered through a web server via the Internet or a private IP network.

• MIS/RMS and PSAP logging/recording functions are not active during the text session, and data is obtained from the TCC separately.

• PSAP must provide point of contact to the TCC for customer support.

• PSAP needs to be logged in to the Web Portal in order to receive text messages. It will be important that the tele-communicators know how the portals work and the PSAP establish internal for monitoring connectivity.

3) Text-to-TTY/TDD

This option allows the PSAP to receive incoming text messages via E911 and their current TTY/TDD system. The text would display on the 911 equipment similar to a TTY call. The ALI display will show the caller’s text number in the location where the wireless caller’s Call Back Number is displayed on voice calls, and the x/y coordinates of the cell site or the sector centroid associated with the texting device. The text messages would be delivered via the existing 911 trunks, which would mean that once a text came in via this method, the 911 trunk over which it arrived would be tied up and unable to accept another voice call or text session until the PSAP ends the session. Text sessions will likely tie up trunks for a longer period of time than a normal 911 call. The prerequisites are:

• SMS converted to TTY (Baudot code) before sent to Public Safety 911 network.
• TTY messages sent to E911 Selective Router for delivery to the PSAP TTY call station.

• PSAP should bid ALI with ESRK/pANI for coarse location (e.g. cell site and sector centroid) related to the subscriber’s call.

• PSAP is responsible for CPE equipment (upgrades/maintenance/technical support) and call taker training, if required.

• PSAP must provide point of contact for CPE customer support.

• SMS text as TTY messages are delivered directly to the PSAP, and MIS and recording capability are included if TTY functions are integrated with CPE.

• ‘Garbling’ with SMS sent as TTY is expected to be no different than TTY at a PSAP today.

• Proper setup, prior to deployment, is required in the interconnecting networks and elements, and at the PSAP to minimize Bit Error Rate.

• Observed PSAP considerations to date include: Local TTY terminal modem settings, volume settings, PBX configurations, CPE configurations, etc.

**Is one of the three above methods preferred?**

1) If your PSAP has the ability to receive text-to-911 through the direct IP method, that would be the first recommended option.

2) If your PSAP cannot process text-to-911 through an IP-based system is the next recommended choice is web portal.

3) If your PSAP cannot process text-to-911 through an IP-based system or a Web-based system, then the next recommendation is text-to-TTY.

**How do I know if my PSAP has met requisites for connectivity for text-to-911?**

There is a checklist that can be sent out to you by contacting the Idaho 9-1-1 PM. A list specific to each provider can also be requested and at a later date may be put on the ECC website after approval.

**How does my PSAP begin to implement Text-to-911?**

First, each PSAP will need to choose the delivery option (not necessarily the solution vendor Text Control Center [TCC]) they plan to utilize to receive Text-to-911. Each wireless carrier works with a particular TCC by agreement, and all wireless carriers and TCC options will interface. In other words, a PSAP does not request service through the TCC, but which TCC the PSAP uses is determined by which wireless carrier they initiate text-to-911 services with first. It is suggested that you contact your wireless carriers first and then work with that carrier’s TCC for your PSAP.

TCCs are communications providers that will move text-to-911 sessions to PSAPs using one of the three interim solutions. Nationally, there is a small network of TCCs to interface between
carrier-originated wireless 911 text users and the PSAP environment. The TCCs use some of the functions of core NG911 system design, with specialized functionality to fit the SMS text needs. The TCCs are in the process of establishing connectivity between each other to transport text messages so they are able to interoperate with each other. This will allow PSAPs to connect to multiple carriers through a single TCC.

**How do I request text-to-911?**

After you have decided which option you are going to use for your system's deployment, it is recommended that you download, complete, and return the PSAP Text-to-911 Readiness & Certification Form found on: [http://www.fcc.gov/encyclopedia/psap-text-911-readiness-and-certification](http://www.fcc.gov/encyclopedia/psap-text-911-readiness-and-certification). By adding your PSAP into the FCC Text-to-911 Readiness and Certification Registry, this will trigger the notification to the carriers of your intent to activate the service. At this point, Verizon, Sprint, T-Mobile, AT&T and all lower tier carriers are under the consent agreement with the FCC to provide text-to-911.

Next, you should visit [http://www.nena.org/?page=textresources](http://www.nena.org/?page=textresources) to complete Appendix D (Request for Service Letter) and send it to each of the four major carriers, according to the Carrier Points of Contact information listed there. Because all carriers with Text-to-911 capability are expected to initiate the service within 6 months of your PSAP being placed on the FCC Registry, you need not reach out to the lower tier carriers in your area, unless you would prefer it.

**Do I have to request all the carriers in my area at the same time?**

No, you may time your requests based on your individual PSAP’s and community’s needs. Remember, the TCC your PSAP will be participating with is based on the first carrier implemented with both the IP and Web based interim solutions.

**Will we receive location information on Text-to-911 calls?**

Minimally, your PSAP will receive Phase I information. Consult with the individual wireless carriers and TCCs about additional location information that may be available. As with all 911 calls, information verification will be important in Text-to-911.

**There are multiple PSAPs in my jurisdiction. Can we divide Text-to-911 geographically?**

While it is currently a PSAP’s choice whether to accept Text-to-911 calls or not, NENA guidelines recommend if there are multiple PSAPs within a service district that either only one PSAP (or a several select few) process *ALL* the Text-to-911 notifications or all the PSAPs in the county process *ALL* Text-to-911 notifications. Text-to-911 should not be deployed on a sporadic basis across a county. The location-based routing of Text-to-911 sessions parallels that of wireless Phase I, that is, based on cell site and sector centroid. Because cell sector coverage does not always follow PSAP jurisdictional or county boundaries, Text-to-911 cannot be limited to these geographically-oriented boundaries. Consumers who wish to use Text-to-911 must have some clear, understandable idea of where they can and cannot utilize the service. However, please bear in mind, a 911 text may not route in the same manner as a regular wireless 911 call. You should consult with each wireless provider during deployment in regard to specific routing details.
For various reasons, it is believed that county-oriented service is preferable at the onset of deployment - either to a single PSAP in multiple PSAP counties, or to all PSAPs in a county. PSAP-by-PSAP implementation within a county can be confusing to the consumer, due to lack of service area clarity. It is a recommendation that deployments be done on a county-wide basis. If a single PSAP serves multiple counties, then all counties served by that PSAP should be deployed. It is also recognized that each PSAP is making this decision for their area on if, when, and how to implement deployment of this capability.

**How do I tell my citizens they can text to 911?**

Each 911 system should plan communication/public education of their community in a manner that meets its deployment needs and schedule.

1. Some may opt to deploy one carrier at a time and advise the public of each deployment.

2. Some may not release information until all four major carriers are deployed in their service area.

3. Some may wait for a period of time after deployment and delay making the announcement for internal or policy reasons.

No matter how or when you decide to educate your community’s public, public education is very important in deploying Text-to-911 for a number of reasons, including:

1. It does not provide location service in the same level that E911 does.

2. It is not real time.

3. It should only be used when a voice call cannot be made.

4. Only the carriers that have been deployed in the PSAP’s service area will work for the area the PSAP covers, which makes it very important for citizens to know the limitations of their text capabilities.

5. A person initiating Text-to-911 in an area that has not deployed the service will receive a bounce-back message telling them to make a voice call to 911.

6. It is important for people who use smart phones to recognize that Text-to-911 will not work on messaging applications that may “look” like SMS texting, but are actually “over the top” applications using features that are not SMS texting, such as iPhone messaging.

7. Because the features and applications can vary significantly between devices, consumers should be made aware that they are responsible for knowing what the limitations and functions of their individual devices are.

PSAP directors and managers will need to work closely with their neighboring PSAPs to establish systems for relaying out-of-jurisdiction information that may be received via Text-to-911.
Are there additional resources available to me to help me with text-to-911?

National Emergency Number Association (NENA) has made resources available to PSAPs to assist them in educating citizens about Text-to-911. Visit: 
http://www.nena.org/?page=textresources

The FCC also has resources and information on Text-to-911 education at:  
http://www.fcc.gov/text-to-911

The National 911 Office at NHTSA has a number of Text-to-911 resources at their web site: 
http://www.911.gov/911-issues/texting911.html

Any further questions or concerns can also be addressed to neighboring PSAPs that have already implemented Text-to-911 services in their area. Again, you can reference the registry at: http://transition.fcc.gov/pshs/911/Text911PSAP/Text_911_Master_PSAP_Registry.xlsx

Will my PSAP be able to transfer Text-to-911 calls to another PSAP?

At this time, no. However, changing technology may allow for this function in the future. It is important to work with the PSAPs in your area to establish protocols for relaying Text-to-911 information.

Can a PSAP initiate an outgoing text through its portal to text a 911 texter back?

Because functions may vary from provider to provider, check with the carriers and their TCCs during the course of your deployment.

How does Text-to-911 present itself at the PSAP?

Text-to-911 will come into the PSAP as a wireless Phase 1 call. Phase 2 information will not always be available, so it will be crucial for 911 operators to ascertain accurate location information. A more precise location may be available, but it is wireless carrier/vendor implementation specific. Therefore you will need to discuss this with the wireless carrier and TCC prior to implementation.

Will my PSAP receive other data such as pictures with text messages?

No, the current solution of to receive Text-to-911 is an interim solution only and pictures and other data cannot be transmitted to the PSAP. The interim solution will only process Text-to-911 messages via carrier native SMS. This means that photos, videos, or multiple recipients for a text message are not supported because the message is sent as a Multimedia Messaging Service (MMS) message and the current solutions do not support MMS. If a MMS message is sent to 911, the sender will receive a bounce-back message directing them to place a voice call to 911.

What if the caller (texter) uses texting lingo that the 911 operator doesn’t understand?

Each PSAP will need to put policies and procedures in place that fit their individual circumstances and operating processes. One option may be to have a standard introduction message response requesting that plain language be used to all extents possible.
What if we need to do EMD/pre-arrival instructions via text?

Because the circumstances of any Text-to-911 will vary and the use of EMD/pre-arrival instructions may differ accordingly, each PSAP will need to determine how to manage Text-to-911 EMD within its circumstances. It is recommended that you consult your EMD provider, your Medical Control Board as well as your risk manager as part of implementing your local policy on EMD/pre-arrival application and protocols. Some EMD providers are currently looking at text versions for their EMD.

Will Text-to-911 work on a Lifeline phone?

It depends on the services they have on the phone. If there is no text service on the phone, there is no Text-to-911. This applies to all wireless phones.

Can a non-initialized cell phone Text-to-911?

No, if the phone is inactive and does not have a data or texting plan, it cannot Text-to-911.

What do I do if someone abuses Text-to-911?

As with voice callers, once the perpetrator has been identified, refer the issue to your jurisdiction's prosecutor for review or in accordance with your PSAP's procedures.

Can Text-to-911 sessions be recorded?

At this time your audio logging recorder system cannot record Text-to-911. If you choose to use the direct IP-based or web portal methods of connectivity, the TCCs, Intrado, and TCS will store the call/transaction dialog/sessions and you can request them through the TCC. The TCCs also time and date stamp the session.

How long will the session dialogs be held by the TCCs?

Currently, there are no restrictions on the length of time the text will be kept. At this point the amount of data is very small. In the future, as the TCCs continue this practice and the data storage space required becomes larger, the TCCs may decide to limit the storage time. Each TCC may have different systems that allow each PSAP to search, view, download, and store to local storage. Check with the TCCs during your deployment process for details.

What is the procedure for requesting a Text-to-911 session dialog?

Contact the TCC providing service to your PSAP.

Will there be fees or charges for making the request?

There are no known fees to the PSAPs at this time.

Approximately how long will it take to get a Text-to-911 session dialog?

Depending on urgency, around 24-48 hours.
Is my PSAP going to see a significant increase in workload with Text-to-911?

The data is not clear yet. Call volume impacts, based on current trials and deployments of Text-to-911, have shown that concerns about PSAPs being overwhelmed by texts to 911 have not been substantiated. As of January 2014, there is no indication that Text-to-911 causes significant numbers of text messaging for emergencies. In fact, the opposite is true. Reports from the state of Vermont, and North Carolina communities around Raleigh-Durham, demonstrate that Text-to-911 is not a burden to the PSAP operations. Reports about these trials and deployments of Text-to-911 are available at:


Will my PSAP be exposed to liability if we do or don’t accept Text-to-911?

Prior to deciding to deploy Text-to-911, the PSAP and the county 911 coordinator should thoroughly explain and discuss Text-to-911 with their jurisdiction’s legal counsel and risk managers in regards to liability issues.

Is there additional funding available for providing Text-to-911 to my PSAP’s service area?

Currently in Idaho our 911 fees and surcharges already apply to any device that can access 911. Texts are made on wireless devices that can access 911 and those devices are already paying 911 fees; there is no additional funding available for Text-to-911. Fortunately, costs incurred that are directly related to deploying Text-to-911 are allowable expenses of 911 revenues. Grant funds may be available to those counties participating in the grant program/fee on a case by case basis as determined under the current grant program directives.

Additionally, other than training staff, public education, and possible software upgrades to existing equipment, costs should be low.

How do I find out what other counties in Idaho are doing in regard to Text-to-911?

In the future, if more counties elect to implement this capability, there will be information posted on the IECC web site with information about Text-to-911 deployments across the state. Your assistance in providing information about your Text-to-911 deployments will be greatly appreciated.

Acknowledgements:

Resource materials from NENA and the FCC were utilized throughout this document, their contribution and information is greatly appreciated.