Emergency Communication Networks

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To: Sheriffs and PSAP Managers & Supervisors

From: Jackie Mines, 911 Program Manager

Date: August 10, 2010

Subject: Next Generation 911 (NG911) Fact Sheet

What exactly is Next Generation (NG911)?

Next Generation 911 (NG911) is the transition of the current statewide legacy 911 system to a modern Internet Protocol (IP) based system utilizing high speed data connectivity.

Why do we need to upgrade the current 911 network that has been reliable, secure, and operational for over 30 years?

The existing E911 system has been a success story for more than 30 years, but it has been stretched to its limit as wireless and Voice over Internet Protocol (VoIP) devices are now becoming the standard method for personal communications. New wireless and IP based communications devices are being developed at a rapid rate, offering capabilities such as text and video messaging. VoIP services allow you to take your computer with you wherever you go and make phone calls globally. You could be on vacation in Mexico and make a 911 call from there but today there is no guarantee your 911 call would be answered by the Mexican authorities and the call could end up being routed to your home location Public Safety Answering Point (PSAP).   These and other advancements in modern communications technology have created the need for a more

advanced system to request and access emergency assistance. Unfortunately, the current 911system was never intended to receive calls and data from these new and emerging technologies.   As a result, through cumbersome adaptations, the current 911 system is being asked to perform functions it was not designed to handle. The nation's 911 systems are in need of a significant overhaul. Demands to modernize the 911 system are coming from national leaders including the President, Federal Communications Commission (FCC) and U. S. Department of Transportation.

What is the Minnesota 911 Program doing to upgrade the state 911 network to NG911?
The Minnesota 911 Program has embarked on a three phase project that upgrades the existing 911 network infrastructure to a highly secure and reliable IP based backbone designed specifically for the transport of emergency requests for assistance.   This project lays the groundwork that is critical to interoperability between PSAPs within the state to share critical data about the 911 caller and will eventually allow for transfer of crucial data nationwide. This infrastructure upgrade is necessary if the state is to meet the public's expectations for 911 and future applications that will support the PSAP and aid the caller.

- Phase 1 is to build interoperability between the two 911 service providers, Qwest and Independent Emergency Services LLC, (IES).
- Phase 2 is a trial with a limited group of PSAPs that will test the new IP network and IP router functionality; verify the installation process; and ensure a solid migration plan.
- Phase 3 is the implementation of the high speed network statewide.

When this project is complete, will we have NG911?
The current project in Minnesota upgrades the network connections between the 911 tandems or selective routers to the PSAP and lays the foundation for each PSAP to have other future NG911 feature functionality. Initially there will be little feature change to the PSAP except for an increase in the re-route capability and diversity to each PSAP. Future NG911 functionality options such as allowing a person to text 911 or send video of a fire, is still dependent on the finalization of national standards and approved statewide PSAP protocols.

Will PSAPs receive as many dedicated 911 phone trunks as they have today?

Yes. Each PSAP will receive the equivalent number of dedicated 911 phone trunks. They will receive the equivalent of 24 available channels configured and functional according to the PSAP's current trunk arrangement. The other available channels will not all be configured and functional until a PSAP needs additional channels.

Will the PSAPs need to pay for the new IP network?

No. The 911 Program will pay the costs for the new IP 911 network and there will be no non-recurring charges now or in the future for PSAPs to pay for additional channels to handle 911 calls.

Will new equipment be required and installed at the PSAP to terminate the NG911 IP network?

Yes. As the NG911 IP network is built out to each PSAP, four pieces of equipment will be installed in the back room to connect the IP network to the ANI/ALI controller at the PSAP. The equipment cost is approximately $40,000 and the 911 Program will pay for the installation and maintenance of this equipment. The PSAP will not be responsible to pay for this equipment.

Will there be other associated costs with the upgrade of the 911 network?

A site survey will be conducted at each PSAP to ensure the proper grounding and electrical requirements for the new equipment can be met. Other possible costs include Uninterruptable Power Supply (UPS) system, shielding and possibly programming costs to existing call answering equipment that is not covered in a maintenance contract. If it is determined that the PSAP will need to have some work done to meet these requirements, the 911 Program has grant money available to offset these costs. It is required before the PSAP incurs these costs, they get an estimate and submit it to the 911 Program for review.

How do I sign up for this grant money?

The PSAP must enter into a grant contract with the 911 Program that defines the grantees duties on how the money can be spent. An invoice for the work must be submitted for reimbursement. The counties 911 fees can be used to pay the invoice up front. It is required that PSAPs enter into the grant contract agreement before incurring any costs. The site survey should provide an indication of what costs the PSAP may incur.

Can this grant money be used to offset any costs by the Call Answering or Customer Premise Equipment (CPE) vendor at the installation and testing of the new 911 trunks?

You will have to schedule your CPE vendor for two visits as you migrate from the old trunks to the new IP network. One visit will be for testing and the other for the network cut over. The vendor visits should be covered under a standard maintenance agreement but we recommend you verify that with your CPE vendor. If you don't have a maintenance contract, then the costs incurred for the vendor's onsite visits are reimbursable with the grant dollars. Grant dollars are **NOT** available to purchase new or upgraded CPE equipment. The new equipment being placed at the PSAP will allow older versions to interface with the new network.

Do we need to upgrade or purchase new *call answering equipment* at the PSAP to be ready for NG911?

The 911 Program's network design includes a device called a "protocol converter" which will convert the IP signaling back to the CAMA signaling or the signaling type used in today's 911 trunk. The Automatic Location Identification (ALI) links will also be delivered in the same format as they are today. This means you will **NOT** have to upgrade your CPE. There are still many standards for NG911 that are being worked on, such as how to send a text message over the 911 network, so any CPE you purchase now will most likely need to be upgraded in the future. To be very clear, **the NG911 network upgrade does not require you to upgrade your 911 equipment now.**

Do we need to upgrade Computer Aided Dispatch (CAD) and/or mapping at this time to be NG911 compatible?

The goal is that you should not have to upgrade the CAD or the mapping applications at this time because the data being sent will be the same type of data and in the same format as sent today. The goal in Phase 2 is to try and identify anything that could affect your call answering equipment, CAD and mapping applications downstream and you will be notified if there are changes that we become aware of.

We have been hearing a lot about "hosted" call answering equipment. What is the state's position on PSAPs going together to purchase a "hosted" call answering solution?

The 911 Program is not opposed to hosted call answering equipment but the 911 Program would like the opportunity to review the network design of the applications begin proposed. We continue to meet with Qwest and IES in regard to their hosted solutions.

This is a new application and there should be additional testing that is completed to ensure that the NG911 network conditional and default routing applications work properly with the host and remote answering sites to ensure proper routing in all outage situations.

We have asked the vendors to test these new applications with the 911 network both old and new and provide test results to the 911 Program. Currently we have not received any test results but would also like to test these applications in the Phase 2 portion of the NG911 project. If multiple counties in a region purchase or use a hosted application, it is important to develop a plan to address possible outages that could affect all PSAPs and identify which PSAP or PSAPs would back up the sites affected by an outage. Our main concern is to ensure that multiple primary PSAPs are not out of service or partially out of service at a given time.

As new information becomes available or new questions arise, this document will be updated. If you have questions or comments, I can be reached at (651) 201-7550 or jackie.mines@state.mn.us.