Potential Impacts of Next Generation 911 on Call Center Personnel

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Easing the Pain of Next Generation 911©

If the prospect of implementing Next Generation 911 seems overwhelming then the information and considerations within this white paper may have some solutions for your center. This paper deals with the impact of Next Generation 911 on Emergency Call Receivers, Centers and other staff.
1. Executive Summary (by De Hicks, Ph.D.)

Connectivity is the key to effective and efficient public safety communications. Since the advent of 9-1-1 systems and services a generation ago, rapid and reliable response to emergencies has been possible because of the ability to connect citizens with public safety resources.

Next Generation 9-1-1 technologies enable improved connectivity between public safety agencies and increasingly mobile, digital and wireless citizens. With the ubiquity of personal, portable communications tools in all forms, 9-1-1 agencies are faced with the necessity to build the capacity to respond using those same technologies.

The citizenry communicates using voice, text, email, video and social networking platforms in real time. Public safety agencies must do the same or risk failure at their mission.

The following paper, presented by the graduates of Spokane 9-1-1’s Advanced School of Leadership, describes some of the challenges 9-1-1 call centers will face in creating a “next generation” workforce capable of thriving in an environment that is increasingly complex.

While Spokane 9-1-1 is a “call receiving only” agency, handing off calls to separate Law and Fire agencies for dispatch, many of the challenges addressed in such a context are similar to those faced by other, differently structured organizations.

This paper presents an overview of impacts on the workforce, facilities, training, recruitment, finances and staff resilience. Beyond the overview, this paper makes several recommendations so that your agency can position itself to thrive as the public calls, texts, sends pictures and real-time videos to the call center with the expectation that better public safety will result.

The workforce will need to be more resilient. The training programs will need to enable Call Receivers to deal with incoming voice, text and video calls simultaneously. Supervisors and Administration will need to prepare for the significant impact on the length of calls or unit of work as text communication takes much longer than voice. Boards and Administrators will need to plan for staffing and facility impacts accordingly as well as for significantly larger technology budgets. The public will need to be educated about how and when to use 9-1-1 appropriately.

The public already expects 9-1-1 centers to match personal technology. With the current and growing gaps between public expectations and 9-1-1 center capacities the potential risk to public safety is significant. Next Generation 9-1-1 impacts are upon us.
2. Introduction

Cell phones are an intrinsic part of the modern culture. The 25 year old industry has seen a 269% increase in active cell phone numbers in the United States since 1987.

- One million active cell phones\(^1\) in 1987.
- 270 million cell phones in 2009.
- 300 million\(^2\) cell phones June 2011.

![Active Cell Phones vs US Population](image1.png)

**Figure 1 – Cell Phones in the US**

![Daily 911 Calls from Cellphones](image2.png)

**Figure 2 – Cell calls to 911**

The increase in cell phone use has translated into an exponential growth in cell phone calls to 9-1-1.

As you may have summarized, this increase has led to an increase in the number of text messages sent. Americans send nearly 200 billion text messages monthly\(^3\).

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We predict that for a specific age group the increase in cell phone calls to 911 will be analogous to texting 911. We define this prediction in Chapter 10.

**Messaging**

Short Message Service (SMS) is the text component of mobile communications; commonly referred to as texting. Other mobile communications components exist: Multimedia Messaging Service (MMS), Video Conferencing and, streaming media. MMS includes photos, videos and two-way video conversations like Skype. We refer to all types of mobile messaging as media in this paper.

**Assumptions**

Much of the technology for Next Generation 911 is in the development stages and we made assumptions to complete our research.

- incoming media calls will provide location information for the caller.
- progression from SMS only messaging to 911 to other forms is inevitable and we included all message types in our research.
- media will be presented to the call receiver and that call receiver will attach it to the call for service via a Computer Aided Dispatch (CAD) program.

We are expert call receivers and have focused the paper on call taking rather than a combination of call taking/dispatching. However, the issues addressed may impact all emergency services personnel, including dispatchers, supervisors and administration. One further assumption we made in creating this document is that we expect that all call receivers to answer all types of incoming calls, voice and media equally.
Demography

Demography is defined as the statistical study of human population. Generations are both familial and cultural. Within these two categories there are varied definitions for each generation. Regardless of how the generation is defined the information is a generalization based on statics and trends and does not represent each individual within the generation.

For our paper we define a generation as person born within the specific timeframes detailed below.

![Generations Living in America](image)

**Figure 4 – Demography**

Research on demography explains that the date ranges for the birth years of people in the GI, Silent, and Baby Boomer Generations as well as the beginning of Gen X won’t change, however, date ranges for the end of Gen X, the beginning and end of the Millennial and Homeland Generations vary depending on the source used.
3. Workload

Next Generation 911 has become a common phrase in the news and within many Emergency Communication Centers (ECC). Across the country, agencies are now accepting email and text reporting as an alternative way to access 911. Once fully implemented, Next Generation 911 (NG-911) will facilitate 911 call and data sharing, provide equal access for all callers, particularly the deaf and hard of hearing, create a redundant and secure statewide emergency network, and provide backup for any overflow due to periods of high call volume and planned or unplanned outages\(^4\). Based on the need for a more advanced system to access emergency services and on the fact that the current system is unable to process these needs; NG-911 services will quickly become a staple in the way the community accesses 911. Implementing Next Generation technologies will have a large impact on the workload within each agency.

The types of media that ECC may be required to accept are varied. Some possibilities are short message service (texting), multi-media message (photos), electronic mail (e-mail), instant messaging (IM), Skype, streaming video, and Telematics (automatic crash notifications). Implementation of these media will most likely be done in phases, based upon vendor and cell phone evolution, and funding\(^5\).

Consideration:

- There will most likely be additional types of media in the near future, other than what is listed here, such as social media like Twitter and Facebook.

At this point there is no way to know for sure what the impact will be on the communications center. However, one theory is that the call load may increase due to the ability to reach more demographics such as the hearing and speech impaired. This group has access to 911, but often finds other ways to handle their emergency as TTY can be cumbersome. People in their teens and early twenties may contact 911 more often through text as it is often their primary way to communicate. There could also be an increase as many citizens will want to test the technology.


Most agencies can handle an increase or decrease of workload of 5%\textsuperscript{6}, however, an increase of 10% in requests for service would result in the need for approximately 14% more Call Receivers and 50% more supervisors\textsuperscript{7}. These numbers apply to the Spokane County ECC and are a rough estimate based on current incoming call volume and population. The increase of Call Receivers is to handle the possible influx of calls, while the additional number of supervisors would be needed to not only supervise daily activities, but also to achieve the optimal “one supervisor to eight employees” span of control\textsuperscript{8}. Adding Call Receivers will require more space and create more noise in the room. The additional supervisors will be able to more efficiently answer questions near the Call Receiver and not across the room. These numbers would change for those agencies that are experiencing an increase or decrease in population.

Years ago, the average highway crash may have netted one 911 call from a driver who stopped to use a public phone. Today every driver on the road has a cell phone. When a bridge in Minnesota collapsed in 2007, more than 100 calls poured into 911 in the first two minutes. The state’s 911 center was equipped to handle the spike, but if each of those calls had carried video, it’s unclear if dispatchers could have identified the images that actually mattered\textsuperscript{9}.

Most significantly is the change to the actual unit of work. A current voice call for Spokane County takes on average, one minute, 38 seconds. Based on ten test text calls conducted by Spokane County employees (see Fig. 5) a text message could increase that time three to ten times as long. This broad estimate depends on several variables such as; whether the phone system interfaces with the Computer Aided Dispatch (CAD) program, if the Automatic Number Identification/Automatic Location Identification (ANI/ALI) information is given with the media, or only latitude and longitude, and how proficient the caller is with the type of technology they are using. Another variable is whichever type of software that is providing the NG-911 capabilities. For example, Agent 511, an independent vendor that provides mobile messaging solutions for public and private sectors, presented a webinar that displayed the ability to carry on multiple text conversations at one time. The format is similar to America OnLine’s Instant Messenger chat boxes. Each conversation is contained in a separate box. Not only can Agent 511 reopen the same chat box if a caller calls back a second or

\textsuperscript{6} Hicks, Dr. D. (2011). Rule of 5%. Advanced School of Leadership conversation.
\textsuperscript{8} Hicks, Dr. D. (2011). Advanced School of Leadership conversation.
more times, but also accepts video and photos. With Agent 511, all possible media is saved in the same file.

The above variables can directly impact the amount of time that is required to complete a call for service. This long processing time may lead to a delay in response. Being able to process more than one text request for service can cut down on lag time while waiting for the caller to respond, however, the individual call receiver may or may not be capable of processing multiple text messages simultaneously.

Call Receivers from Spokane County 911 performed a series of test text messages to 911 to demonstrate the unit of time required for a text messaging request for service. The participants were experienced call receivers and use text messaging on a regular basis. The test was conducted in a manner that the “caller” responded to the “call receiver” immediately and only one call was processed at a time.

<table>
<thead>
<tr>
<th>Type of Call</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Violence</td>
<td>00:10:32</td>
</tr>
<tr>
<td>Fight</td>
<td>00:7:59</td>
</tr>
<tr>
<td>Accident</td>
<td>00:7:37</td>
</tr>
<tr>
<td>Argument</td>
<td>00:9:48</td>
</tr>
<tr>
<td>Suspicious Vehicle</td>
<td>00:8:12</td>
</tr>
<tr>
<td>Commercial Robbery</td>
<td>00:12:19</td>
</tr>
<tr>
<td>Welfare</td>
<td>00:11:52</td>
</tr>
<tr>
<td>Party/Noise</td>
<td>00:6:30</td>
</tr>
<tr>
<td>Residential Burglary</td>
<td>00:12:06</td>
</tr>
</tbody>
</table>

*Figure 5 – Summary Test Text*

Another way to look at the increase in the unit of time is the average time it takes to process a teletypewriter (TTY) call. The average time in Spokane County in 2010 was six minutes and fifty seconds, again, well above the average of a 911 voice call, one minute, 38 seconds.
Suggestions:

- Having the ability to auto-insert text information into your CAD system.
- Quick reply option after receiving a text request, asking if the caller is able to accept an incoming call from 911.
- Only accept media for 911 emergencies, not business or other non-emergency lines.
- As each new type of media is introduced, re-evaluate work load and staffing needs.

Considerations:

- Text messaging may become the preferred way to contact 911. Meaning the impact the amount of incoming text messages could be significant.
- How will CAD and media data be stored? How easy is it to retrieve?
- For those that do not receive ANI/ALI, a program that is able to plot latitude/longitude may be helpful.

After all the information has been gathered in order to process an emergency, how long until the call receiver is available to take the next request for service? Having a program so that the media is able to attach to the CAD will result in less time being needed to complete all aspects of the request for service as well as make for a quicker processing time for those preparing recording requests.

Communication centers need to be aware that the workload may be increased even more due to the flux of media changes. Once a specific unit of information is received, a decision will have to be made on how to process that information. Is it important for the officer to see? Or does it just need to be attached to the call? Records staff will also be affected by this; the different types of media involved with the report will need to be retained.

Once the public is aware that their individual ECC is able to accept different types of media, it is likely that within the first year the new technology has been implemented, the call volume will spike due to people wanting to test the new capabilities of the NG-911 system. As each new type of media is introduced, call centers will experience a spike in the call volume, and therefore, the work load.

Another consideration is with more employees and possibly a larger space, it may be difficult for the supervisor to assist everyone and be close enough to observe all the
employees. Instead of one supervisor monitoring the room from a central station, it might be helpful to have one moving around the floor, available to assist call receivers quickly. This may be a technique employed during the adjustment period, or may become a permanent solution depending on any increase in volume. Having a well-designed call center will maximize a supervisor’s ability to monitor room volume and the needs of call receivers.

The transition to NG-911 may dramatically impact current employees. As with any other immense change, many staff members may believe what they have to learn is too much for them to handle. Some staff will be close to retirement and feel that this would be a good time to leave. Generational problems, such as lack of knowledge of current technology, may be intimidating. It is imperative that the employees are prepared in advance, like they would for any other big transition. If your employees are not prepared and trained ahead of time, expect to lose 25% of your current staffing.\(^\text{10}\)

**Suggestion:**
- Provide Resilience Training (see page 20)
- Prepare a time line to show the changes the staff has been able to make in the past to demonstrate their ability to overcome any obstacles.

When evaluating the work load for different areas of the agency, be aware of the unit of work that will be required when it is time to purchase equipment to be compliant with NG-911 (CAD, Records Management Systems (RMS), Logging Recorders, etc.). Many staff members will be affected when developing requests for proposals; verifying and checking for equipment redundancy, hiring a consultant and implementing the selected equipment, whether for an upgrade or replacement.

The transition to NG9-1-1 has impacts upon operations within all stakeholder organizations. The level of impact may depend upon the responsibility of the entity processing the emergency call. For example, for entities in originating networks it may be as simple as redirecting calls to the NG9-1-1 network. For entities such as 9-1-1 Authorities it may require developing transition plans to

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upgrade or replace equipment to support the NG9-1-1 services and capabilities. It is expected that NENA’s Operations Committee will develop Standard Operating Procedures (SOPs) and Methods of Operations (MOPs) that will facilitate the introduction of NG9-1-1\textsuperscript{11}.

For liability purposes, review all applicable policies to ensure the ability to accommodate for the unusual circumstances created by NG-911. Remember to take into account responses to media requests for service when the information is incomplete. For instance, a text message is initiated, but they do not respond to the call receiver? Or, a photo of a vehicle involved in an accident? Will a voice call be initiated? How much investigation will be expected?

Of all the possible ways call centers will be impacted, these seem clear: this will have a huge impact on one, the amount of incoming requests for service, two, the time it takes to process those requests, three, the number of employees needed, and four, space for those employees. The coming challenges of NG-911 will dramatically affect all aspects of the Emergency Communications Center, and the agencies it serves.

4. Employee Impact

In the following pages ideas and thoughts have been contributed to address the concerns with the impact of the Next Generation 911 will have on employees. We have included the demography that many directors of the 911 call centers, state and nationwide, will have to adapt to their styles to ensure the impact of this new form of call taking is minimized. We explore both the positive and negative impacts likely to be witnessed during the updating process; the vicarious trauma that may be experienced through the viewing of new forms of media that will make its appearance on the center floor and finally we discuss resilience training to mitigate the negative effects of vicarious trauma.

Workplace Demography

The Millennials aren't just our texters, they are our employees. Spokane County 911 has representatives from three of the six generations in the call center. Of the 54 employees, 13 (24%) are Baby Boomers, 21 (39%) are Generation X and 20 (37%) are Millennials. This is likely the trend throughout Emergency Communications Centers nationwide. As discussed before, Millennials will be the main workforce in America as the Baby Boomers retire.

![Demography of Spokane County 911](image)

**Figure 6 – Spokane County 911 Employees**

Employers and managers have adapted to the differences between the Silents, Boomers and Gen X’ers but the Millennials are an entirely new type of American worker.
Members of this group have the most involved parents\textsuperscript{12} in history and have been raised with technology and change as a constant\textsuperscript{13}. And as Figure 1 shows it is also the first group in recorded history that does not list work ethic in the top five attributes of their own generation.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure7.png}
\caption{Figure 7 – PEW Research Center: A Portrait of Generation Next}
\end{figure}

This does not mean that Millennials aren’t good employees, just different. The factors that make them unique also make them valuable in the workplace. They are used to change, and are confident, collaborative, multicultural, innate multitaskers, and goal oriented\textsuperscript{14}. The constant use of technology and being connected by this age group has led to a generation that can multitask efficiently\textsuperscript{15}. Advancements in technology have produced employees who are used to and expect change in nearly all facets of life.

In 2005 many Millennials began entering the workforce and other workers stereotyped them as having a sense of entitlement, needing instant gratification and as slackers. This has proved to be an inaccurate assessment\textsuperscript{16}. Chuck Underwood from the consulting firm of The Generational Imperative, Incorporated states in his lecture: “Generational Leadership Transition and the American Marketplace” that

\begin{itemize}
\end{itemize}
“America’s next great generation is a sharp departure from Generation X. Optimistic, idealistic, patriotic and over-parented. They’ll be all about ACTION.\textsuperscript{17}"

There are some challenges with Millennials. Growing up with involved parents has taught them to question leaders, challenge the status quo and expect immediate feedback. Living through events such as Columbine, 9/11, and Hurricane Katrina taught them to put family before work. “Work to Live not Live to Work” is their unofficial motto. Millennial's relaxed sense of style that does not readily conform to business or professional dress codes and may lead to issues in centers that have defined dress code. A sense of employer loyalty or planning for long term employment with a single company does not show up on the Millennial agenda\textsuperscript{18}. Millennials are very connected online and use social networking to communicate, which could lead to confidentially issues.

![Do You Have a Profile on a Social Networking Site?](image)

**Figure 8 – Social Networking**

Solutions for managing and working with Millennials include developing leadership in management and other employees. Provide continual learning and enrichment opportunities for employees or access to those opportunities. Make work fun; embrace the ideas promoted by the Pike Place Fish Market. Fun in the workplace can be as simple as having themed dress-up days and potluck meals or as involved as an agency sponsored barbeque at the communications center. Social media confidentially breaches may be mitigated by the use of journaling beyond the training phase to allow the employee to react to work situations or calls.


Millennials and to some extent Gen X-ers have a unique subset in their demographic. *The Gamer*. Gamers are often stereotyped as lazy, unmotivated slackers\(^{19}\); however, games provided players with unique skills and disposition for the workplace.

Cooperative based and Massive Multiplayer Online Games (MMOG or MMO) promote goal oriented teamwork.

At any time an MMOG can have thousands of players playing at the same time via the internet. Some, like World of Warcraft (WoW), create a new world unique to the game play are called Massive Multiplayer Online Role Playing Game (MMORPG). Others are Massive Multiplayer Online First Person Shooter (MMOFPS) like Call of Duty which has team based combat.

Diversity is the key to successful teams in MMOG; a diverse group with complementary skills will succeed where an individual will fail.

The games themselves have very specific rules which must be followed to win. Gamers play to win so they know to follow the rules.

Games teach and develop problem solving skills through repetition and failure. Failures teach the gamer to create new strategies to successfully complete the task.\(^{20}\)

Change is a constant in MMOG games. The game universe evolves as the players interact with each other and the gaming environment. Gamers create and thrive on change.\(^{21}\)

Gamers, like Millennials, present some challenges in the workforce. Occasionally collaboration is seen as a means to an end; once the specific challenge is overcome teammates may be sacrificed for advancement. Their innovative problem-solving skills may lead to risk taking which fall outside the employee’s scope of authority. Developing leadership skills in employees may diminish the instinct to sacrifice co-workers for personal advancement. Presenting employees with well-defined parameters for problem-solving may lessen the chance that out-of-the-box thinking will push the authority boundary but allow creativity to benefit the organization.

Demography deals in generalizations and an individual should not be stereotype based upon the generation in which he or she was born.

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Positive Impact of Next Generation 911

The positive impact of NG911 being implemented in an organization means call receivers will be able to see photo or video of an incident, and be able to provide more detail to responders. The average caller might not be able to convey exactly what they see, and with a photo or video available, it will improve the accuracy of information being relayed by the caller. More information can be essential in the triage of the call, as well as provide better clarity, and easier processing of the call. With this information, call processing is more efficient, providing better customer service to callers.

Call receivers have the knowledge of what dispatch needs, and being able to view pictures or videos will provide greater solvability, without having to rely on the caller’s memory or perception for information. Calls will be processed more accurately and will provide improved credibility with dispatch and responders.

With the implementation of NG911, the type of worker attracted to the job will more likely have a strong technical background, since they were born in the wired world. These types of workers will be able to learn the new technology faster, and become a vital part of the organization by helping existing employees with new computer applications.

Detailing the full scope of what the positive impact NG911 will have on employees is probably beyond the scope of this paper considering there are very few agencies that have a fully functioning NG911 system in place. However, keep in mind technology advances such as CAD, weren’t always embraced immediately, now we can’t imagine doing our jobs without it. Going from call cards to a computer system expedited the process, and made the transfer of information more efficient. New equipment for NG911 will probably be comprised with an updated version of CAD, which could include, but not limited to, spell correction, auto-populated phrases, and better search functions.

Other positive effects on employees could be; confidence with handling NG911 call processing, provide a sense of job fulfillment, which encourages more involvement in work projects, opportunities for promotion and personal growth, and recognition for a job well done.

Negative Impact of Next Generation 911

There are many negative impacts that could affect employees when NG911 is implemented. Organizations need to be aware of these possible issues and be prepared for the likelihood that they will encounter them. Everyone will react differently, but some impacts will be seen organization wide.

With the implementation of NG911 organizations will likely begin to draw a much younger pool of applicants who are more familiar with technology and are used to doing things such as texting, video chatting, and playing video games. The younger average age of the employee will likely increase turnover as they could possibly see 911 as a stepping stone job as opposed to a career.

![Figure 9 – Generations](image)

Millennials (those who entered the workforce beginning in 2000) might work at a job for a shorter period, not because of lack of commitment but due to a desire for variety and change\(^{18}\). This should be considered during the hiring process. Younger employees also run the risk of being less stable and less settled workers simply because of their desire for variety and change\(^{19,20}\). Millennials tend to be more focused on a work and personal life balance; they want jobs that allow opportunities for other aspects of life\(^{21}\).

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They might have a different idea of work ethic, appropriate work culture, sick leave use, and a variety of other differences\textsuperscript{22}.

**Mixing Generations**

The larger number of new millennial employees could cause a delay in gathering information which could result in frustration from the older more experienced employee. This could result in a lower work product and quality because the more experienced employee could feel like they must pick up the slack. On the other side of the coin the older generation could take more time on a call due to their unfamiliarity with new technology. This could frustrate other employees who are more adept at the new media forms we will be dealing with.

The Millennials that are likely to join our organizations will typically be far less resilient\textsuperscript{23} in the workplace than the employees we currently have. This generation of people seems to have less of an ability to deal with stress that accompanies working in a chaotic environment like a call or dispatch center. They appear to have a harder time accepting criticism or negative comments. This will certainly be an issue in our profession where it is a daily occurrence to be criticized and corrected by both customers and co-workers. They tend to need longer to bounce back and recover from certain scenarios. In this profession that could spell disaster for either them or someone who is relying on their assistance\textsuperscript{24}.

**911 Center Impacts**

An increase in call volume and processing time will require more employees to answer those calls. More employees mean that either your current workspace will be far more crowded, or you will have to increase your work space. This could cause finance issues, logistic issues, and a variety of other problems could arise as well. Think about the parking area at your center, that alone could cause space issues, let alone where they will sit once they’re in the building. If your center becomes more cramped imagine the toll it will take on employee morale.

For both current and future employees the new media forms could have a negative impact simply because of the ability to share pictures, video, and texts with other co-workers.

\textsuperscript{24} Palmer, S. (2007) Toxic Childhood- How The Modern World Is Damaging Our Children And What We Can Do About It
This could cause people to be unavailable for a phone call if they are at a different console looking at the video that just came in. It will also likely increase talking about calls, possibly in a negative manner, between calls. This is usually frowned upon by agencies and the likelihood it would increase needs to be considered.

Vicarious Trauma will also very likely have a negative impact on the workforce. It certainly could cause retention problems and possibly even hiring problems for people concerned they might not be able to deal with more visual information. The vicarious trauma section will give you more in depth insight to this issue.

**Vicarious Trauma**

Vicarious: taking the place of another person or thing; acting or serving as a substitute\(^{23}\).

Trauma: an experience that produces psychological injury or pain\(^{24}\).

Think about what types of images may be seen as the public begins to send photos and videos to the 911 call receivers: an officer being shot, a child being beaten, a fatal car accident, inappropriate images sent as a prank. All of these and more are likely to affect personnel in any number of ways. Some of these images may just cause a laugh, some may cause a few sleepless nights, desensitization, and some images may build within a call receiver until it causes a break; which could be in the form of a call receiver no longer being able to process an incident with empathy and sensitivity.

The risk to call receivers experiencing a trauma over something they have seen is much more likely to happen than when it is only heard. When watching a video that consists of violent imagery, more of your senses are involved, heightening the experience. Most call receivers will be able to compartmentalize these images and process them in healthy ways. Some others may think they have handled the emotional impact correctly until the point they have seen too many, or until they identify with the image or the video in some way\(^{25}\). Once a personal connection has been made, it is a very real possibility that what the individual experiences becomes a real trauma, which is as damaging as what a first responder would face.

As these symptoms progress, the individual may start calling in sick to work, causing others to have to pick up their duties and work longer hours. At some point, the trauma may become so great it could lead to psychological distress and further trauma such as


\(^{25}\) Hicks, Dr. D. (2011). Advanced School of Leadership conversation
Post Traumatic Stress Disorder (PTSD)\textsuperscript{26}. Not only can these events alter one's experiences at work, but also in their home life. Someone coping with a Vicarious Trauma may find that they don't enjoy their normal activities like they once did. They could become emotionally numb towards family and friends, experience nightmares, and have difficulty feeling empathy for another person's situation.

So what can be done to prevent this from occurring? Vince Savoia, a paramedic and the founder of the Tema Conter Memorial Trust, believes that first and foremost is providing pre-incident training\textsuperscript{27}. Pre-incident training provides the employees with a clear understanding of acute accumulation of critical incident and vicarious trauma. This way, not only would everyone be able to recognize the signs, but be more aware of what leads up to a critical incident. Next, having the spouses or significant others participate in additional training would be incredibly beneficial as these people are often the first ones to recognize the signs of trauma, and are more likely to ask for help for that person, much quicker than that individual themselves.

It is also very important to have training in place that focuses on trying to break down the stigma of asking for help, and of worrying how one is seen by their peers. If there is trust and a strong support among employees, those suffering the effects of trauma will more likely utilize services that are provided by the agency, such as employee assistance programs (counseling with mental health professionals), mentoring programs, and peer support groups. There are agencies that offer expert training and advice on ways to implement this type of training.

A suggestion when developing or improving an agency peer support group is instead of accepting anyone who volunteers to be peer supporters, poll the employees and find out to whom they are actually willing to talk. Out of the employees nominated, find out which are willing to participate and test those to gauge their abilities and resilience. Savoia recommends a psychometric test which measures knowledge, attitudes, personality traits, and educational measurement\textsuperscript{28}. Those that fit the best would then be selected to continue training that would supplement pre-incident training. These steps may differ from those of a non NG-911 environment due to the lower risk of employees experiencing Vicarious Trauma.

\textsuperscript{26} Gurevich, Maria, PhD, Halpern, Janice, MD FRCPC, Brazeau, Paulette, MEd, MA, Defina, Piera S., BSW, Schwartz, Brian, MD CCFP(EM). (in press). Frontline Stress behind the Scenes: Emergency Medical Dispatchers. Retrieved from http://www.tema.ca/Research.html
\textsuperscript{27} Savoia, Vince. (2010). Phone conversation.
Not only is it the employer’s responsibility to provide training, preventive measure, and follow-up programs geared towards maintaining their staff’s mental health, it is also the individual employee’s responsibility. Each person should take the time to assess their level of resilience, history of trauma (in any form), and remember to set personal and professional boundaries.

Suggestions:
- Provide pre-incident training
- Provide an employee counseling program and a peer support group
- Detail policy and procedure for media sharing in the ECC

With an eye set towards the future and the repercussions that could emerge from the viewing of photos and videos, the possibility of vicarious trauma to personnel can be minimized and possibly even provide an opportunity for personal growth and cohesiveness between employees within the agency.

**Resilience Training**

Merriam-Webster’s online dictionary defines ‘Resilience’ as:

> “an ability to recover from or adjust easily to misfortune or change”

The layman’s idea of resilience is more of an understanding that when stressful situations occur, some people excel and others do not. The idea that people thrive on stress is not a new idea.

A sect of our population that may require the greatest training within the scope of attaining and maintaining resiliency would be the U.S. soldiers. The U.S. Army has witnessed an influx of suicides from its returning soldiers; the U.S. Army notated 343 suicides in 2010. To combat the effects of war, Walter Reed Army Institute of Research (WRAIR) created the Resilience Training Overview (RTO). The most recent case of suicide in the State of Washington depicts an Army Ranger at Joint Base Lewis-McChord killed himself while facing his ninth deployment to the Middle East.

In the overview, WRAIR shows the Department of the Army being dedicated to showing new recruits/cadets various methods in dealing with and overcoming traumatic events.

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Starting in basic training and Reserve Officer Training Corps (ROTC), new soldiers are provided with an introduction to adapting to the strenuous life associated with living in a combat environment. Similar to this idea, Spokane County has implemented a policy that all newly hired employees will keep a journal with daily entries regarding his or her training and how well they are coping with their call taking. This would allow the front line trainers, those that are with the trainees day in and day out, to become accustomed to the habits and thought processes of the new hires. This permits the trainers to spot any deviations from the trainee’s normal patterns. Once spotted, the trainer would be able to offer the trainee possible measures to curb the emotions, which may lead to the trainee to take advantage of Spokane County’s Employee Assistance Program (EAP), or the Peer Support Program, both of which will be discussed later in this chapter.

Hitting a little closer to home for the employees of Public Safety Answering Points (PSAP), there have been a steady number of suicides taking the lives of retired and active Law Enforcement officers. In 2009, a suicide study conducted by www.badgeoflife.com showed 143 law enforcement officers committed suicide that year\(^\text{32}\). While certain lifestyles can be attributed to the escalation of suicides (i.e. alcoholism, divorce), the idea of stress and trauma experienced in the field of work cannot be denied as an accelerant. The idea of using alcohol as a means to numb the effects of the stress one can feel in being a 911 Call Receiver could be inviting as a temporary solution; however, it has been shown, in an article written by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), “high levels of stress may influence drinking when alternative resources are lacking\(^\text{33}\)”. In light of this, it is imperative that every PSAP encourage call receivers to talk about their emotions – be it with coworkers, administration, on or off site therapists or family members - to ensure a healthy outlook while at the job or at home.

Factors of Influence

In deciding what causes the stress that would require one to be resilient, the influences are great. The following is a diagram that depicts resiliency as a living organism that thrives on the thoughts and emotions of the affected person as a factor in which the stressors can cause negative results. The diagram is a part of an article, ‘The Resiliency Model\(^\text{34}\)” created by Embrace the Future Resiliency Resource Centre.

In looking at the diagram below, it is important to recognize that all aspects of one’s life affect resiliency and cause various levels of stress. In understanding the greatest impact

of stress and breakdown of resiliency is caused by the call receiver’s own thoughts and emotions pertaining to their current environment, one cannot completely omit outside factors facilitating in increased stress. No doubt everyone has had a moment of stress when sitting in a doctor’s or dentist chair – this is known as the ‘fight or flight’ mode. This is recognized as the hair standing straight up on one’s arms, increased breathing rate and pupils dilating; however, there are intrinsic biological reactions that are not noticeable: ‘Blood vessels to the kidney and digestive system being constricted, effectively shutting down systems that are not essential, and Endorphins, which are the body’s natural pain killers, are released’.

![Figure 10 – Factors Affecting Resiliency](http://changingminds.org/explanations/brain/fight_flight.htm)
Watching for these fight or flight clues being expressed by a call receiver, supervisor or family member, and catching them early enough, could prevent a further breakdown of their ability to cope with their job.

Radiating outward in the diagram, one can see that call receivers are affected by other external influences – this portion of the paper will speak solely about two portions: media and support services.

**Media Influences**

Let’s begin with the media aspect. While throughout this paper the technology needed to maintain compliance as Next Generation 911 rolls near has been slightly mentioned, one cannot imagine the forms of media to which the call receiver will be accosted. Will there be photos or videos of automobile accidents? Most certainly, due to the population trying to prove innocence and guilt in those moments. Will there be photos or videos of graphic deaths or dismemberments that may or may not have occurred as a result of these accidents? Perhaps. Society, it seems, has veered ever closer to the brink of becoming a sensationalist driven civilization, therefore, the idea of people wanting to shock anyone they could by these images cannot be denied.

The U.S. population is not new to the idea of viewing graphic images. The popular studies dictate the average child will witness 200,000 violent acts and 16,000 murders depicted on television by the time he or she is 18 years old\(^3\). With these high of numbers, one has to ask how a single photograph from an accident, be it automotive, hiking or shooting, could have such an impact on the call receivers?

A large contributing factor of stress can also be linked directly with the grief associated in viewing images that allows the call receiver to relate to whoever is being depicted in the image. For example: a single person with no children may not be directly affected by the visual image of a toddler being injured; however, take that same person but give him or her a child and the reaction is completely different as whatever is being seen in the photo can give that person the idea of that toddler being his or her child. Watching a Hollywood movie or playing a video game has a sense of separation from the viewer and the act. In the eyes of the movie watcher/game player, the images are not real – the actors go home at the end of the day, the pixels of the game are rest when the power is shut off. However, the idea of the photo containing a family member or a friend that can be recognized by the call receiver carries a heavy burden.

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Support Services

During the course of one shift, a call receiver could become witness to a variety of calls that would tax their ability to cope. Where would the call receiver go to express his or her grief? The call receiver could talk with their spouse to alleviate their emotional state. For the most part, this is a great idea assuming their spouse is open and willing to assist. However, what about the single call receivers or those with spouses that do not wish to be burdened by the graphic details plaguing the call receiver?

Spokane County currently offers a Peer Support program to facilitate a peer to peer interaction. While still in its infancy, the program takes willing call receivers that have received training in mediating while still respecting boundaries. For call receivers desiring to take advantage of the Peer Support program, supervisors would partner him or her with a facilitator with similar experiences in order to allow for a greater understanding between the two.

Being offered by Spokane County 911, although still in its infancy, is a mentoring program. This pairs a qualified call receiver with a new hire. The two form a joint relationship that facilitates a direct communication that will allow the new hire to express his or her concern with the occupation.

For those employees that may feel uncomfortable with opening up to a co-worker about sensitive issues, Spokane County also offers Employee Assistance Programs. The benefits of this program are the employee, and immediate family members, have the option to seek eight free confidential therapeutic sessions from an outside agency.

It needs to be said that all of the agencies have the responsibility to ensure the tools toward gaining resiliency are available to the employee – but it is the responsibility of the employee to take advantage of them. And, when the call receiver in question has expressed a desire to receive assistance, supervisors and administration should fully encourage the call receiver to do so – this ensures the situation is dealt with in a healthy manner.
5. Hiring and Retention for Next Generation 911

Current hiring practices may not adequately meet the requirements for handling Next Generation 911 (NG-911) calls. The challenge is to hire call receivers that will be able to comprehend NG-911 technologies, and to retain the current employees, during the upcoming changes that will be implemented for NG-911.

Seasoned/veteran call receivers may not have knowledge\(^{37}\) of NG-911, and were not hired with the core competencies needed to process NG-911 calls. Social scientist TW Mitchell estimates once NG-911 is implemented, if the agency is not prepared, projected loss of current employees will be approximately 25%\(^{38}\). APCO RETAINS suggests using an assessment of current employees that use these technologies in any prior job experience, or personal life, to identify those who will be better able to accept the upcoming changes, and to excel\(^{39}\) through the transition. To help with the retention of current employees, it is suggested that phasing in the implementation of new equipment, computers and phones, separately, to reduce the learning curve during the transition.

Most pre-hire testing does not include hands on technology that will be used when NG-911 is implemented. Consider having the applicant demonstrate their ability to text and to understand texting lingo along with other hands on applications like Criticall.

In general, interviews are a must, although they only show the individual under an ideal situation, not how they react under pressure. Consider talking to the support staff that had any contact with the applicant, and ask about the interaction with the applicant. Was the applicant courteous? Was the applicant professional on the phone and in person?


Liability

Present employees and new hires will be exposed to various forms of media that could have an emotional impact due to the content of the media. Consider including a description of the forms of media in the job announcement, and make sure there is a clear understanding of the requirements expected for each individual. Consider the job description as a contract, and by accepting a job offer, the individual must accept all requirements without exception.

Recommendations

We recommend these buzz words be used for a job listing.

- Innovative
- Fast-paced
- Progressive
- Cutting edge
- Leader
- Confidence
- Demanding
- Information Technology Systems

We recommend the job description include the various forms of media exposure and a change in policy for current employees.

We recommend that the applicant demonstrate the key attributes needed for the position in a cover letter and resume.

We recommend hands on testing be conducted before the interview process.

We recommend these Core Competencies be considered when hiring new call receiver:
CORE COMPETENCIES

Written and Verbal Communication Skills

Ability to read and comprehend information, essential facts, and communicate in writing
Ability to comprehend diverse communication styles and interpret information/paraphrase
Effective listening skills
Ability to speak clearly and distinctly

Social Aptitude

Effective interpersonal skills, even under pressure
Demonstrate professionalism
Ability to manage job stress over extended period of time, while maintaining a healthy balanced life

Teamwork

Clear understanding of his/her personal strengths
Ability to support and assist other call receivers
Ability to interact with the public and other agencies in an appropriate and efficient manor

Technical/Next Gen

Ability to apply department policy, procedure and guidelines to process incoming calls
Ability to efficiently work with CAD/RMS
Ability to interpret visual info/media/texting, with minimal emotional impact

Dynamic Expertise

Ability to get good at getting good at things
Ability to embrace constructive criticism
Continual learning
Adaptive learning styles
6. Training

In this paper we have divided training for Next Generation 911 into categories. We cover the following areas: early new hire, on-the-phone new hire, current employee implementation, and resilience training for all employees.

Adult Learning in the Communications Center

It is no secret that adults learn differently than children. One of the most extreme differences is that adult motivations are so varied. A child is motivated to learn because he is told he must. An adult learns for many reasons: new job, a promotion, mandatory training, or simply because he is interested in acquiring new knowledge.

The study of adult learning began in the late 1920s and has been evolving ever since. Now several professions use elements from these studies in their training programs.

Early communications center training like police academies were similar to the popular San Jose Model Field Training Officer (FTO) program and resembled military boot camp in presentation of materials and concepts. A more recent style emerged based on material from studies of adult learners and learning. One of these new styles is called The Reno Model Police Training Officer (PTO) program which is a problem based learning program which applies the theory of adult learning to its curriculum. Another, developed by The Washington State Criminal Justice Training Center (CJTC) and representatives from several Washington State Communications Centers is called the Washington Communications Adult Training Model (ATM) and offered by the CJTC as Certified Training Officer II (CTO II). CJTS’s ATM and other train-the-trainer type courses include elements from Howard Gardner’s Multiple Intelligences, Neil Fleming’s VAK Learning Styles and Bloom’s Taxonomy of Learning. The Association of Public Safety Communications Officials (APCO) minimum training standards requires Certified Training Officers (CTO) to:

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“have received basic training in interpersonal communication skills, accreditation and/or certification (if applicable), leadership qualities and adult learning principles”\textsuperscript{45}.

Spokane County 911 has begun using elements from the Adult Training Module and PTO programs within our classroom and our on-the-floor training. And we recommend using the ATM style training for implementing NG-911 in communications centers. The principles of adult learning is instruction that is practical and self-directed, goal and relevancy oriented, it draws on skills and knowledge acquired through a lifetime of experiences. Elements of the FTO program can be found at the San Jose Police Department’s website and those of the PTO program can be found at The Hoover Group of Reno’s website.

The work of Gardner, professor of Cognition and Education at Harvard Graduate School of Education, and Fleming, faculty development at Lincoln University, is commonly thought of as one theory since they parallel one another. Gardner has revisited his work to include additional Intelligences the original are most commonly accepted.

\textsuperscript{45} APCO Minimum Training Standards for Public Safety Communications Training Officer
Learning Styles

Visual – “think in pictures”
Auditory – “listening”
Tactile/Kinesthetic – “moving, touching, doing”

Multiple Intelligences

Each person has a preference towards one or more learning style(s)/intelligence(s) but nearly all will respond in some way to all the style/intelligence. Each of the intelligences has keywords that will help the instructor tailor learning to that style. Tailoring NG-911 instruction to as many of these styles will help tap into each student’s more fully developed learning styles\(^{46}\) and enhance the learning process. A sample list is below.

- Visual-Spatial: visualize, picture, map, diagram
- Verbal-Linguistic: discuss, paraphrase, name
- Bodily-Kinesthetic: feel, sense, demonstrate
- Musical: pattern, compose, associate
- Logical-Mathematical: analyze, calculate, deduce
- Interpersonal: interview, join, collaborate
- Intrapersonal: reflect, assess, empathize

Bloom’s Taxonomy purports three learning domains: cognitive, affective, and psychomotor. All of the domains have been further divided into categories.

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The categories within each of the domains are arranged in “levels of thinking” from lowest to highest. Creating an atmosphere where learning engages the highest levels of thinking (domains and categories) will promote complex thinking, attention to detail, comprehension, and problem solving which will promote faster learning and critical thinkers.\(^{47}\)

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The domains have keywords to help the instructor achieve the specific level of learning.

Remembering: choose, match, label  
Understanding: classify, compare, outline  
Applying: select, construct, identify  
Analyzing: contrast, list, examine  
Evaluating: prove, explain, conclude  
Creating: make up, test, estimate

Awareness and application of these theories in NG-911 training will help to develop the trainee’s ability to learn and can generate a higher level of competence, leadership, and greater success. It may also allow non-performers to self-select out therefore saving the agency time and money on training and perhaps, re-training in the future.

Learning Journals as a Tool

Another facet of Adult Learning is the use of learning journals, also known as reflective journaling. Many professions use journals as a way for students/professionals to enhance learning. Journaling provides a way for the learning to gain perspective, clarity and insight into

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the learning experience. Journaling also allows the learner “to deepen the quality of learning, in
the form of critical thinking or developing a questioning attitude.” The CJTC uses mandatory
journaling in their Basic Law Enforcement Academy (BLEA).

To ensure its effectiveness, the journal needs purpose and assessment. BLEA journals are
reviewed twice by an assigned instructor. Journals are confidential, unless a serious issue is
revealed, and non-punitive. During the assessment the reader should provide coaching
comments and acknowledgement of the student’s effort. Feedback can take the form of a
question “How will you improve?” or praise “Well said.” It may also require the writer to re-
address the entry and go into further detail “What was your reaction to that?”

Some students may feel blocked by the thought of creating a journal entry, especially those who
respond to intelligences/styles other than those relating to words. Possible alternatives to the
traditional entries are:

- Create a checklist or bulleted list.
- Create a song or jingle to describe the topic under discussion.
- Use song titles or lyric excerpts to detail events.
- Create a graph or chart regarding progress.
- Find photos to detail events.
- Journal with your trainer.
- Interview other call receivers regarding the event being discussed.
- Set goals based on what happened regarding the event.
- Describe what you physically did and how that affected the event.

We contend that using elements of adult learning developed by industry professional
organizations as well as researchers will benefit in training new hires in processing NG-911
calls.

In our opinion journaling may have the added benefit in that the trainee’s journal will allow him to
“vent” or express emotions about an NG-911 incident, image or video in a confidential manner
and avoid using a blog or other social media in violation of policy.

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51 Lettic, Steve. Train the Trainer Class. Learning Journals. 2009 CJTC Training Conference. Little Creek Casino Resort, Shelton, WA.
Phase 1 Training (Classroom/Academy)

When training with adult learners, applying new knowledge is key. Adult learners want to know why it is important to learn a task and then apply that task right away. The importance of resilience training will be easy to understand in the abstract but waiting till the end of academy training to actually apply the knowledge will lessen the trainee's ability to process vicarious trauma.

Images, still or video, are emotionally impactful, especially to those who have to sit through several hours of images, written, and verbal reports of crisis situations. Providing exposure to these images and the words that go with them during the classroom training will provide the student with the opportunity to identify which areas may trigger a reaction. The student will need to recognize that he/she has personalized the situation and find a way to mitigate the connection to him/her. This is not de-sensitization, this is awareness. Awareness is the call receiver knowing vicarious trauma (and stress, burnout, and compassion fatigue) occurs when she associates the emergency with himself/herself. Mitigation is the call receiver knowing how to maintain compassion while stepping out of the picture.

The military has been engaged in resilience training for several years. Previous they relied on de-sensitization to prevent Post Traumatic Stress Disorder (PTSD). De-sensitization did not work. They now train combat soldiers in ways to be psychologically resilient.

To ensure that trainees have a basic understanding of what a call receiver does, consider having new employees listen in for a few hours during a regular work shift. Additionally, consider scheduling this time to coincide with high call and media volume.

Agencies which offer classroom training or call receiver academies should consider including all types of media accepted in their curriculum. Creating scenarios for both voice and media call will aid in preparing the employee for actual call taking as well as allow them to implement techniques for handling vicarious trauma through resilience training.

Classroom training on NG-911 is foundational, not simply how to use the equipment. It is a building block for call processing and other aspects of being a 911 Call Receiver. An example of a current training program is shown below, each layer builds upon the previous one.

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Adding NG-911 and resilience training before equipment training enhances the training program.

The amount of time spent directly instructing on these topics is not to scale with the above depiction. The instructor may spend only a short time on reading the specific policies and procedures but those topics apply to all the topics that follow.
Spokane County 911 policy #301-3 POL covers Customer Service. Discussing the actual written policy takes less than two hours in the classroom but the application is used on every single call and every interaction the Call Receiver has in the course of her employment.

While developing a NG-911 classroom program, centers should consider complying with the APCO Project 33 Agency Training Program Certification (Project 33) to meet APCO American National Standards (ANS)\textsuperscript{55}. Spokane County 911 is using Project 33 to re-write their training manual for certification and including Project 33 topics as lesson plans. Project 33 breaks the topic into two sections, an introductory overview and an instruction.

The lesson plans identify the learning styles used during instruction, detail how the topic will be taught, reviewed and the testing method used to verify instruction. Demonstration of Mastery is not limited to weekly tests or quizzes. Students can create a flow-chart, a PowerPoint/Prezi, a song or jingle summarizing the topic being reviewed.

The numbering system used in the Lesson Plan is used consistently throughout the Agency’s resource materials: Policy, Procedures and Guidelines, Training Manual and Call Specific Guide. Example Lesson Plans can be found in Appendix B.

On-the-Floor Training

The objective of most in center training is to evaluate a trainee’s ability to retain information they learned while in the classroom. We usually evaluate this by putting them in situations that are real life, real time, and offer a variety of scenarios. Being able to evaluate whether they can handle the situations that are high risk low frequency\textsuperscript{56} with little help from a trainer is what we look for. NG911 communications are likely at first to fall into the high risk low frequency category and giving a trainee the tools to deal with that will be an important part of NG911 training. Keep in mind that knowing and doing is not the same thing. You can test a trainee, go over policies, and give verbal directions, but until they take a NG-911 call in a live setting you will be unable to truly evaluate their skill level.

Some questions that need to be kept in mind by the trainer during the course of a NG-911 call are can they recognize that the incoming transmission is a NG-911 communication? Are they able to properly open the appropriate module in a reasonable amount of time? Do they use the same text language as the caller? Can the caller understand the trainee’s texts? Can they understand and determine what the caller is trying to say? Can they multitask and use the text window, CAD, and any other necessary programs? Please see the next page for a sample checklist that could be used during on floor training.

Also consider using practice NG911 calls to train and evaluate the trainee. This could be as simple as the trainer texting in and having the trainee put in a test CAD incident. Trainers will need to have the highest level of proficiency to ensure that the trainees are getting the best instruction on all levels of NG911 technology.

You will also likely need to upgrade your agencies paperwork that is used for daily evaluation and on floor training (daily training reports, tests, study guides, etc.). The paperwork your agency uses will need to reflect the new forms of media the trainee will be using. With new forms of media you should be aware that the on floor training time will likely increase. This will partially be due to the amount of time it takes to have a text conversation, process a video or picture message; and partially the amount of time it takes to properly teach a new technology in real time.

We recommend that your agency set up a skill set within the phone system to ensure the trainees have a high level of exposure to incoming NG911 communications.

\textsuperscript{56} Graham, G. Why Things Go Right – Why Things Go Wrong
<table>
<thead>
<tr>
<th>Recognition of incoming media</th>
<th>Complete (Y/N)</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition that it’s a text message</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Properly opens the media module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Properly opens the text module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same text language as caller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caller understood the response</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trainee able to understand callers text</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trainee able to multitask</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 15 – Checklist**
Current Employee Training Implementation

Training current employees on NG911 changes will most likely be agency specific, but here are a few things to consider when preparing employees for the upcoming changes:

- Update employees frequently through emails, or staff meetings, on the changes that are coming.
- Introduce the various forms of media (texting, instant messaging, photos, videos) that employees can expect to be trained on.
- Show examples of photos that might be sent in, videos of car accidents, or specific texts that will likely be used.
- Present a timeline that indicates the implementation schedule.

According to NENA’s predictions⁵⁷, we expect that these various types of media will come in phases, rather than all at once, so we recommend implementing each training program accordingly⁵⁸. Phasing in the training of new equipment and phones will help ease the transition for employees, and also be less overwhelming, than trying to train all the changes at once. Keep in mind that veteran staff could be more challenged to learn new technology, which could cause an increase in training time. It is uncertain how to determine the exact amount of hours needed for training, however an article talking about the needed training time for call receivers in Rochester-Monroe County (NY), reported that while testing a NG911 texting program during the summer of 2010, most of the employees learned the software in a short period of time, an average of an hour and a half to two hours.⁵⁹

The technical aspect of training current staff will depend on the equipment each agency currently has or is going to purchase. One thing to keep in mind is there are hidden costs associated with the purchasing of new equipment, such as maintenance, upgrades and the training of employees on the new equipment.

We recommend providing a list of texting lingo to current employees. Each list will contain slang, abbreviations and compound words that are commonly used while texting. There are several sites on the internet that have complied lists of texting abbreviations and their meanings.⁶⁰

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⁵⁷ NENA APCO Human Machine Interface & PSAP Display Requirements (ORD)
7. Finance

Necessity versus Desire

In households throughout the nation, families are accustomed to spending here, saving there. As the months come and go, as children grow and the economy is slow to recover many families are forced to decide between car repairs or braces for little Johnny; between dance lessons for Abigail or a new water heater. The choices, while seemingly easy for outsiders to make, fill parents with anxiety and remorse for choosing necessity over desire.

The same can be said for Washington State regarding the modernization of its thirty-nine Public-Safety Answering Points (PSAPs). For those in the industry, we all desire to have the highest form of technology, the plushest chairs, and the most advanced call centers but at what cost to society do we want these luxury items? In December of 2010, Washington Governor Christine Gregoire proposed a 2011-2013 budget that forced cuts in key societal areas, such as eliminating the Basic Health Plan, which offered subsidized health insurance to 66,000 low income individuals and the K-4 class-size reduction funds in order to address the $5.1 billion deficit\(^6^1\).

Is it bad form to upgrade chairs and consoles when the State Parks are losing their general fund or when the school children stop receiving the benefits of extended learning times due to smaller class sizes, afforded by the now suspended Initiative 728\(^6^2\) – another casualty of the budget cuts? Some counties have a surplus of savings due to the 911 excise tax, which is based on their large population. Is it fair to ask them to bypass their state contract funds in order for society to benefit across the board? These tough decisions are not just limited to chairs and consoles, either. With the onslaught of texts that are anticipated to come into the PSAP’s (and at a later date, video messages) with the advent of the new technologies, the centers are going to be in need of equipment that will be able to handle the multiple forms of media and be able to transmit said media to the Mobile Data Terminal (MDT) without slowing the network down due to excessive bandwidth use. There are examples of recent upgrades to the wireless public safety network\(^6^3\) with Adams County, Colorado implementing a Long Term Evolution (LTE) system which operates on a Public Safety Network in the 700 MHz Broadband range\(^6^4\), which will cost the county $8.7 million. This allows for law enforcement officers in multiple jurisdictions to receive the same information during Mass Casualty Events or when deemed necessary.

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This leads to the question of where all this information will be stored. With the text messages and possible cross-jurisdictional calls having to be consolidated to one machine, PSAP’s will also have to look into upgrading data logging recorders which can carry a price tag that can exceed a million dollars.

In the following pages we will dive into our findings and provide some recommendations with regard to the financial impact of Next Generation 911. The figures in the associated tables are current as of the writing of this report; bills and laws are being written and re-written by lawmakers every day that may affect the counties localized budgets.

**Funding**

For the Fiscal Year of 2011, Washington State will provide $9.1 million (B-1) to thirty-nine counties and the Washington State Patrol to offset PSAP operational costs. In addition to these contract funds, the individual counties rely on local revenue gathered through wireline/wireless phone tax, which according to RCW 82.14B.030 (1)(3a), the individual counties can impose a seventy cent a month tax on switched access lines, wireless and equivalents, and voice over internet protocol (VOIP). At the same time the state charges up to twenty-five cents per month for the same lines (RCW 82.14B.030 (5)(7)) – together the taxes bring in an additional $33.4 million (B-1) for the counties to pay the remaining day to day expenses.

Federal representatives have attempted to further increase funding to offset the cost of migrating to Next Generation 911 (NG911). In 2010, the Federal House of Representatives put forth a bill, H.R. 4829: Next Generation 911 Preservation Act of 2010(B-2), in an attempt to ensure the nation’s 911 PSAP’s are smoothly transitioned into the next generation technology. The bill failed.

**Expenses**

According to the National Emergency Number Association (NENA) NG-911 Transition Plan, “PSAPs, 9-1-1 Authorities, states/provinces, service providers, etc. will be required to purchase/provide new equipment capable of NG9-1-1 capabilities”. NENA will have a suggested standard of care that all counties should attempt to reach; however, there is no list of the standards being offered at this time.

The hurdle many counties find themselves needing to traverse is the initial upgrade of equipment. Due to the vague standards and the uncertainty of which programs and systems are going to be needed, we will use Spokane County 911’s upcoming phone refresh, slated to occur in 2012, as a starting point. The estimated cost for the refresh will be $1.4 million. Using the

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annual budget for Spokane County during the fiscal year of 2012, $2,991,471, and comparing it to the estimated cost of the refresh, we found that Spokane County would be spending the equivalent to 47% of their annual budget on this one upgrade. It would be safe to assume that the cost for new equipment would be as much, if not more, as what Spokane County 911 will spend on the new telephone system. Keep in mind, the figure for upgrading is above and beyond the static budget for that fiscal year, which means if Spokane County 911 decided to upgrade for NG911 in 2012, they will not only have to foot the bill for the budget, but also for the upgrades. This will force Spokane County 911 to have to allocate an approximate total of $4.5 million during its fiscal year.

In contrast to Spokane County, there are other counties that heavily rely on state funds to maintain operations due to low population. For these counties, their heavy reliance on state funds limits their ability to fully fund a system upgrade without state assistance. In the current idea we have, it is impossible for the lesser populated counties to be able to afford the upgrades to NG911 while keeping afloat. It is conceivable, with the state of the economy and Washington State facing a project budget deficit from 2011 to 2013, the heart of when most counties may be looking to upgrade to NG911, of $5.1 billion\(^6\), the funds from the NG 911 project can be taken to fund other state programs. If the raiding of 911 funding continues, counties that have not properly prepared for the upgrade will be left in the cold. What happens when counties do not, or cannot, upgrade? Would the state retract contract money? Continuing with slated expense associated with NG911, another added expense for counties will also be an increased staffing level due to the higher call volume. Yet, it’s not just limited to the salaries of the new hires. We must also look at the cost of the tests the new hires engage in, the salaries of the interview panel – Spokane County 911 utilizes one Supervisor and two call receivers – the salaries of the Training Supervisor and training assistant during the five to six weeks of classroom training, and lastly the salary of the Certified Training Officer during the ten to twelve weeks of the new hire learning hands on. Of course this model assumes everyone offered the call receiver position makes it through training and probation.

Another consideration is the cost of training everyone who is going to be affected by the upgrade. While one of the largest groups will be the call receivers, attention needs to be placed on the training costs in bringing law enforcement officers up to date with the new technology. Another possible added expense, on top of all those previously mentioned, is the need for more workspace within your current facility. If we are to assume each county would need an additional ten-fifteen new hires to handle the potential increase in workload, that means three-five more employees per shift and three-five vehicles in the already crowded parking lot per shift. If the facility building continues to feel cramped, certain counties may be looking at upgrading their building, or at least moving into a building that would provide adequate space.

Liability

The biggest liability facing counties in not upgrading to NG911 would be lawsuits from various organizations. NENA and American with Disabilities Act (ADA) have set suggested standards that allow for a standard of care which would be elevated for NG911. It is believed, should an incident occur that results in death due to a county not offering a level of service consistent with what the standards are, that county would be open to lawsuits.

Consideration

While the burden of care lies with first responders, it is suggested that PSAP’s become aware of the new technologies when they become available. Perhaps upgrading in phases will allow for a smoother transition to attaining the standards that will be suggested by NENA and ADA.

Recommendations

It is the recommendation of this panel that counties begin saving now for the inevitable. While it may be difficult to squeeze tears from a quarter, perhaps counties need to check into the possibility of leasing new equipment versus buying. This would allow the county to put off the initial outgoing of money.

As NENA mentioned in their Transition Plan\textsuperscript{67}, it may be a good idea for counties to implement their own transitions in phases by starting with the biggest need and moving on from there. Of course, one has to keep in mind the difference between ‘needing to have an upgrade’ and ‘it would be nice to have an upgrade’ when making these decisions.

However, the most beneficial recommendation we could make would be for counties to team up with one another and assist each other in utilizing the best possible equipment for the least amount of money. For instance, County A has just upgraded their computers. Rather than wholesaling them to the public, offer them to County B for a much reduced cost, thus allowing County B to utilize their computer money in upgrading their telephone system.

In the end, as all counties move forward in this endeavor, we must all remember that this process, while stressful and frightening, will allow the public to be served with greater effect.

8. Storage and Records Retention

Most current storage systems will not likely support various types of media such as text, picture, and video. There will be many different types of media introduced to the public for 911 over an extended period of time and there needs to be a system in place that can handle those changes. NENA REQ.0300.0100 states that it is desirable for the transition to full NG9-1-1 (i3) capabilities be implemented in phases. Most systems are currently only using analog equipment that will not be usable when the change to Next Generation 911 (NG-911) is made and where digital equipment will be required. Storing pictures, text messages and even video is not usually a function of even the current digital recorders. Even agencies with digital recorders will likely have to upgrade to get a separate recorder for media items.

Most current systems can only handle recording and storing voice calls. The period of time the information is stored will not likely be enough for the surge of data that will likely be seen. The current Revised Code of Washington (RCW) 40.41 (see figure 16) is the retention schedule that must be followed for destruction of public records. The wording is very broad, but after discussing this with the Washington State archivist the current RCW will cover new media forms for NG-911. Other states have different retention schedules. Massachusetts (figure 17) for example, retains emergency communication recordings for one year. Kansas (figure 18) retains their recordings for six months. Georgia (figure 19) retains recordings for three years. Each agency should check with their own archivists to determine if any changes will be required.

Maintaining Chain of Evidence

The issue of being able to store, share, exchange, and hold as evidence information that may be pertinent to a major case quickly with partner agencies is a major drawback to the current system. There is no interoperability currently in place that could assist in streamlining our recordings, nor methodology of storing it. In major cases a situation could be encountered where the investigating agency takes the original media for evidence which results in a record existing and requests for reproduction that must be met. Complying with this requires interoperability for media sharing since major case detectives would not have to return and maintain chain of evidence when a request for reproduction is received.

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There is also a liability issue for the investigating agency since the incorrect use of equipment for playback could result in the original recording being destroyed. If the investigating agency attempts to play an analog tape in digital equipment or vice versa, it could be destroyed. If the investigating agency keeps the original recording for an extended period of time it could also result in 911 being responsible for reproducing a recording for years beyond the retention schedule period.

Training and maintenance on old equipment for reproduction of the recording could be costly and not time effective since the new digital systems would not be able to perform this function on old analog data.

Per the Washington Administrative Code (WAC) 434-662-040 electronic records must remain useable, searchable, retrievable and authentic for the retention period, so keeping the equipment would be necessary. If the agency determines that they wish to preserve the records in digital format they can convert them. Ensuring that all records were successfully converted and then documenting how the conversion took place would be necessary to constitute a complete and authentic copy of the original. Once the records have been converted the original records would only need to be retained until conversion is verified per retention schedule section 5.5 Disposition Authority Number (DAN) GS2010-018 Rev. 0\textsuperscript{66}. If the conversion was not captured in metadata then the documents of the conversion would be retained under either DAN GS2010-015 Rev. 0 or DAN GS2010-016 Rev. 0\textsuperscript{72}.

This could have a great impact on records and other departments who would have to maintain the equipment and training to meet the requirements for retention as well. Storage capacity will have to significantly increase and change for the new media expected as well. This will likely be in phases; however recording and storing equipment will need to be able to handle all media types. This may come in the form of needing multiple systems to record and hold the media, i.e. your text message equipment may be different than your video equipment.

This should be kept in mind when researching new equipment since at first agencies will likely only be getting data from text messages. However, over time the equipment will need to have the capacity for text, video, picture, and possibly even more media types. This could change or affect what type of recording and storage equipment an agency would need to meet the emerging needs. NENA REQ.1800.0100 states that PSAPs that want to take advantage of NG9-1-1 logging capabilities must upgrade their logging equipment to be NG9-1-1 compliant including customer-premises equipment, logging recorders, and other relevant equipment\textsuperscript{73}.


Recommendations

A new or updated system needs to be in place prior to the arrival of the first NG-911 communication into a Public Safety Answering Point (PSAP). These are some recommendations about what may make this transition easier and more efficient.

As any investments are made for storage/records systems they are universal rather than proprietary and interoperate with other systems being used.

The system has the capability to allow partner agencies their own secure access.

Use offsite storage for increased security and accessibility following a disaster. Consider the remarks made in section 5.3 of the Retention Schedule (figure 6).

The records system should archive both current and future types of media for greater than 90 days (for Washington per records retention RCW 40.41).

Ask a storage vendor how media would attach and store together with their system. Ideally the system should be able to consolidate various things such as Computer Aided Dispatch (CAD), Records Management System (RMS), media, voice recordings, written records, possibly even evidence and case files into one folder for a major incident.
## 5. Communications

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SERIES TITLE AND DESCRIPTION</th>
<th>OPR or OFM</th>
<th>PRIMARY (SOURCE DOCUMENT/ORIGINAL) RECORD COPY</th>
<th>SECONDARY (ALL OTHER) RECORD COPIES</th>
<th>DISPOSITION AUTHORITY NUMBER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>911 CONVERSATIONS MASTER RECORDINGS</td>
<td>OFM</td>
<td>90 days</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-01</td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>911 ELECTRONIC PRINTOUTS</td>
<td>OPR</td>
<td>6 years</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-02</td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>COMPUTER AUTOMATED DISPATCH BACKUP TAPES</td>
<td>OFM</td>
<td>3 years</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-03</td>
<td>In order to protect the physical security and accessibility of tape-recorded information for the duration of its retention period requirement, backup tapes must be stored off-site in a temperature and humidity-controlled environment.</td>
</tr>
<tr>
<td>5.4</td>
<td>MASTER ADDRESS STREET LOGS - COMMUNICATIONS</td>
<td>OFM</td>
<td>1 year</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-05</td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>NATIONAL CRIMINAL INFORMATION CENTER LOGS COMMUNICATIONS</td>
<td>OFM</td>
<td>1 year</td>
<td>Destroy when obsolete or superseded</td>
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<tr>
<td>5.6</td>
<td>RADIO LOGS COMMUNICATIONS</td>
<td>OFM</td>
<td>60 days</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-07</td>
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</tr>
<tr>
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<td>SECONDARY (ALL OTHER) RECORD COPIES</td>
<td>DISPOSITION AUTHORITY NUMBER</td>
<td>REMARKS</td>
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<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------</td>
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<tr>
<td>5.7</td>
<td>SUPERVISOR SHIFT REPORTS COMMUNICATIONS</td>
<td>OFM</td>
<td>2 year</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-08</td>
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<tr>
<td>5.8</td>
<td>TAPE REQUESTS COMMUNICATIONS</td>
<td>OFM</td>
<td>6 years</td>
<td>Destroy when obsolete or superseded</td>
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<tr>
<td>5.9</td>
<td>TELETYPES (INCOMING AND OUTGOING) COMMUNICATIONS</td>
<td>OFM</td>
<td>1 year</td>
<td>Destroy when obsolete or superseded</td>
<td>GS50-29-10</td>
<td></td>
</tr>
</tbody>
</table>

Series revised. Reduced primary copy retention from 3 years - 05/03.
Massachusetts Records Retention Schedule

4 Dispatch and Communications Recordings

Documents all radio, telephone, or electronic communications received or generated during a shift relating to incidents, complaints, patrols, or response. Includes digital, audio, or video recordings of dispatch calls, ambulance calls, E-911 calls, field response, and communications between units and/or command centers.

Retention Period:
Retain 1 year.
6A MGL 18A-F.

Figure 17 – Massachusetts Retention Schedule

Kansas Retention Schedule

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<tr>
<th>SERIES ID</th>
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</tr>
</thead>
<tbody>
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<td>TITLE</td>
<td>Emergency Communication Audio Tapes</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Recordings of incoming and outgoing calls on county phone lines and emergency radio systems.</td>
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<td>RETENTION</td>
<td>006 months</td>
</tr>
<tr>
<td>COMMENTS</td>
<td>Reuse.</td>
</tr>
<tr>
<td>DISPOSITION</td>
<td>Destroy</td>
</tr>
<tr>
<td>RESTRICTIONS</td>
<td>None</td>
</tr>
<tr>
<td>APPROVED</td>
<td>1999-07-08</td>
</tr>
<tr>
<td>K.A.R. NUMBER</td>
<td>53-2-120</td>
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</table>

Figure 18 – Kansas Retention Schedule

Georgia Retention Schedule

<table>
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<tr>
<th>Record Title</th>
<th>Description</th>
<th>Retention</th>
<th>Legal Citation</th>
<th>Retention Classification</th>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>911 Emergency Call Recordings</td>
<td>Digital or analog recordings of emergency calls handled by the 911 center</td>
<td>3 years</td>
<td></td>
<td>Temporary - Short Term</td>
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</tr>
</tbody>
</table>

Figure 19 – Georgia Retention Schedule
9. Public Disclosure

There are still several questions about what will and should be made public when it comes to new and emerging forms of media used in Next Generation 911 (NG-911).

There is currently no precedence to cover what can and will be released to the public for emerging media forms in Washington state. The Public Records Act found under The Revised Code of Washington (RCW) 42.5674 covers the public’s right to view and/or copy public records has broad terms that do cover new forms of media.

Other states have different verbiage about what a public record is, but they are all very similar and seem to cover new media forms. Georgia’s Open Records Act states public records are “all documents, papers, letters, maps, books, tapes, photographs, computer based or generated information, or similar material prepared and maintained or received in the course of the operation of a public office or agency.”75 Kansas defines public records as “any recorded information, regardless of form or characteristics, which is made, maintained or kept by or is in the possession of any public agency.”76 Massachusetts defines it as “all books, papers, maps, photographs, recorded tapes, financial statements, statistical tabulations, or other

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documentary materials or data, regardless of physical form or characteristics, made or received by any officer or employee of any Massachusetts governmental entity.

Agencies must keep in mind that if a form of media is not covered it would fall under the retention schedule to keep for six years. Conclusions by the state archivist are broad and appear to cover the retention and disclosure of media, however be aware that this is the current interpretation which could change.

This has not been tested in the release of such things as pictures and videos. RCW 42.56.240 (1 & 2) covers the lawful exemptions used to preclude release of media.

### RCW 42.56.240

**Investigative, law enforcement, and crime victims.**

“The following investigative, law enforcement, and crime victim information is exempt from public inspection and copying under this chapter:

1. Specific intelligence information and specific investigative records compiled by investigative, law enforcement, and penology agencies, and state agencies vested with the responsibility to discipline members of any profession, the nondisclosure of which is essential to effective law enforcement or for the protection of any person's right to privacy;

2. Information revealing the identity of persons who are witnesses to or victims of crime or who file complaints with investigative, law enforcement, or penology agencies, other than the commission, if disclosure would endanger any person's life, physical safety, or property. If at the time a complaint is filed the complainant, victim, or witness indicates a desire for disclosure or nondisclosure, such desire shall govern. However, all complaints filed with the commission about any elected official or candidate for public office must be made in writing and signed by the complainant under oath;”

*Figure 21 – Exemptions*

The law enforcement investigative exemptions will likely exclude some of the new media coming in since anything related to an open or ongoing investigation can’t be released. Nondisclosure must be shown to be essential to effect law enforcement or that it could endanger any person’s life, physical safety, or property.

Metadata will also fall under public disclosure so requests for that information will have to be met as long as exemptions don’t apply. Metadata is “data about data” or information about the condition, origin, quality, or content of data.

There is also some liability that needs to be addressed when it comes to disclosing information that comes into 911. This could include things like a passerby being caught on video or picture and they do not know their image has been recorded and can then be given to the media.

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79 Newman v. King County, 133 Wn.2d 565, 574 (1997)


81 Neighborhood Alliance of Spokane County v. County of Spokane, 153 Wn. App. 241 (12/15/2009)

82 Cowles Publishing Co. v. Spokane, 139 Wn.2d 472 (1999)
possible concerns need to be kept in mind as the new media forms emerge and are implemented for NG-911.

It will be up to the legislature to determine what media can be made public and what cannot. At that point it will be up to each Public Safety Answering Point (PSAP) to follow the rules and laws set up for their agency regarding the release of information and media.
10. Public Education

The message needs to get to the public about when and what media they can send to 911, but timing is everything. Start talking too soon and the public gets frustrated and blames the agency when it doesn’t work. Too late and they don’t use the system and they blame the agency for failing to provide access.

A national system for 911 media messaging doesn’t exist, yet. The technology itself is in the development phase. Very little information exists about NG911 outside our industry. Most agencies currently have catchy slogans like “use your voice not your thumbs for 911” or Washington State’s “What’s Your Location” campaign. This focus on what is currently available could conflict with the need to get the NG911 information to agency partners and communities. As progression from texting aka Short Message Service (SMS) acceptance to Multimedia Message Service (MMS) and other forms is inevitable plans are needed to educate the public regarding each new type of media as it becomes available.

The dilemma of getting the information about media messaging (SMS, MMS) out isn’t the only education challenge. We address two questions in this chapter: Who needs to know and what do they need to know?

Patrol and investigative personnel need to know what media is available and how to get it. The public needs to know when they can start messaging and what they can message. We have some recommendation about who, what, when, how, and even a little why.

Texting: Breaking Open the Generational Boundaries

![Generations* Living in America](image)

*Date ranges for the birth years of people in the GI, Silent, and Baby Boomer Generations as well as the beginning of Gen X are set and do not change, however, date ranges for the end of Gen X, the beginning and end of the Millenial and Homeland Generations vary depending on the source used.

Figure 22 – Generations

The greatest number of text messages comes from the 13-17 year-old age group. This has been true for the last four years. The number of texts they send continues to increase.

---

Between 2006 and 2008 these users sent a monthly average of 1,742 text messages. And between 2009 and 2010 that same age group sent a whopping 3,339 text messages; an increase of 1,597 monthly messages or 92%.

The second most prolific texting age group is those between 18 and 24 years-old, with a piddling 1,700 texts a month between 2009 and 2010. That number is up from 790 monthly messages in 2006-2008 which is a 115% increase.

13-24 year-olds account for 5,039 out of 6,239 total monthly messages which pinpoint the focus audience for messaging education.

The sheer number of 13-24 year-olds texting is acting as a catalyst and bringing older groups to text messaging. Users between 45 and 65 years-old had an 82% increase in monthly messages from 2006 to 2010.

Many parents and grandparents find that texting is the fastest way to communicate with children and grandchildren. In March of 2009 mobile marketing companies like HipCricket reported that the average age for people who text message is now 38 years-old. A survey in the spring of 2010 found that 72% of all adults who own cell phones send and receive text messages.

Regardless of the number of users outside the 13-24 year-old age group we believe that Gen Y will be the greatest consumer of NG911 services. 67.53% of Gen Y users claim that texting is

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their favorite way to communicate. We feel that it is likely that the older groups will, out of habit, call 911 rather than text.

Public Education Liability

The risks involved with NG911 public education include whether or not the message clearly defines when the texting service is available. Currently, the only reliable way to reach 9-1-1 is by voice however, the message about upcoming accessibility needs be heard as well.

Additionally, citizens need to be informed about how 9-1-1 will interact with them to avoid phishing by SMS texting called SMiShing by scammers claiming to be Law Enforcement looking for personal and financial information.

Education about SMiShing scammers using spoofed addresses to appear as a Public Safety Answering Point (PSAP) to get critical information is essential. Focus on the fact that 9-1-1 will never ask to install software to user’s cell phones or for a credit card number from them.

Public Education as a Marketing Campaign

A lot of has been invested in developing, testing, and proving effective marketing techniques. We need to apply three of these techniques to public education about NG911:

- Two-Factor Theory of Repetition
- Rule of Seven
- Maslow’s Hierarchy of Needs

Repeated exposure to the message will provide both familiarity and credibility to the message and agency. Repeating the message to the public can give a 50% increase in credibility. Marketing experts use the Rule of Seven, the message needs to be seen or heard at least seven times before they buy. There are other factors to consider as well but the main point is that they need to be exposed several times before they get onboard.

Targeting both an emotional connection (two-factor) and the basic needs defined by Maslow will act like a one-two punch to consumers. It becomes a physical need to act.

Below is an example of Maslow in a marketing campaign from Fun Marketer:

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Maslow in a Marketing Campaign

Campaign – Encouraging parents to open a savings account for their children.
Target Audience – Current bank customers who are parents of younger children.
Media Used – In-branch posters, teller-helpers, statement stuffers, small landing page on website.

Three needs we will engage:

Safety – I am concerned about child’s financial future.
Love – I love the kids, so I want to do right and make sure they have a good future. Ties in with ‘duty’.
Esteem – Maslow discusses two “subsidiary sets” of self-esteem need. “These are, first, the need for strength, for achievement, for adequacy, for confidence in the face of the world, and for independence and freedom. Secondly, we have what we may call the desire for reputation or prestige (defining it as respect or esteem from other people), recognition, attention, importance or appreciation.” It is the first type of esteem – the inner directed – that we will address in our campaign.

Figure 25 – Maslow in Marketing

This example has elements of all three principles mentioned. Targeting the audience multiple times and engineering a visceral emotional response which engages a physiological response. Public Education about NG911 should follow a similar pattern. A variety of media, lots of exposure, highlight the safety factor and other emotional/physical responses to increase creditability and recognition.

We distilled Public Education about NG911 into two main questions:

- Who needs to know mission critical information?
- Who needs to know what can be sent?

<table>
<thead>
<tr>
<th>Mission Critical:</th>
<th>What Can Be Sent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call receivers</td>
<td>Volunteers</td>
</tr>
<tr>
<td>Dispatchers</td>
<td>Citizens</td>
</tr>
<tr>
<td>Supervisors</td>
<td>News Media</td>
</tr>
<tr>
<td>Patrol</td>
<td>Officials</td>
</tr>
<tr>
<td>Detectives</td>
<td></td>
</tr>
<tr>
<td>Command Staff</td>
<td></td>
</tr>
</tbody>
</table>
• We recommend PSAPs begin working with agency and municipal Public Information Officers (PIOs) a year in advance and plan an educational campaign.

• We recommend that six months before implementation of NG911 services agencies educate elected officials, department heads, news media and, command staff about the process. Having these people buy-in early will ensure that the correct message is relayed. Especially with the news media, if the reporter or anchor has a detailed understanding it will be reflected onscreen/in print.

• We recommend agencies target schools and universities in the public education campaign.

• We recommend creation of a panel of actual call receivers to go to meetings and provide presentations. Agencies may want to consider how they want the information to be presented. The panel could project a coaching/mentoring feel or be all Joe Friday, all-you-get-are-the-facts. Both approaches have value.

Public Information Officers (PIOs) are great resources for Public Education. Not only do they have the contacts for getting information to the public and for many it is their passion. Working with them to create a campaign will ensure maximum exposure and exploit every possible opportunity.

Having a plan is another way to set goals. It will keep the project on task and on time. The PIO will help you set reasonable and achievable deadlines.

Helping the news media fully understand the system will aid in minimizing misinformation. The news stories will also be presented with more feeling and intensity.

Educating department heads and elected officials should have a trickle-down effect. If they understand the impact of NG911 and how it may affect their departments (questions, resources, etc.) they will get the information to their employees.

Creating a panel will provide the audience exposure to people who actually do the work. They know the ins and outs of the system and will appear as experts to the public.

In addition to having your panel do a mock-up NG911 demonstration they could also create a Public Service Announcement type video that can be shared with the community. Casting choices and tone for the videos should be guided by the target audience. Include clips from PSA video in presentations.

As each form of messaging becomes available to PSAPs the need for Public Education will arise. A campaign for each using the three tested marketing philosophies targeted at the main media users, 13-24 year-old age group, will capitalize upon the catalyzing effect and bring other age groups to the message about NG911.

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11. Conclusion

With the prevalence cell and smart phones usage it is inevitable that people will want to contact 911 using all the methods the phones provide. Those who currently use text messaging as their preferred method of communication will automatically use text messaging to contact emergency services. The challenge for call centers is to prepare for the inevitable and smoothly transition to using the various forms of communications available by cell phone.
Appendix A

APCO Project RETAINS Summary Report

Prepared by Jayme Murbach

For Spokane County 911 Emergency Communications
1620 N Rebecca St
Spokane, WA 99217-7200

April 1, 2011

Agency Overview

Demographics

- Service Population: 475
- Square Mls: 0
- Service Area: Other
- Sworn Employees: 0
- Civilian Employees: 58
- Number of VOIP Calls: 0
- Number of TDD Calls: 0
- Number of Domestic Violence Calls: 0
- Average Time for Domestic Violence Calls
- Average Time for EMD Calls
Communication Services Provided

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<th>Emergency Calls</th>
<th>Call Taking</th>
<th>Dispatch</th>
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<table>
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Workload Summary

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<th></th>
<th>Call Taking</th>
<th>Dispatch</th>
</tr>
</thead>
<tbody>
<tr>
<td>This provides an annual summary of total call volume including a categorized breakdown of types of calls and their percentage of the total volume.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Call Volume</td>
<td>535,506</td>
<td>100%</td>
</tr>
<tr>
<td>Incoming Call Volume</td>
<td>450,080</td>
<td>84.1%</td>
</tr>
<tr>
<td>9-1-1/Emergency Call Volume</td>
<td>262,500</td>
<td>49%</td>
</tr>
<tr>
<td>Dispatched 9-1-1/Emergency Calls</td>
<td>183,959</td>
<td>34.2%</td>
</tr>
<tr>
<td>Wireless Call Volume</td>
<td>273,690</td>
<td>60.7%</td>
</tr>
</tbody>
</table>

Function Positions

Function Positions are roles that are independent of coverage or call volume.

<table>
<thead>
<tr>
<th>Position</th>
<th>Current Authorized</th>
<th>Estimated FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Coordinator</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Manager</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>IT Technician</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Recording Assistant</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Accountant</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Admin Manager</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Director</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>7.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Current Authorized</th>
<th>Estimated FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Staffing Total</td>
<td>64</td>
<td>79.2</td>
</tr>
</tbody>
</table>
Staffing Summary

Coverage Positions

Coverage Positions handle a particular task or "cover" a work station for a specified length of time.

<table>
<thead>
<tr>
<th>Position</th>
<th>Current Authorized</th>
<th>Estimated FTE</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Receivers</td>
<td>50.0</td>
<td>55.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Supervisor</td>
<td>7.0</td>
<td>13.81</td>
<td>6.86</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>57</strong></td>
<td><strong>69.15</strong></td>
<td></td>
</tr>
</tbody>
</table>

Volume Positions

Volume-Influenced Positions are based on number and duration of call processing activity.

<table>
<thead>
<tr>
<th>Position</th>
<th>Current Authorized</th>
<th>Estimated FTE</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>NG911</td>
<td>0.0</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>0.0</strong></td>
<td><strong>3.1</strong></td>
<td></td>
</tr>
</tbody>
</table>

Positions Calculations

Coverage Positions

Full-time employees (FTE) = Hours needing coverage ÷ Employee Availability × Turnover Adjustment

<table>
<thead>
<tr>
<th>Position</th>
<th>Hours Needing Coverage</th>
<th>Employee Availability</th>
<th>Staff Needed</th>
<th>Turnover Rate (%)</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Receivers</td>
<td>69,888</td>
<td>1327</td>
<td>52.67</td>
<td>5%</td>
<td>55.3</td>
</tr>
<tr>
<td>Supervisor</td>
<td>175,190.04</td>
<td>1327</td>
<td>13.2</td>
<td>5%</td>
<td>13.86</td>
</tr>
</tbody>
</table>

Volume-Influenced Positions

Full-time employees (FTE) = Workload ÷ Employee Availability × Turnover Adjustment

<table>
<thead>
<tr>
<th>Position</th>
<th>Workload</th>
<th>Employee Availability</th>
<th>Turnover Adjustment (%)</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NG911</td>
<td>2925</td>
<td>1327</td>
<td>12%</td>
<td>3.1</td>
</tr>
</tbody>
</table>
Staffing Availability

Coverage Positions (independent of volume)

Coverage Positions are based on a particular task or work station that must be staffed or "covered."

<table>
<thead>
<tr>
<th>Position</th>
<th>Total Contract Hours</th>
<th>Holiday/ Vacation Leave Hours</th>
<th>Sick Leave Hours</th>
<th>Personal Leave Hours</th>
<th>Training Leave Hours</th>
<th>Military/ FMLA, etc Hours</th>
<th>Total Meal/ Break Hours</th>
<th>Total Other Hours</th>
<th>Total Hours Unavailable</th>
<th>Total Hours</th>
<th>NAWH Per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Receivers</td>
<td>2950</td>
<td>90</td>
<td>90</td>
<td>8</td>
<td>103</td>
<td>75</td>
<td>260</td>
<td>0</td>
<td>623</td>
<td></td>
<td>1327</td>
</tr>
<tr>
<td>Supervisor</td>
<td>2950</td>
<td>90</td>
<td>90</td>
<td>8</td>
<td>103</td>
<td>75</td>
<td>260</td>
<td>0</td>
<td>623</td>
<td></td>
<td>1327</td>
</tr>
</tbody>
</table>

Volume-Influenced Positions

Volume-Influenced Positions are staffed based on the number of calls/call processing activity.

<table>
<thead>
<tr>
<th>Position</th>
<th>Total Contract Hours</th>
<th>Holiday/ Vacation Leave Hours</th>
<th>Sick Leave Hours</th>
<th>Personal Leave Hours</th>
<th>Training Leave Hours</th>
<th>Military/ FMLA, etc Hours</th>
<th>Total Meal/ Break Hours</th>
<th>Total Other Hours</th>
<th>Total Hours Unavailable</th>
<th>Total Hours</th>
<th>NAWH Per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>NG911</td>
<td>2950</td>
<td>90</td>
<td>90</td>
<td>8</td>
<td>103</td>
<td>75</td>
<td>260</td>
<td>0</td>
<td>623</td>
<td></td>
<td>1327</td>
</tr>
</tbody>
</table>
Appendix B

Spokane County 911 New Hire Training

LESSON PLAN – CHAPTER 200, MODULE 1
Recommended Minimum Training Hours: 2.0

MODULE TITLE: NG-911 Overview

PURPOSE: Familiarize trainees with the NG-911 system used by the Agency.

OBJECTIVES:

<table>
<thead>
<tr>
<th>Number</th>
<th>Upon completion of this module, the student will</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>be acquainted with the evolution of NG-911</td>
<td>PP&amp;G 230</td>
</tr>
<tr>
<td>1.2</td>
<td>be acquainted with the types of Media available</td>
<td>PP&amp;G 231</td>
</tr>
<tr>
<td>1.3</td>
<td>be acquainted with the Agency’s expectations for processing incoming media</td>
<td>PP&amp;G 233</td>
</tr>
</tbody>
</table>

LESSON:

Format of Instruction: Visual, Verbal, Interpersonal, Intrapersonal, Kinesthetic
Instruction: ASOL Panel or Panelists, Training Assistant, Training Supervisor, Supervisor

<table>
<thead>
<tr>
<th>Resources Needed</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Training Manual Module</td>
<td>PP&amp;G 230</td>
</tr>
<tr>
<td>-Audio/Visual Aides</td>
<td>PP&amp;G 231</td>
</tr>
<tr>
<td>-Other Resources</td>
<td>PP&amp;G 233</td>
</tr>
<tr>
<td>-Instruction Summary</td>
<td>PP&amp;G 233</td>
</tr>
</tbody>
</table>

Introduction
- Provide Overview of module
- Explain purpose of the module
- Explain the objectives of the module

| 1.1 | Evolution of NG-911 | Training Manual Module: 230 Audio/Visual Aides: Spokane County Advanced School of Leadership (ASOL) NG-911 Public Education Prezi, Projector Other Resources: Presentation handout Instruction Summary: Instructor(s) present information in the classroom setting using the Public Education Prezi which highlights the evolution and implementation of NG-911 locally and nationwide. |

| 1.2 | SMS, MMS, streaming video, video conferencing | Training Manual Module: 231 Audio/Visual Aides: Spokane County ASOL NG-911 Training Prezi, Projector Other Resources: Presentation handout Instruction Summary: With the aid of the Prezi the instructor(s) will discuss types of media that are currently accepting and those which will be in the future. |

| 1.3 | Processing incoming NG-911 media | Training Manual Module: 231 Audio/Visual Aides: Spokane County ASOL NG-911 Training Prezi, Projector Other Resources: Prezi Handout. Instruction Summary: With the aid of the Prezi the instructor(s) will discuss the expectations of the Agency on how NG-911 media will be processed |

Review-
Instructor(s) will initiate a question and answer session on NG-911.

Demonstration of Mastery-
Weekly quizzes and tests.
LESSON PLAN – CHAPTER 200, MODULE 2
Recommended Minimum Training Hours: 4.0

MODULE TITLE: NG-911 Call Processing

PURPOSE: Familiarize trainees with the NG-911 system used by the Agency.

OBJECTIVES:

<table>
<thead>
<tr>
<th>Number</th>
<th>Upon completion of this module, the student will</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>demonstrate the ability to recognize all types of NG-911 media available.</td>
<td>PP&amp;G 231</td>
</tr>
<tr>
<td>1.2</td>
<td>demonstrate the ability to apply procedures to process incoming media within Agency parameters in a professional manner.</td>
<td>PP&amp;G 233</td>
</tr>
</tbody>
</table>

LESSON:

Format of Instruction: Visual, Verbal, Interpersonal, Intrapersonal, Kinesthetic

Instruction: Training Assistant, Training Supervisor, Supervisor

Resources Needed
- Training Manual Module
- Audio/Visual Aides
- Other Resources
- Instruction Summary

Introduction
- Provide Overview of module
- Explain purpose of the module
- Explain the objectives of the module

2.1 SMS, MMS, streaming video, video conferencing

Training Manual Module: 231
Audio/Visual Aides: Other Resources: VESTA Telephony System, Test CAD
Instruction Summary: Using test cad and training 911 system the instructor will simulate incoming 911 using all types of accepted media. Students will take turns being the Call Receiver who is processing the call. Any trainees not currently being the Call Receiver will still enter information using test CAD following Agency guidelines and policies.

2.2 Processing incoming NG-911 media

Training Manual Module: 233
Audio/Visual Aides: Other Resources: VESTA Telephony System, Test CAD
Instruction Summary: Using test cad and training 911 system the instructor will simulate incoming 911 using all types of accepted media. Students will take turns being the Call Receiver who is processing the call. Any trainees not currently being the Call Receiver will still enter information using test CAD following Agency guidelines and policies.

Review-
- Process simulated calls.

Demonstration of Mastery-
- Successfully process simulated calls with NG-911 media.
### LOCAL REVENUE

<table>
<thead>
<tr>
<th>County</th>
<th>Local Revenue (as of date)</th>
<th>NET</th>
<th>VOA</th>
<th>Total Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>$25,242.52</td>
<td>$228.03</td>
<td>51,029.50</td>
<td>$75,594.05</td>
</tr>
<tr>
<td>Adams</td>
<td>$32,050.39</td>
<td>$1,835.76</td>
<td>34,401.14</td>
<td>$69,409.25</td>
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<tr>
<td>Benton</td>
<td>$223,464.75</td>
<td>$914,823.13</td>
<td>640,313.19</td>
<td>$1,584,296.60</td>
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<tr>
<td>Custer</td>
<td>$123,720.00</td>
<td>$281,933.90</td>
<td>282,590.59</td>
<td>$688,244.52</td>
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<td>Clark</td>
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<td>$25,259.86</td>
<td>305,223.03</td>
<td>$671,337.85</td>
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<td>Clinton</td>
<td>$22,001.31</td>
<td>$7,000.00</td>
<td>22,001.31</td>
<td>$44,000.00</td>
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<td>Franklin</td>
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<td>$3,457.00</td>
<td>8,456.53</td>
<td>$16,456.53</td>
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<td>Grant</td>
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<td>$4,462.18</td>
<td>151,609.16</td>
<td>$303,160.84</td>
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<td>Gs Harbor</td>
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<td>$149,026.15</td>
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<td>King</td>
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<td>Klickitat</td>
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<td>112,501.29</td>
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<td>Lewis</td>
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<td>$445,973.41</td>
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<td>Lincoln</td>
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<td>$2,865.29</td>
<td>26,047.94</td>
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</tr>
<tr>
<td>Mason</td>
<td>$121,727.51</td>
<td>$11,018.01</td>
<td>199,727.70</td>
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<tr>
<td>Okanogan</td>
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<td>$1,269,367.18</td>
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<tr>
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<td>$30,337.45</td>
<td>70,624.49</td>
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<tr>
<td>Pend Oreilly</td>
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<td>$283,366.78</td>
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<tr>
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<td>340,545.40</td>
<td>$565,511.30</td>
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<tr>
<td>Snohomish</td>
<td>$18,344.17</td>
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<td>180,344.17</td>
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<tr>
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<td>$5,361,090.67</td>
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<tr>
<td>Jefferson</td>
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<td>$1,075,675.39</td>
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<td>$1,702.70</td>
<td>168,641.24</td>
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<td>Skagit</td>
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<td>$11,049.13</td>
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<tr>
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<td>$87,229.24</td>
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<td>$63,261.89</td>
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<td>$4,705.00</td>
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<td>$15,345.30</td>
</tr>
</tbody>
</table>

### C-1

<table>
<thead>
<tr>
<th>State Contract Information</th>
<th>Costs Reported</th>
<th>Costs Expended</th>
<th>Costs Reimbursed</th>
<th>Costs Unreimbursed</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDF Contract</td>
<td>$345,000.00</td>
<td>$325,000.00</td>
<td>$150,000.00</td>
<td>$195,000.00</td>
</tr>
<tr>
<td>Operational Contract</td>
<td>$150,000.00</td>
<td>$125,000.00</td>
<td>$75,000.00</td>
<td>$75,000.00</td>
</tr>
</tbody>
</table>

### Other Expenses

- **Statewide Services**
- **9-1-1 Call Volumes**

- **Network and**
  - **Drop-In**
  - **Services**

- **Total**
- **Wine**
- **Price**

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*Report updated as of 3/03/2023*