NC 911 Board

NORTH CAROLINA 911 BOARD MEETING

January 27, 2017

Banner Elk Room

3514A Bush Street

Raleigh, NC

9:30 AM – 12:00 PM

Call To Order

Richard Taylor

* Swearing in of new Board member **Josh Brown**, CenturyLink, appointed by Sen. Berger, Senate President Pro-Tem to fill the expired term of Laura Sykora, representing a Local Exchange Carrier;
* Swearing in of new Board member **Chuck Greene**, AT&T, appointed by Rep. Moore, Speaker of the House, to fill the expired term of Rob Smith, representing a Local Exchange Carrier;
* Swearing in of new Board member **Chief Jeff Ledford**, City of Shelby, appointed by Sen. Berger, Senate President Pro-Tem to fill the expired term of Darryl Bottoms, representing Chiefs of Police;
* Swearing in of new Board member **Donna Wright**, Richmond County Emergency Services, appointed by Governor McCrory to fill the expired term of Jason Barbour, representing a NENA;

I, state your name, do solemnly swear that I will support the Constitution of the United States.

I, state your name, do solemnly swear that I will be faithful and bear true allegiance to the State of North Carolina, and to the constitutional powers and authorities which are or may be established for the government thereof; and that I will endeavor to support, maintain and defend the Constitution of said state, not inconsistent with the Constitution of the United States.

I, state your name, do solemnly swear that I will well and truly execute the duties of my office as a member of the North Carolina 911 Board according to the best of my skill and ability, according to law, so help me God.

Roll Call

Richard Taylor

Election of 911 Board Vice Chair for 2017

Richard Taylor

(vote required)

Article II Section 6: Chair. The 911 Board Chair shall be the State Chief Information Officer or designee as provided by G.S. §143B-1401(4). The Board shall select a vice-chair annually from the appointed members by simple majority vote. The vice-chair term of office shall be one year.

NC 911 Board 2017 Vice Chairman Election Ballot

To cast your vote, place a check mark beside your choice for Vice Chairman or write in a name of a Board member.
Sign your ballot.

_____ *Bone, David*

_____ *Write-In Vote*

Chairman’s Opening Remarks

Vice-Chairman

Chairman's Opening Remarks

Vice-Chairman

~ Recognition of Henderson – Vance County 911 Telecommunicator **Veronica Parham**

Presented to
Veronica Parham
of
Henderson – Vance County
Emergency Operations
For Outstanding Teamwork, Professionalism and Commitment to Public Safety
Demonstrated By You
June 29, 2016
Thank You for Striving to Make North Carolina's 911 System Excellent
January 27, 2017

Ethics Awareness/Conflict of Interest Statement

Vice-Chairman

In accordance with G.S. 138A-15, It is the duty of every Board member to avoid both conflicts of interest and potential conflicts of interest.

Does any Board member have any known conflict of interest or potential conflict of interest with respect to any matters coming before the Board today?

If so, please identify the actual or potential conflict and refrain from any undue participation in the particular matter involved.

Consent Agenda Vice-Chairman

(vote required)

(Complete Reports Located in Agenda Book On Web Site)

North Carolina 911 Board Work Session
SUMMARY
Wilkes County Agricultural Center
416 Executive Drive
December 1, 2016
9:30 AM – 4:30 PM

Members Present	**Staff Present**	**Guests**
David Bone (NCACC) Martin County	Ron Adams DIT (Temporary Solutions)	
Josh Brown (LEC) CenturyLink (pending)	Tina Bone (DIT)	
Heather Campbell (CMRS) Sprint (pending)	Richard Bradford (DOJ)	
Chris Estes (911 Board Chair)	Ronnie Cashwell (DIT)	
Andrew Grant (NCLM) Town of Cornelius	Dave Corn (DIT)	
Chuck Green (LEC) AT&T (pending)	David Dodd (DIT)	
Len Hagaman (Sheriff) Watauga County	Karen Mason (DIT)	
Greg Hauser (NCSFA) Charlotte Fire Department	Marsha Tapler (DIT)	
Rick Isherwood (CMRS) Verizon	Richard Taylor (DIT)	
Dinah Jeffries (NCAPCO) Orange Co. Emergency Services (phone & WebEx)		
John Moore (VoIP) Spectrum Communications	**Staff Absent**	
Niraj Patel (CMRS) Verizon (pending)		
Rob Smith (LEC) AT&T		
Jimmy Stewart (NCAREMS) Hoke Co. 911		
Slayton Stewart (CMRS) Carolina West Wireless		
Laura Sykora (LEC) CenturyLink		
Donna Wright (NCNENA) Richmond Co. Emergency Services (pending)		
Members Absent		**WebEx Guests**
Jason Barbour (NCNENA) Johnston Co. 911 (911 Board Vice Chair)		Mike Edge, Scotland Co 911

Darryl Bottoms (NCACP) Pilot Mountain PD		Jon Greene, GeoComm
Eric Cramer (LEC) Wilkes Communication		
Jeff Ledford (NCACP) Shelby (pending)		
Jeff Shipp (LEC) Star Telephone		

1. Chairman's Opening Remarks

Chairman Estes thanked all for coming and checked to ensure Dinah Jeffries was participating over the phone bridge, which she was. He asked Mr. Taylor if anyone else was expected to join in later. Mr. Taylor replied the only other Board member who might be joining would be Jason Barbour. Noting Mr. Barbour was not logged in on WebEx, Mr. Taylor asked if he was on the phone bridge and received no reply.

Chairman Estes explained that although this annual work session would be similar in structure to a Board meeting, it would be much more casual and informal. He then took a moment to recognize new Board members attending the meeting, asking each to offer a brief personal history:

Josh Brown, representing and with CenturyLink for 15 years
Chuck Green, representing and with AT&T for 17 years
Chief Jeff Ledford, Shelby Chief of Police representing NCACP (not present)
Niraj Patel, representing and with Verizon Wireless for 11 years
Donna Wright, representing and with NENA for 26 years

Chairman Estes thanked the new Board members for their willingness to serve on the Board, and encouraged them to participate in the work session, as no votes would be taken.

2. Presentation of National 911 Guidelines Assessment Report findings

Mr. Taylor summarized the history of the statutorily mandated 911 State Plan, both from 2010 and 2012, and how a 2014 refresh of that plan prompted the Board to consider participating in a National 911 Guidelines Assessment Report offered to states by the National 911 Program Office to aid in the process.

The assessment report structure included nine categories of guidelines, with varying numbers of guidelines assigned to each category:

1. Statutory & Regulatory—27 guidelines
2. Governance—7 guidelines
3. Functional and Operational Planning—9 guidelines
4. Standards—6 guidelines
5. Security and Continuity of Operations—7 guidelines
6. Human Resources—8 guidelines

7. Evaluation—5 guidelines
8. Public Education—5 guidelines

Mr. Taylor observed that as the process began there was much discussion between Board staff, Mr. Bradford included, and the national assessment team, because staff felt many of the guidelines contained in the assessment were unclear. The project ultimately took nearly a year and a half to complete, and despite the very positive verbal report initially presented by the national assessment team at the PSAP manager's meeting last year in Raleigh, staff was less than happy with the written document when it arrived. Staff questioned several of the findings, sending a list of its concerns to the National 911 Program Office. The Program Office assessment team reviewed the list and responded to and acknowledged each staff concern, but modified only one of their findings as a result. Ultimately, the assessment team agreed to publish the staff comments and the team's responses to them within the final report as a concession to the staff concerns.

Mr. Taylor underscored that the whole focus of this is to look at what we can do better, not to feel criticized rather than critiqued. He stressed the focus is to look at what an outside group of 911 professionals sees as our weak and strong points. He explained that he wants to go through the assessment during this work session so if people see some things that are not already on the agenda we might stop and discuss them. He reminded everyone that many statutory and regulatory considerations cited in the guidelines do not, indeed, appear in our statute, so it may be that we want to take a look at them to consider whether or not they should be taken up as possible legislative changes.

Mr. Taylor displayed a spreadsheet he had constructed in which assessments assigned to each guideline by the assessment team were quantified as "scores" based upon percentage values, observing he had created it to provide a color coded visual representation of the assessment team's findings. The color coding represented the numerical "scores" Mr. Taylor had assigned relative to the assessment criteria used by the assessment team:

- Red—does not meet minimum criteria, "score" of 0
- Yellow—meets minimum criteria, "score" of 33
- Blue—meets advanced criteria, "score" of 67
- Green—meets superior criteria, "score" of 100

Some guidelines were assessed with a binary Yes or No answer. The color coding Mr. Taylor used for such "scores" was:

- Green—Yes, "score" of 100
- Red—No, "score" of 0

Mr. Taylor first addressed guideline SR2: "The state has a designated 911 coordinator." The assessment team decided North Carolina only met that criteria at a minimum level because the state does not statutorily *require* such an appointment, despite the fact that the 911 Board has designated the Executive Director of the 911 Board as the person who serves in that capacity.

Mr. Taylor pointed out this is one of the issues where staff disagreed with the assessment because the *intent* behind having a state 911 coordinator is clearly being met by the Board's designation despite it not being statutorily *required*. Ms. Sykora asked 911 Board Counsel Richard Bradford how important it is for that requirement to be in the statute if that is simply the way this Board functions.

Mr. Bradford explained he believes the point the assessment team was trying to make is that some states have statutory or regulatory language which prescribes specific duties, powers, and so forth for the person who sits in Richard Taylor's position. He observed the State of North Carolina frequently does not do that for its boards and commissions—sometimes it does, but frequently it does not. He added that NC has a number of other statutes that prescribe how discretion is exercised, the oversight associated with that, and so forth. He posited that we have more than an adequate legal basis for this Board, Richard Taylor's role.

Chairman Estes observed that his perspective in looking at the report is for the Board to determine if it is on track in areas that are important to it, regardless of what they (the assessment team members) say is important. Citing the example of whether or not Mr. Taylor was statutorily appointed, he observed "Who cares?" He said he's not going to waste a lot of cycles talking about that topic because he feels like we have adequate leadership, we have good staff, we have the Secretary of Technology over this Board through the Department of IT, so there's a lot of law that protects the citizens of North Carolina. To him, he observed, it's a non-issue.

He continued by noting, however, that in looking through the document he does think there are some areas which provide good insight, citing cybersecurity as a good example and observing that as Mr. Taylor scrolled through that column on the spreadsheet, he did not think it was "as green as we would probably want it to be." He continued that given what's going on in the world right now, that's probably an area we want to talk about as a Board and maybe double-down some of our efforts either through the committee structure, funding, etc., because this is an area that's continuing to evolve and affect citizen services. He mentioned that is but one example of how the report does highlight an area that we should spend some time talking about.

Mr. Taylor explained that he brought the topic up principally because it illustrates the tone of the assessment: if something's not in the Statute, then it feels as if the implication is that the North Carolina 911 system is somehow inferior. In response to a query from Sheriff Hagaman as to where we stand in relation to other states, Mr. Taylor noted that the only other state to have completed the assessment was Delaware, which doesn't compare to North Carolina. He added, however, he had been checking with his national counterparts in other states regarding some of the assessment findings and had found that we are stronger than some in regard to certain areas, but do have room to improve in others. Mr. Bradford added that in surveying statutes and regulations across the country in all the states recently, he would say that North Carolina is well above average. He observed some states do things very differently than North Carolina, having fundamental differences, not necessarily good or bad, that these guidelines don't take into account, which was part of the problem he had with the assessment from a legal position.

Discussion ensued regarding guidelines SR16-SR20: quality assurance, training, and certification and accreditation. The assessment team had found that the state 911 system did not meet minimum criteria established in the guidelines for those activities because they were not statutorily mandated. Topics Board members discussed included how 911 funds may be used to pay for costs associated with those activities, exclusive of “people costs,” i.e. paying personnel to administer those activities or paying part-time personnel to fill in for those attending training; how PSAPs have felt they were being told how to run their business; how labor-intensive a thorough quality assurance program is; how the state OEMS does dictate, through its medical director, how EMD is to be performed and how quality assurance is an essential part of that; how the new rules don’t dictate how an activity is performed—only that it is performed—whereas OEMS does dictate how when the activity is EMD; the possibility of providing contracted QA for any of the protocols in use by PSAPs as a statewide project in lieu of paying personnel costs, which is prohibited by the statute; whether the activities should be recommended or mandated; etc.

Chairman Estes suggested a list be started of what areas within the assessment are important to the Board as potential goals for prioritizing funding or contemplating statutory changes. A flip chart was produced, and Mr. Taylor asked Karen Mason to record items on the list, which she began to do. Chairman Estes, citing the need to move on, reminded everyone to focus on where the Board’s limited resources can add the greatest value for the PSAPs.

Continuing in the Statutory & Regulatory category, Mr. Taylor briefly elaborated on SR 26 regarding multi-line telephone systems (MLTS) and SR27 regarding whether the state considers 911 as an essential government service, both of which had been assessed as not meeting minimum criteria in the report. Mr. Bradford observed declaring 911 as an essential government service is generally not done across the country, usually because of liability concerns and TORT claims law, so he does not feel it would gain any traction here.

Moving to the Governance category, Mr. Taylor spoke to guideline GV7, which referred to the state providing a resource sharing model, noting that OEMS already does that. Chairman Estes observed that we do encourage local governments to share resources, an example being PSAP consolidation. Mr. Bradford observed that the assessment does not look at the state as a whole, but only at the 911 Board, so the interplay among OEMS, DPS, and local governments was not really part of what the assessors considered.

The three guidelines which did not meet minimum criteria in the Operational category were OP5, OP6, and OP8. Mr. Taylor observed that although 911 funds may be used to pay for data backup expenses (OP5), and virtually every PSAP voluntarily does backup its 911 data, the state does not *require* a data backup plan. Consensus around the room was that such a requirement should not be dictated by the 911 Board. OP6 indicates state-level guidance should exist for public safety’s use of social media, and Board consensus was again that it was not something the Board should become involved in dictating, as ample best practice recommendations are already being adhered to. Turning to OP8: “The state has a formalized

process and communications plan for change management," Mr. Taylor opined that this was not within the Board's responsibilities; it is, instead, up to the local governments to determine.

Three of the guidelines within the Standards category were deemed not to meet minimum criteria by the assessment team: ST1, ST3, and ST4. Mr. Taylor observed that the standards were still going through the rule-making process at the time of the assessment, and noted that had the rules been finalized then, as they are now, there would likely have been no problem with ST1 and ST3. He did observe, however, that the requirement of ST4 that we have specific interface standards for the exchange of 911 data between functional entities is one that the Board does not presently have, although that will soon change, as it will be a necessary piece of the NG911 project and is currently being worked upon within that project.

Looking at the Security and Continuity of Operations category, Mr. Taylor offered that either the Board or local governments were actively addressing all of the issues for which the assessment team felt we were not meeting the minimum criteria in SC3-SC7, and addressed each one in detail to demonstrate why he believes that to be the case.

Noting that Human Resources and Training are subjects the Board has historically determined to be local issues, Mr. Taylor speculated that the Board could not meet the requirement of guideline HR1: "The state has minimum/essential telecommunicator training requirements," without a statutory change. Mr. Bradford concurred, adding, however, that is a topic the Education and Training Committee is working on right now. HR3 stated that "All emergency communications staffing positions have an associated job description;" Mr. Taylor agreed, as that is again within the local governments' purview, not this Board's. HR8 indicated that the state should have a comprehensive stress management program accessible statewide; Mr. Taylor agreed that the state does not, although many volunteer groups do offer that service statewide. Donna Wright and Greg Hauser concurred, observing those services are typically available either through OEMS or mutual aid agreements locally. Chairman Estes asked if members thought this was something the Board should become involved in providing, but Board member consensus was *not* to go there, although acknowledging it could help promote awareness of those currently available resources.

Within the Evaluation Category, the assessment team felt North Carolina 911 did not meet the minimum criteria for EV5: "The state has guidelines, based on specific metrics, for measuring and managing telecommunicator staffing levels." Mr. Taylor observed this has been a hot topic of discussion within the 911 community for many, many years, and continues to be one today. He related that PSAP managers have indicated to staff that this is a very high priority for them; that they are seeking some guidance.

Public Education was the last category in the assessment. Mr. Taylor essentially agreed with all of the findings within that category, offering that despite all the good work the Education Committee has done and is doing, we could stand to improve in all of the areas where the assessment team found us wanting.

Mr. Taylor concluded his comments on the assessment by encouraging Board members to actually read the detailed report, as the detailed information provides far more insight than this "high level" summary has. He added that how we feel about this assessment is probably going to be exactly how the PSAPs feel about our assessments when we begin doing the peer review of rules compliance, so please keep that in mind.

Chairman Estes shared that his attention was drawn to the portion of the Executive Summary on page 8 of the report in the Growth Areas section, noting that the Board should ensure all applicable topics are added to our list on the flip chart. Discussion principally revolved around recommending telecommunicator staffing requirements, with Mr. Taylor stressing that they must only be recommendations rather than mandates.

3. Discussion On Committee Structure

Chairman Estes reviewed the committee structure which the Board has used for several years, noting for new Board members that the majority of the work accomplished by the Board is dependent upon work first performed within the committees. He noted that changes will necessarily be made to the committees because of the Board member turnover taking place in January, and encouraged both existing and new Board members to volunteer for committees which interest them. He observed that today his intent was to discuss not only filling vacancies on existing committees, but also contemplating creation of some new committees.

Mr. Taylor and Chairman Estes reminded retiring Board members that stepping down from Board membership did not necessarily mean they could not continue working on committees, as many committee seats are for non-Board members, and their knowledge and expertise would be invaluable for helping new Board members serving on committees get up to speed.

Mr. Taylor then reviewed in some detail each of the existing committees, the functions they perform, and how frequently they tend to meet. He pointed out that each committee has a staff member assigned to it to arrange meeting logistics, provide meeting summaries, etc. Chairman Estes advised he and Mr. Taylor have discussed making a few tweaks and wanted to run them by the Board today for feedback. One was to "re-brand" the NG911 Committee as the Technology Committee to broaden its scope a bit, an example being assigning cybersecurity to that committee. Laura Sykora asked Mr. Bradford about potential for conflicts of interest since private sector companies Board members represent may be involved in bidding on some of the 911 Board's Next Gen 911 RFPs. Mr. Bradford replied once the contracts have been awarded, there would be no cause for such concerns, and frankly, access to private sector companies' resources and expertise is the reason those seats exist on the Board. With no further discussion forthcoming, Chairman Estes advised he would, as chair, like to see that change take place.

Chairman Estes offered another tweak would be to add a legislative committee rather than depend upon ad hoc interactions among Board members, Board staff, and the General Assembly or other policy makers, such as local government representatives. He said he envisioned it as more of a policy committee for developing relationships with all such

governmental officials rather than just relying upon Mr. Taylor to be the voice of the Board in such instances. Concerns were expressed about using the word “policy”, as Board members don’t want to give the impression that a committee is setting policy for which the entire Board should be responsible. Chairman Estes suggested substituting the word “strategy” for “policy,” noting for private sector people that in government circles the two are considered practically synonymous. He envisioned the charter of the committee to be to develop the strategy of the Board, keeping the entire Board current, and representing the Board in interactions with “policymakers,” both local and state—and potentially even federal.

Concerns about how the committee would interact with “policymakers” were expressed by Board members, and Mr. Bradford provided a lengthy explanation of potential pitfalls regarding what entity a committee/Board member would be perceived as representing and how that could be avoided. He also reviewed the Board’s statutory authority to make policies, rules, and standards, emphasizing they are not synonymous terms, policy being broader that the other two. He stressed that as long as debate within the committee is brought before the entire Board for decision making, there should not be a problem.

Chairman Estes said he envisioned this committee meeting only just before and/or during legislative sessions to prioritize any legislative initiatives the Board may have and figure out how to communicate those to the General Assembly while it’s in session; answer any questions coming from the GA in reference to the Board’s actions, etc. More concerns were raised about committee composition, open meeting law, etc., and Mr. Bradford explained at length that meetings with legislative members, committees, or subcommittees do not qualify as meetings where business is being conducted, only as meetings for the purpose of exchanging information, so they are not subject to open meeting law requirements.

Discussion continued relative to what the committee would be expected to do. Consideration of talking points was well received, and Mr. Taylor stressed that the committee would not be able to set policy—decision making would always be up to the Board—but if policies or talking points were articulated by the committee and approved by the Board, then when he or Chairman Estes or whomever is called to meet with a legislative representative from any walk of government, then everyone can be assured that what is being shared is not a personal representation of how the individual sees an issue, but a Board policy.

Conversation continued around how the committee could stay on top of what’s going on at the GA; whether the DIT liaison should be involved, and if so, how deeply; how Mr. Taylor would be more comfortable receiving specific Board direction rather than having to rely on just his sense of how the Board “feels” about a topic; etc. Relating how, when he is called downtown to meet with a legislator, he always carries multiple copies of whatever relevant documentation he might need simply to be prepared, Mr. Bradford observed that one of the purposes that could be served by this kind of a committee is to do exactly that: to be prepared, so that whomever is called to meet with a legislator after work or early the next morning to talk about “X, Y, and Z,” does not have to scramble to become prepared.

Observing that much remained to be done today and more time had already been spent on this topic than he intended, Chairman Estes advised he would table the discussion and solicit feedback from members offline. Before leaving the committee structure agenda item, however, he mentioned he wanted to touch on the School Safety Committee, asking if some of the education related suggestions articulated in the executive summary of the assessment could be assigned to that committee rather than the Education and Training Committee, since it had already been inundated with assignments. After much discussion regarding the charge to the School Safety Committee versus the role of the Education and Training Committee, the prevailing opinion was that it would not be a good idea, so it was left alone.

Lunch

4. Discussion on Grant Cycles

Announcing that during lunch he and Mr. Taylor had decided to make some changes to the agenda, Chairman Estes said they were going to eliminate the grant cycle discussion and examine the school safety program in greater detail, as well as cancel the PSAP visitation slated for later in the afternoon.

5. Discussion of School Safety Program

Mr. Bradford said that after attending meetings of the School Safety Program with the Board's School Safety Committee and Mr. Taylor, he was concerned that it seemed some agencies participating in that initiative expected to fund it using 911 funds. Mr. Bradford said he wanted to make it clear that cannot happen, although he heartily endorses the Board being supportive of the initiative; the statute simply does not allow for 911 funds to be used in that way. Chairman Estes asked if any requests for money have been made. Mr. Bradford replied no, it has simply been intimated, but he recommends that be nipped in the bud before it does become an issue. Mr. Taylor interjected that during the last meeting he felt DPS was virtually at the point of asking for funds, but never quite got there. Chairman Estes asked if there were some way to work around the issue and set policy to allow funding or do it through some sort of statewide initiative. Mr. Bradford replied the answer was still no; the fundamental system that the initiative seeks to promulgate is *not* a 911 system.

Discussion ensued touching on many aspects of the initiative, including impact on PSAPs, cell service to schools, could/should it be web based, but always returned to the fact that this system does not represent a 911 call. Mr. Bradford counseled waiting for someone to ask for funding, then require them to justify it within the statute. Rob Smith asked if the GA did modify the statute to require the 911 Board to fund this, would it be seen as an unacceptable diversion of 911 funds in the eyes of the FCC. Mr. Bradford replied it could, although such a change could be written in such a way as to circumvent the problem. School Safety Committee members Dinah Jeffries and Greg Hauser both acknowledged this is an important and worthwhile initiative, but as yet there are still too many unknowns to begin developing standards and guidelines of any type. Chairman Estes said he thought we should develop a standards and guidelines document nonetheless, and asked Ms. Jeffries and Mr. Hauser to work in conjunction with Mr. Bradford to that end.

6. Update On the NG911 Project

Dave Corn offered a slide presentation regarding the Board's NG911 project for new Board members, including why the 911 system must move from analog to IP, why and how the Board is contending with that change, directives which have come from the GA regarding NG911, how the project is progressing and will progress, etc., including putting the first PSAP online on the ESINet in 2018 and completing the process no later than 2020.

7. PSAP Managers Roundtable Discussion Summary

Mr. Taylor advised the Roundtable Discussions at October's annual statewide PSAP Managers meeting were:

- telecommunicator training—moderated by David Dodd
- transition plans for 911 personnel who will be retiring—moderated by Tina Bone
- what the future will look like for PSAPs—moderated by Dave Corn

Mr. Dodd reported that he had asked the PSAP managers how they would respond to an offering of regional telecommunicator training classes, observing he felt the idea had been well received with the caveat that two classes be offered in each region to accommodate training different shifts at different classes. Another topic had been the partnership between Richmond Community College and the Board to offer a PSAP managers certification program, noting that will be an agenda item at tomorrow's Board meeting. Topics suggested for consideration for training classes included customer service, stress management, generational communications (among the five generations presently in the workplace), some kind of training on high profile events, social media, drama in the workplace, cybersecurity, active shooters, liability issues, and equipment troubleshooting. Mr. Dodd related that mandatory training for line telecommunicators was very well received, garnering nothing but positive feedback.

Tina Bone reported that many PSAP managers will be able to retire within the next five years, but few have taken steps to provide a transition for their successors. She discussed ideas with them on how to prepare for that, principally trying to get everyone in the 911 center, including telecommunicators, more involved in what goes on in the 911 center—how the PSAP functions. Other ideas included allowing staff members to be involved in decision making, from how they can dress on weekends to which pre-arrival instruction protocols they prefer; encouraging good documentation habits, information sharing, and staff communications. Above all, however, the successor must *want* the leadership position, which can, indeed, be taught and learned; new leaders need to be prepared, not be thrown into a job which they later discover they are not cut out for or happy in.

Several Board members offered suggestions relative to this, such as considering mentoring programs; realizing that for the most part young people today do not want to stay in one job for a career—most want to work a few years at a job and move on; competition from the private sector in pay is a problem; and it may take four or five months for someone to realize they are not suited to the job.

Dave Corn related that the topic he moderated was, “What will the future look like,” observing he thought he learned as much as anyone in the managers group did. He said he immediately realized that although his frame of reference is technological, theirs is personnel—people, not stuff. By virtue of that, he said they spent little time on technology and lots of time on people issues, and nearly everything they talked about was negative. For example, they are afraid of video—afraid of the trauma it will cause to their staff—e.g. how will they bear up under seeing blood and gore on their computer screens? Another concern they expressed was how much more of a challenge multi-tasking will become with the addition of so many new streams of data—photos, videos, etc.—and what will happen with court time re: collecting photos or video, how long will they have to be retained, what happens if they have to go to court to explain it, etc. They were also worried about liability insofar as making a choice of which photo or video would be most useful to an incident commander, and will they have to have someone on staff who can read ASL if someone sends a video of someone signing a message.

Mr. Corn said about the only technical thing they liked about NG is hosted solutions— hosted systems provide removes the responsibility of managing technical platforms and provides an opportunity for them to devote more time to call taking and call takers. Otherwise, many managers appear to be uneasy about the changes NG911 is going to bring.

8. Legislative Agenda for 2017

Postponed.

9. Discussion On Committee Meeting Dates for 2017

Postponed.

10. Open Discussion

Chairman Estes invited Board members to offer any input or ideas in open discussion, starting with departing Board members because they probably could share some lessons learned over the years—what are the things they are most proud of, or would like to make sure we finish—make sure we get done. Laura Sykora said she has seen much improvement in the past eight years, observing that as tempting as it may be to single out one or two things to focus on, all are important. Rick Isherwood offered admiration and respect to the people who work in PSAPs, observing that something must be done to elevate telecommunicators both in pay and respect if we ever hope to reduce churn. He also encouraged continuing to promote PSAP consolidation as a way to help on all fronts. Rob Smith submitted that he felt the assessment report discussed earlier gave a poor representation of how well the North Carolina 911 system works—that North Carolina is one of only a handful of states that do things right. He added that the Board has a good balance of public and private sector members and should fight to keep it that way. He concluded with the observation that when North Carolina get NG911 done he’s confident it will serve as an excellent model for other states.

Chairman Estes then opened the floor to the remaining Board members. Greg Hauser observed the Firefighters Association is paying close attention to what this Board is doing, particularly the funding piece, noting they want to see response times continue to come down. David Bone said funding is his big concern, that we must increase efficiencies with what we do. He also referred back to what Mr. Isherwood had said about focusing on the people, not just the technology. Andrew Grant tendered that his number one goal is, and has been for years, to come up with a new funding model—get a good, forward-facing funding model in place before raising the 911 fee.

Noting the distinction between the funding model and fee revenue, Chairman Estes speculated that the Board will have to focus on both simultaneously. Mr. Bone observed that short term needs are going to need to be met before a new funding model is developed and implemented, which he feels is still a couple of years out. Others expressed agreement.

11. Establish Goals for 2017

Chairman Estes and Board members brainstormed many potential goals, and as each was discussed, Ms. Mason recorded it on the flip chart. Chairman Estes also reminded everyone not to forget there are already many things we are doing well, and we mustn't lose sight of them. Once the brainstorming was complete, Chairman Estes asked everyone to place from three to five check marks on the flip chart next to the topics they feel should become goals for next year. The list on the flip chart was:

- QA statewide project ✓
- Professional certification and accreditation of TCs, PSAP Mgr training ✓x8
- Cybersecurity ✓
- CISD
- funding, i.e. fee assessment for revenue ✓x5
- funding model for PSAPs ✓x14
- approved notice of meetings & cancellations
- retention job status (merged with professional certification etc.) ✓x6
- "legislative" & "policy" committee ✓x4
- NG911 & First Net ✓x14
- Consolidation ✓x9
- Backup PSAPs ✓x3
- Backup reporting
- PSAP management outreach ✓x2
- Strategic planning ✓x5
- Website improvement (enhance website) ✓x3

Once everyone had placed their marks, Chairman Estes observed four areas "jumped out" as the "top four"—next gen, consolidation, funding model, and accreditation/training—with a close second tier—job status, the strategic plan, revenue, and backups. He ventured that if we were to prioritize based upon this exercise, the four top scorers would become priorities for the next twelve months, adding, however, that doesn't mean the remaining ones aren't important, and

we will continue to have work going on in those other areas. Comments were made regarding backup PSAPs and strategic planning being goals set for us by the General Assembly, so those were added to the top scorers as well, since they are mandates.

Mr. Bone stressed continued follow-up re: the backup PSAPs, as there is still much work to be done on that. Chairman Estes asked Mr. Bradford if there are any legislative priorities that the General Assembly has given us that we may have missed or didn't give enough weight to. Mr. Bradford replied he didn't think so, observing that many of these things are inter-related and would come up naturally as the topics are developed and actions are planned. He added that the one thing he would highlight would be the strategic plan, but he sees that more as a writing exercise and updating what exists rather than a new work effort. Mr. Isherwood submitted that the job status and retention item could easily fall within the purview of professional certification and accreditation. Chairman Estes agreed there appears to be a correlation between the two, and suggested they could be merged together.

Chairman Estes proposed that the committees should look at these goals to understand what they mean to each committee, noting they may frequently apply to more than one. He also observed that last year eight or ten goals were identified, and somewhere along the way each of them appeared to be given approximately equal weight with the net result being that Mr. Taylor and his staff got spread really thin—it ended up "kinda killing everybody" working on a lot of things instead of the Board having provided clear direction on a few—which is what he sees as the purpose of today's exercise: to provide Mr. Taylor and staff better direction for prioritizing their time against these things that we just said are priorities for the Board.

Chairman Estes directed Mr. Taylor to have the goals written out by tomorrow's meeting in the form of a smart goal: specific, measurable, achievable, relevant, time bound, etc. Mr. Taylor asked Ron Adams to do that, at least in some sort of draft form, before tomorrow's meeting. Mr. Taylor commended everyone for a very productive work session, saying he believes it may well have been the best one to date. He also stressed his thanks to Slayton Stewart and his team for orchestrating the logistics of this, noting that Ronnie Cashwell and David Dodd have had nothing but good things to say about how well their needs have been met.

12. Wilkes County 911 PSAP Tour

Cancelled.

Adjourn

North Carolina 911 Board Meeting
Wilkes County Agricultural Center
416 Executive Drive
December 2, 2016
9:30 AM – 12:30 PM

Members Present	**Staff Present**	**Guests**
David Bone (NCACC) Martin County	Ron Adams (DIT-Temporary Solutions	Jamie Bobbitt-Surry Co 911
Darryl Bottoms (NCACP) Pilot Mountain PD	Tina Bone (DIT)	Nicholas Brown-Surry Co 911
Josh Brown (LEC) CenturyLink (pending)	Richard Bradford (DOJ)	Nikki Carswell-Iredell Co 911
Heather Campbell (CMRS) Sprint (pending)	Ronnie Cashwell (DIT)	Darrell Danley-Surry Co 911
Eric Cramer (LEC) Wilkes Communication	Dave Corn (DIT)	Brian Drum-Catawba Co 911
Chris Estes (911 Board Chair)	David Dodd (DIT)	Derrick Duggins-Carolina Recording
Andrew Grant (NCLM) Town of Cornelius (WebEx & phone)	Karen Mason (DIT)	Rick Edwards-Former Board Member
Chuck Green (LEC) AT&T (pending)	Marsha Tapler (DIT)	Greg Foster-Alexander County 911
Len Hagaman (Sheriff) Watauga County	Richard Taylor (DIT)	Deborah Godwin-Burke Co ECC
Greg Hauser (NCSFA) Charlotte Fire Department		Brock Hall-Burke Co ECC
Rick Isherwood (CMRS) Verizon		Del Hall-Stokes Co 911
Dinah Jeffries (NCAPCO) Orange Co. Emergency Services (WebEx & phone)	**Staff Absent**	Angela Hibbard-Burke Co ECC
Jeff Ledford (NCACP) Shelby (pending)(WebEx)		Judy Jenkins-Cornelius PD
John Moore (VoIP) Spectrum Communications		Christine Moore-Guilford Metro 911
Niraj Patel (CMRS) Verizon (pending)		Melanie Neal-Guilford Metro 911
Rob Smith (LEC) AT&T		Neil Parrisher-Richmond Community College
Jimmy Stewart (NCAREMS) Hoke Co. 911		Betsie Peter-Burke Co ECC
Slayton Stewart (CMRS) Carolina West Wireless		Holly Russell- Richmond Community College
Laura Sykora (LEC) CenturyLink		Candy Strezinski-Iredell Co 911

Donna Wright (NCNENA) Richmond Co ES (pending)		Robbie Taylor- Richmond Community College
Members Absent		Bruce Williams-Wireless Communications
Jason Barbour (NCNENA) Johnston Co. 911 (911 Board Vice Chair)		Victor Williams-Beaufort Co S.O.
Jeff Shipp (LEC) Star Telephone		**WebEx Guests**
		Krystal Agosto-Perquimans Co 911
		Byron Burns-CRS
		Michael Cone-Wilson Co 911
		Mike Edge-Scotland Co ES
		Kevin Medlin-Orange Co ES
		Jonathan Nixon-Perquimans Co 911
		William Smith-Richmond Co
		Stacey Tapp-Granville Co 911
		Corinne Walser-MEDIC
		Stephanie Wiseman-Mitchell Co 911

Chairman Estes called the meeting to order at 9:30, welcoming all and inviting Wilkesboro Mayor Mike Inscore to the podium. Mayor Inscore advised the first thing he wanted to do was issue a greeting from the Wilkesboro Town Council and himself. He related he is starting his tenth year as Mayor and was a Council Member for ten years before becoming Mayor. He thanked the Board for choosing Wilkesboro and Wilkes County to host this meeting, allowing each Board member to gain an exposure to how both the County and the towns of Wilkesboro and North Wilkesboro are being progressive and trying to elevate the status of a rural county, citing this building, the new Sheriff's Office next door, and the new jail downtown as examples of that effort. He complimented the work the 911 Board does, and thanked the Board for its efforts to provide consistency in 911 across the state, adding that the County and the cities have recently completed an addressing initiative that they are proud to say has helped them achieve that kind of consistency, too.

Chairman Estes next invited Sheriff Chris Shew to come to the podium to share a few words with the Board. Sheriff Shew began by thanking everyone for being here and noting how much he appreciates the hard work that everyone does. He said he wanted to give a special thank you and acknowledgement to the 911 Board and staff for being here, as well as Carolina West Wireless and Wilkes Communication for the roles they played in bringing this meeting together.

Chairman Estes thanked both the Mayor and the Sheriff for their hospitality, and moved to the swearing in of Heather Campbell of Sprint, appointed by Senator Berger, Senate President Pro-Tem to fill the unexpired term of Rick Edwards. Mr. Taylor conducted the swearing in ceremony at the podium, and when complete, Ms. Campbell was welcomed aboard by a round of applause

from the room as well as welcoming words from Chairman Estes. Chairman Estes then asked Mr. Taylor to conduct the roll call.

Mr. Taylor polled the Board members attending online and over the phone bridge. Andrew Grant responded he was present, Jason Barbour did not respond, Dinah Jeffries responded she was present, as did Chief Jeff Ledford, a pending Board member who will be seated in January.

1. Chairman's Opening Remarks

Chairman Estes related it is with both sadness and pleasure that he must acknowledge the retirement of some members from the Board. He stressed that many have accomplished much in their time on the Board, so he would like to take a few moments to recognize their efforts and dedication. Noting that Jason Barbour was absent, he called Chief Darryl Bottoms, Rick Edwards, Rick Isherwood, Rob Smith, and Laura Sykora to assemble around the podium at the front of the room. Each was presented with a plaque reflecting the number of years they served. Chairman Estes warmly thanked every one of them for their dedication to the Board's mission across the state, and expressed the fervent hope that they may continue to help the Board, for example by continuing to serve on committees.

Chairman Estes next recognized incoming Board members Josh Brown with CenturyLink, Chuck Greene with AT&T, Chief Jeff Ledford representing the NCACP, Niraj Patel with Verizon Wireless, and Donna Wright representing NENA. He then asked Mr. Taylor to proceed with the recognition of three telecommunicators from Surry County.

Mr. Taylor invited Jamie Bobbitt, Darrell Danley, and Geni Dowd to come forward, relating to the audience that this recognition is because of their outstanding performance in responding to an incident that occurred in June. The incident involved a structure fire in which the caller, who was trapped inside the house, could barely be heard over the phone. Because of their expert work as a team, the caller was safely extricated from the fire. Mr. Taylor then played a portion of the 911 call recording so members of the audience could experience just how difficult that was. He concluded his presentation by reading the inscription printed on the plaque presented to the team thanking them for striving to make North Carolina's 911 system excellent.

2. Ethics Awareness/Conflict of Interest Statement

Chairman Estes read the Ethics Awareness/Conflict of Interest Statement printed in the agenda and asked if anyone felt they had a conflict. Laura Sykora said she would abstain from voting on agenda items 7a-7d, David Bone said he would abstain from voting on agenda item 7a, and Rob Smith said he would abstain from voting on agenda item 7b.

3. Public Comment

Reading from the agenda, Chairman Estes opened the floor to public comment. He noted no speakers had registered in advance to speak, but offered to hear from anyone present if they chose to speak. No one responded, so he moved to the next agenda item.

4. Consent Agenda

Observing the complete Consent Agenda was available in the agenda book online, Mr. Taylor reported he had received no comments or corrections to the minutes of the September 30th meeting he had distributed earlier in the week, and opened the floor to such comments or corrections. No one responded, so the minutes were accepted as presented. Moving to the financial reports, he spoke to each of the fund balances (please see the online agenda book, page 2, for details at https://ncit.s3.amazonaws.com/s3fs-public/documents/files/12022016%20Agenda%20Book.pdf). Ms. Sykora made a motion to approve the Consent Agenda, Sheriff Hagaman seconded, and the motion carried.

5. Executive Director Report

a) Mr. Taylor asked whether or not the Board wished to post the National 911 Program State 911 Assessment report to the website. Ms. Sykora said she felt we should, since it is a public document, as long as our comments were included. No other Board members spoke, so Mr. Taylor moved on with his report.

b) Mr. Taylor reported that the 911 Board office has been relocated from 3514A Bush St to an interim location at 3700 Wake Forest Road, which is the main DIT facility, noting the final location is still expected to ultimately be downtown at the Jenkins House, though no timetable is yet available. He pointed out that an appropriate meeting space is not available at 3700, so at this time he is not sure where Board meetings will be held. The hope is that we will still be able to use the Bush St meeting space, even though the office is no longer located there. That said, he advised that the January meeting will be at the Education Building downtown across from the legislature on Wilmington St, noting that parking will be a problem but access is available to a parking deck a short walk from the Education Building. He added that the February 24 meeting will take place at the brand new Raleigh-Wake 911 center, which he described as an awesome facility.

c) Mr. Taylor displayed onscreen a list of potential meeting dates for 2017, both Board meetings and committee meetings, with dates and times, but said locations remain uncertain. Chairman Estes observed eight of the twelve Board meetings are in Raleigh, and he would like to see us revisiting other cities instead. Mr. Taylor noted that the dates for Wilson and Asheville were deliberately selected to coincide with the regional PSAP Managers meetings taking place during the same weeks. Chairman Estes asked for a motion to approve these dates; Sheriff Hagaman so moved, David Bone seconded. Chairman Estes observed the May 26 date was the Friday before the Memorial Day weekend and suggested revisiting that date—maybe moving it to the week before. He then called the motion, which passed unanimously.

Before moving to the next agenda item, Ms. Sykora recalled discussing hiring two new people for the 911 Board staff at the last meeting and asked for an update on that. Mr. Taylor replied that despite the Board having approved the positions, problems had arisen with OSBM claiming it had not received paperwork which had been sent, and that set the process back to square one. He said he is now awaiting OSBM's approval of the finance position, which he expects to come

through any time, and once that has been advertised he will be able to move ahead with the technical position.

6. Education Committee Update

Committee Chair Jimmy Stewart provided a brief background for new Board members of how the Education Committee had been charged with developing a comprehensive training/certification program for PSAP managers. Donna Wright had steered the committee to Richmond Community College, where Dr. Robbie Taylor, Holly Russell, and Neil Parrisher have put together an online program to meet that need. He then introduced Dr. Taylor to make a presentation about the program.

Dr. Taylor first introduced Neil Parrisher, Director of Workforce and Economic Development in the college's Public Safety Division, and Holly Russell, Director of Workforce and Economic Development for Richmond Community College, adding his position was Vice President of Workforce and Economic Development for the college. He thanked the Board for allowing him time to speak about the program, and began a slide presentation to accompany his comments. He reviewed the history of the initiative, including gathering information from PSAP managers and 911 Board staff, and then rating the information to prioritize the most important. He said they have structured the program to be offered online fee-waived, i.e. at no cost to the PSAPs. He reported the first class is nearly finished, and the hope is that after the Education Committee vets the class, RCC will be able to offer it by February, 2017. He then went into a very detailed description of what topics will be taught in each of the classes. The first class will be Intro to 911: the history of 911, why/how that became the number, 911 legislation history, how the 911 Board works, how the committees work, how the legislative process works, 911 Board members and who they are, standards and rules, Board policies, ECaTS reports, etc. The following two classes will address technology. The next class, PSAP Operations, looks at budget and finance, including how many different approaches local governments take in that arena. PSAP operations also looks at human resource laws, recruiting, retention, interviews, peer-to-supervisor, FMLA, etc. Dr. Taylor observed there was no way all of this information could have been presented in one training class, and if all goes well with these first classes, they are thinking of looking at a level two series the next year. He added it is a program that RCC wants the 911 community to drive—the 911 Board, PSAP managers, other PSAP employees—not just some generic class that wastes people's time.

Dr. Taylor continued by asking, "What do we (RCC) need?" At the top of the list he stressed they need trust from PSAP managers. He said they can say they trust us (RCC), but they won't really until they see they are receiving something of value by taking the classes. He observed that once they get into the program and see that it is valuable, that RCC is doing the things it's supposed to do and is accountable and responsible, then RCC will be able to gain their trust. Dr. Taylor added they also need to know what the value of the certificate is, which is determined by the 911 community, not RCC. He noted that as long as the Board wants RCC to continue doing this, he and his staff will continue to develop the classes, but if the Board determines it doesn't like what RCC has done, that it's moving in the wrong direction, they'll stop—he doesn't want to waste anybody else's time. He also noted they are going to need the Board's help to determine how to market the program, and prospective students are going to need to know that the quality and

academic rigor of the program is just the same as they would be for curriculum students; it is not a “crib” class, not a correspondence class—it will require both effort and ability. It will be modeled to the needs of the students and the 911 Board. He then asked for any questions/comments.

Mr. Stewart asked Dr. Taylor to speak to the prerequisite class. Dr. Taylor replied it is a one to two-week class currently being finished up that makes sure everyone knows how to send an email, post to a discussion board, post an assignment, etc., before they actually have to do it for class. Each student in the program will be required to complete that before beginning actual class work. Sheriff Hagaman observed that having taken classes from RCC, especially the online ones, he has found them to be “top-drawer,” and appreciates the fantastic job they do. Mr. Stewart seconded that, noting how RCC committed a “fantastic amount of resources” after the very first meeting with the committee and 911 Board staff to get it off the ground. Mr. Taylor offered that the partnership the Board has established with the community college system, and more specifically RCC, speaks volumes. He reiterated that the 911 Board is not having to put any money into this—these folks are “doing it on their dime”—and the training to the PSAP managers, again, will be free. He also thanked Donna Wright for her initial introduction to Dr. Taylor and his team, and reiterated this is a huge partnership.

Rick Isherwood asked how this will be communicated to the PSAP managers so they know it’s available. Dr. Taylor replied that is where RCC is going to depend upon the Board; to define who the target audience is, and to provide contact information for how to reach that audience. Greg Hauser speculated that he could disseminate the information to fire service PSAP managers through the Firefighters Association. Observing how much of what the classes will teach meshes right in with many of the topics discussed at yesterday’s work session, Mr. Isherwood asked if the Board had the authority to make the training mandatory. Chairman Estes stated the Board does not currently have that authority—it would require legislative change—although the Board can certainly highly encourage participation. He added that is a conversation currently going on in the Education Committee, not only for PSAP managers, but also for telecommunicators, and is one that we can continue to have.

The subject of whether or not this should be a requirement dominated conversation awhile longer, with Chairman Estes counseling to let the program get off the ground first. Greg Hauser offered he doesn’t think PSAP managers are looking for another requirement right now, and once we prove the worth of the program, he thinks it will sell itself. Laura Sykora pointed out that the peer review process regarding rules compliance will be kicking in about the same time as the class becomes available, so PSAP directors will have a lot on their plate. She also asked if classes will only be available sequentially, or if students would be able to start any time during the year. Dr. Taylor replied that would depend upon response, and whether or not openings in the classes (typically no larger than 25 students) would become available should enrolled students drop out. He added it would be difficult to come in for, say, the second technology class without having completed the first, that sort of thing. Heather Campbell asked if each group of students would continue through the series of classes as a group, and Dr. Taylor replied yes, like a cohort. Ms. Campbell offered that may be an important piece of information to include in the initial roll-out communication: the group is starting at the beginning of the year, so sign up now or you will have to wait until the next group begins—maybe not until next year.

Chairman Estes mentioned the Education Committee may need to determine some prioritization if only 25 students may enroll at a time. Dr. Taylor offered that if demand were that great, they could offer a second section of the class.

Mr. Stewart observed that every facet of public safety in North Carolina has some type of executive level program, such as the EMS Managers Program out of UNC Charlotte, and this is what we hope will become ours. He said he also hopes this is the beginning of a relationship with the Community College System for 911 which will be much like the ones Law, Fire, EMS, and Rescue already have in place.

7. Funding Committee Report

a) Martin County 911 Funding Reconsideration—Marsha Tapler displayed and reviewed a spreadsheet itemizing Martin County's request for additional funding, with a recommendation coming from committee in the form of a motion to increase its 2017 911 fund distribution to $402,393.22. Chairman Estes asked for discussion, and hearing none called the motion, which passed with Laura Sykora and David Bone abstaining.

b) McDowell County 911 Funding Reconsideration—Mr. Taylor reported that McDowell County had asked for a funding reconsideration to increase its 2017 911 fund distribution by approximately $38K to apply toward its backup PSAP project, but it already had a fund balance of approximately $48K. The recommendation coming from committee in the form of a motion is to have McDowell use its fund balance instead of receiving an increase in its 2017 911 fund distribution, which would still leave it with approximately $10K in fund balance. Chairman Estes questioned if that required a vote. Funding Committee Vice Chair David Bone interjected, "This is kind of a change." He explained how historically the 20% carry-forward has typically been considered when deciding how to proceed with a funding reconsideration request. He said that now the 911 fund is challenged because of the 10% of revenue directed into the NG911 Fund as well as meeting the costs associated with achieving the backup PSAP mandate, so, "We're really at a new day. We're having to make some tough decisions right now." He explained that the committee can no longer afford to dismiss the presence of fund balances relative to approving funding reconsideration requests because of the challenges the 911 fund now faces.

Turning to Mr. Bradford, Chairman Estes asked if he was correct in believing no vote was necessary in such a case. Mr. Bradford replied he felt there were two questions to be addressed. He said one is the Chairman's question relative to does the Board have to approve use of fund balance, and the answer to that is no. However, he added, the committee's recommendation does come before the Board, and that does require Board action, so they are really two different questions. Chairman Estes translated that to mean the committee is asking the Board to approve requiring use of fund balance versus offering additional funds. Mr. Bradford stated the committee has made a recommendation; the decision for the Board, and for the Board to vote on, is whether to honor the committee's recommendation or not.

Chairman Estes asked the committee to restate its recommendation in the form of a motion to the Board. Mr. Bone replied the motion is not to approve the funding reconsideration request based

upon McDowell County's level of fund balance. Asking Mr. Bradford to correct him if he's wrong, Mr. Taylor said all the committee is asking the Board to do is accept its recommendation. Mr. Bradford replied that is true for each of these items. He added, just for clarity's sake, each of these items is coming before the Board, and the question for the Board is to vote yes or no in response to the committee's recommendation; the detail behind it is what has been explained, but is not what is being voted on. The PSAP's use of its fund balance is up to the PSAP; it can do that or not. But the vote before the Board, if it votes in favor of the committee's recommendation, is essentially not to increase the funding. The PSAP requested an increase in funding over what was projected. The committee's recommendation is to deny that request. The decision before the Board is whether to support the committee or not. Chairman Estes called for any further questions or discussion, and hearing none, called the motion, which passed with Laura Sykora and Rob Smith abstaining.

c) Perquimans County 911 Funding Reconsideration—Mr. Bone stated that this request also has to do with the county's backup PSAP plan, and asked Mr. Taylor to provide details. Mr. Taylor related that the Funding Committee also considered Perquimans County's fund balance. Rather than agreeing to fund the entire amount requested, the committee recommendation that comes to the Board as a motion is to fund a lesser amount and ask the county to use its fund balance to make up the difference. Mr. Taylor said the original request was for $517K, the Funding Committee, in considering the county's fund balance, approved $510,840 in additional funding. Calling for further discussion or comment and hearing none, Chairman Estes called the motion, which passed with Laura Sykora abstaining.

d) Pitt County 911 Funding Reconsideration—Mr. Bone stated that this request also has to do with the county's backup PSAP plan, and turned to Mr. Taylor to provide details, who then gave the floor to Marsha Tapler. Ms. Tapler advised Pitt County had applied $423,674 of its fund balance to its backup PSAP plan as well as its funding reconsideration request for an additional $242,227 above its 2017 funding distribution of $561,004. The committee recommendation that comes before the Board in the form of a motion is approve the additional distribution of $242,227, yielding an adjusted 2017 total distribution of $803,231. Calling for further discussion or comment and hearing none, Chairman Estes called the motion, which passed with Laura Sykora abstaining.

Before moving to agenda item 7e, Mr. Bone asked if he could provide additional comments for the benefit of the Board. He reiterated his earlier comments about how the competition for limited resources prevents the Board from having the "luxury" it had in the past when there was "more available funding." He added that another component the committee is paying close attention to is whether or not financial reconsideration requests are for allowable expenses. He pointed out that in the past, historically, if the request was for allowable expenses it was practically automatically approved, but now even those expenses are having to be more closely scrutinized because of the state of the fund. He said that the committee is trying to fund what is *needed*, not just what is allowable. He added there are a number of PSAP funding reconsideration requests "in the hopper" right now, under review, and stressed the review process takes an extensive amount of time, with much back and forth communication between staff and the PSAPS and the committee accounting for it. He added the committee anticipates receiving additional reconsideration requests in January, noting "We are trying to work with PSAPs as best we can," he praised staff for doing a great job, observed there is a lot of work at hand, and advised all involved are asking for everybody's patience as they move forward. Chairman Estes thanked Mr. Bone for his comments.

e) Before discussion of this agenda item regarding a recommendation to change PSAP/CMRS percentages in accordance with NCGS § 143B-1404.(b)(3) began, Rob Smith asked Mr. Bradford if, since this affects the percentage allocated to CMRS providers, does it present a conflict of interest for representatives of CMRS providers sitting on the Board. Mr. Bradford replied he did not think so, the reason being that it does not pertain to any specific company. He added the statute also does provide some protection for the CMRS providers that have sought cost reimbursement. Referring to the amounts in question, he observed there is no jeopardy there, adding, for the benefit of those in the room who don't already know, the Board has a statutory obligation to pay interest to the providers if it is unable to meet a reimbursement request at the time it is submitted. He concluded by saying he doesn't think this presents an ethical issue.

Chairman Estes asked Mr. Bone to proceed with agenda item 7e. Mr. Bone explained the Funding Committee's reasoning behind the request. The statute allows the Board to adjust the percentage distribution between the PSAP and CMRS funds, currently an 80/20 split, once a year, and staff had asked the committee to consider a change. Mr. Bone said they feel like an adjustment to 85/15 would still provide adequate monies for the CMRS fund and would allow for more monies to be distributed to the PSAPs, and that is the recommendation coming from the committee. Chairman Estes asked if this was "forever" or just this calendar year—what is the time horizon? Mr. Bone replied the change would be made moving forward, and would remain in place until another change is requested, which can take place once a year. Chairman Estes then asked for questions or comments for the committee.

Saying he felt Mr. Bone had done a good job of explaining everything, Mr. Taylor noted that the money in question is limited to revenue submitted by CMRS providers, with the current 20% allocation to the CMRS Fund having been set maybe five or six years ago. He advised that fund has been running on the positive side, and extra money out of that fund has always gone towards grants; staff feels comfortable, after making projections for various scenarios, that this 15% will still be sufficient to meet our CMRS fund cost recovery obligations. Mr. Bone commented that he did want to reiterate what Mr. Taylor had said about excess CMRS fund balance having gone into the grant fund, pointing out for anyone who may have missed that point that if this modification is made, it will have a negative impact on the grant fund.

Heather Campbell asked if there has ever been a case where the Board has not been able to meet its financial obligation to CMRS providers seeking cost recovery. Mr. Taylor and Ms. Sykora both replied no, Ms. Sykora stressing that staff is comfortable that there will be sufficient funding. Ms. Campbell then asked what happens if "something crazy comes in and the fund can't handle that." Mr. Taylor responded that as soon as enough funds become available to pay that invoice, it will be paid with interest added to it. Mr. Bradford stated interest would be payable at 8%.

Greg Hauser said he wished to go on record stating some of the command level staff members of the Firefighters Association are starting to notice this, and do have some concerns regarding the potential for degradation in fire dispatch service. Chairman Estes called the motion, which passed with no abstentions.

8. Standards Committee Report

Observing this would be her last report as the Standards Committee Chair, Laura Sykora reported that at its last meeting the committee approved the final checklist that will be used when conducting the PSAP reviews. She noted that the next committee meeting is listed for December 7th, but they are going to need to shift that. The purpose of that meeting will be to walk through the training which the committee will actually use to train the reviewers on January 12th and 13th. Since the subcommittee working with that has been dealing with hurricanes and fires and "everything else," Ms. Sykora said she is hoping to reschedule the December 7th meeting to sometime during the first week in January, and will keep everybody posted as soon as that is worked out. She also presented a list to the Board of nine prospective peer reviewers the committee has selected, noting an additional five applications have been received that the committee hopes to review prior to the training so those additional prospective peer reviewers may also participate in the training pending Board approval at the January Board meeting. Ms. Sykora said this list comes to the Board as a committee recommendation in the form of a motion for approval. Chairman Estes asked for questions or comments. Greg Hauser mentioned one of his employees is on the list and asked Mr. Bradford if he has to abstain from the vote because of that. Mr. Bradford replied no. Hearing no further questions or comments, Chairman Estes called the motion, which passed unanimously without abstention.

Mr. Taylor explained, for the benefit of incoming Board members, the history of the Rules, and how peer reviews will be part of the process to ensure PSAPs are in compliance with the Rules. He spoke to how hard the Standards Committee under Laura Sykora's leadership has worked to make this happen, thanking them profusely. Ms. Sykora echoed his sentiments, relaying what an amazing job the committee has done and what an amazing amount of work it has been, as well as how proud she is of the work the team has done—as a team! Chairman Estes then thanked her for all the committee has accomplished with her at the helm, and in typical Laura Sykora fashion, she deflected that praise to the committee, admonishing all that she did was run the meetings.

9. Update on 2017 Grant Recipients

Mr. Taylor reported all the Grant contracts have gone out, and some (Martin Co, Lincoln Co) have even been signed and returned. He added the Pasquotank County one is on hold because of the change in their backup plan which he related to the Board at the September 30th meeting. Presently the hope is that Pasquotank will be able to work with Martin County on a joint backup PSAP plan to better utilize resources, and Mr. Taylor said he wanted to thank David Bone and his team for their work on that plan.

10. NG911 Committee Update

Chairman Estes said he wished to dispense with this because of the detailed presentation the Board received on this item at yesterday's work session.

11. Update on Backup PSAP Implementation

Tina Bone reported that only two PSAPs do not presently have approved backup plans: Franklin County and Eastern Band of Cherokee Indians. She said she is confident Franklin Co will be approved soon, advising they are working with Halifax County on a joint effort, working out radio issues and such, but have not yet written the final plan. She related she is meeting with Eastern Band of Cherokee Indians in a couple of weeks to see if she can help them, noting David Dodd had worked with them a few weeks ago as well. She said the problem is they had a change in administration—a new Chief, a new PSAP Manager, a new EM Director, etc.—so she and David will be staying in contact with and offering their services to that team.

Ms. Bone advised there have been no new implementations since the last Board meeting, but she expects several within the next few months. Chairman Estes asked if we know how the backup plans in counties hit hard by Hurricane Matthew performed. Mr. Taylor replied no, because their network connectivity went down due to carrier infrastructure having gone down. Mr. Taylor added that he recently met with Franklin County Commissioners and the PSAP manager about the radio issues they are confronting, and he thinks that meeting got things moving in the right direction. He added he also contacted Allen Sadowski from FirstNet, and he is also offering counsel to them on their radio system.

Noting that Greg Hauser and his team from Charlotte assisted with both the hurricane and recent fire events, Chairman Estes asked him if EM has scheduled any debriefing with providers to talk about how we can avoid problems such as those encountered during these events. Mr. Hauser said the Statewide Interoperability Coordinator, Seth Russell, through DPS and EM, has asked the Homeland Security Office of Communications to provide an over-arching after-action report that deals only with communications. He noted that process just kicked off on Wednesday, and they do plan to engage PSAPs, so he speculated there will be a lot of good information we will be able to glean from that. Speaking directly to how the affected PSAPs handled those outages, he opined it was a good wake-up call for PSAP managers—you may have a plan, but what happens when “the big one” hits? He said he doesn’t think any PSAP managers are truly ready for that, so it’s definitely something they need to keep in mind—an impetus to “think outside the box”—what you think may happen is not always what’s going to happen in a disaster environment.

Chairman Estes tendered that he’s not sure he wants to wait for some national group to help us with our PSAPs, so does this Board need to take a special action to debrief with providers and/or the PSAPs to share lessons learned with PSAP managers at our PSAP manager’s meetings in the future? Mr. Hauser said he thinks those conversations are taking place, or already have, at the local levels, so we might be able to corral that information. Mr. Taylor related that CenturyLink played a big role in those conversations, and has already shared some of that information, adding he and Dave Corn have already spoken about some possible solutions that he’s not really ready to talk about yet, but believes may provide a concept that will work. Chairman Estes stated he thinks that after the first of the year the General Assembly is going to be asking us to provide input relative to that question, and he doesn’t want to “be caught flat-footed,” so he doesn’t know whether to create a special committee or if staff wants to take the lead on this or what. Mr. Taylor

replied he has already received after-action reports from three of the five counties involved, and he would like to leave it at the staff level at this point, to let staff work directly with the providers and the PSAP directors. Laura Sykora offered CenturyLink could certainly put staff in direct contact with its area operations managers to learn everything that was done both to prepare for and respond to the hurricane. Chairman Estes asked staff to provide an update at the next Board meeting, and Mr. Hauser asked that it also be shared with EM and the Statewide Interoperability Coordinator. He also counseled not to ignore all the good things that happened, all the good work that went on. Mr. Taylor added he has never seen the FCC so involved—that the Public Safety Bureau called him on Sunday morning wanting to know what was going on and what they could do to assist—and how Admiral Simpson has really made 911 a top priority.

12. Approval of Proposed 2018 PSAP Funding

For the benefit of new Board members, Marsha Tapler reviewed/explained how staff must publish proposed PSAP Fund distribution amounts by December 31st of each year, then presented data compiled for 2018. She said staff brings this recommendation before the Board, as it was not able to bring it before the Funding Committee prior to this Board meeting. Mr. Taylor underscored that this report is for budgeting purposes only for the PSAPs—it is liable, and expected, to change. Chairman Estes solicited a motion to approve this recommendation, since in coming from staff rather than committee it does not come forward as a motion. Laura Sykora so moved, Greg Hauser seconded. After some comment and further explanation from Mr. Taylor, Chairman Estes called the motion, which passed unanimously without abstention.

13. Approval of 2017 911 Board Goals

Chairman Estes said that coming out of yesterday's work session there was an attempt to take the short narrative goals that were written on the flip chart and convert them into a long form, but his read of the document presented to Board members this morning is that although it captures in spirit what the Board talked about yesterday, it is still a draft document. He said that if it were approved today it would only be in the form of a draft. He offered to entertain any motions to either approve this as a draft or to table it for staff to clean up before the next Board meeting. David Bone made a motion to table it for further Board review and staff tweaking. Sheriff Hagaman seconded. Laura Sykora observed that will also let new Board members be the ones to approve the goals for the new year in which they will be serving. Andrew Grant questioned whether the intent of the discussion yesterday over telecommunicator accreditation and certification included any reference to it being mandatory versus voluntary, saying he was concerned about issuing mandates given the funding challenges referred to earlier in the meeting. Chairman Estes said he did not think that was discussed, and given the fact it would require legislative change if it were to be made mandatory, it will probably be rewritten to be voluntary. He said he thinks the wording of this has been discussed in committee, but not by the full Board, and is an example of why this needs to be tabled and that language tweaked a little bit—at this time the Board's only authority is to make it voluntary. Mr. Grant also questioned the reference to the statute already providing the Board the authority to promote consolidation through managing fund usage, and Chairman Estes responded that was in reference to some feedback received from counsel yesterday afternoon, but it was not discussed by the full Board as a concept it wanted to approve. Mr. Bone offered he would

encourage staff to try to get a more definitive timeline on some of these as best they can. Chairman Estes observed that after listening to this discussion he wondered if the Board might want to take ownership of this with staff, asking if a Board member or two might wish to volunteer to tweak this to represent more what the Board wants. He said if so, please approach Mr. Taylor afterward if you would like to participate, and with that said, tabled the motion on the Chair's authority, with no vote required.

Adjourn

Chairman Estes adjourned the meeting at 11:46.

PSAP Liaison Monthly Activity Report-January 2017

(12/5/2016 to 1/20/2017)

12/06/2017: Tina Bone and I made a PSAP visit to New Bern PD. We met with Lieutenant Mark Von Behren, who had recently been re-assigned as the Communications Director. The Lieutenant is totally new to the communications function, and asked us to help educate him on things he would need to know. We briefed him on terminology, basic technology and operations found in the center, and some options where he could obtain training that would further enhance his understanding.

12/13/2016: Tina Bone and I met with officials from Bladen County to discuss the re-locating of their primary PSAP. Currently the PSAP is housed in the Bladen County Courthouse. There is a new facility under construction about a mile away, that will house the Sheriff's Department and Detention Center. The plan is to move the primary PSAP to this facility and keep the existing PSAP as the backup location. Bladen plans to house a total of 6 positions in the new facility, which is two more than they have in their current PSAP. There was discussion on whether Bladen could keep their existing backup facility, located in an EMS base, and the current primary as backup sites. They were told the 911 Board would fund only one backup site, since either site could handle the current staffing level of 3-4 people. They also asked if surcharge funds could be used to move some eligible equipment to the new primary site, and were told yes, as long as they provided a statement of work, describing exactly what was being moved.

12/13/2016: Tina Bone and I conducted a meeting site visit to Jacksonville Police Department, where the March 2017 Southeast Regional PSAP Managers Meeting will be held. We met with Captain Patricia Driggers who showed us the meeting room, and also gave us a tour of the new PSAP.

12/14/2016: Tina Bone and I traveled to Wilmington, and met with Karen Morganti, a sales representative at the Riverside Hilton Hotel. We discussed the possibility of having the annual December 911 Board Work Session and Board Meeting at the Hilton in December of 2017. Ms. Morganti indicated the Hilton would be most happy to host these meetings, and is in the

process of putting together a proposal for meeting room space, sleeping rooms, and meals at their facility.

12/14/2016: Tina Bone and I made a PSAP visit to the New Hanover County 911 Center. We met with Communications Director Debora Cottle, and Steven Still, the new Emergency Services Director, and Warren Lee, the retiring Emergency Services Director. New Hanover has finally gotten the go ahead from the County Manager and Commissioners to proceed with the implementation of their backup plan. One of the big holdups was the location. Several sites were considered, and the final choice was the one they had looked at first; a County owned building downtown, which also houses an EMS base. Since they indicated the building had plenty of room, we asked if they would be willing to entertain inquiries from neighboring counties about co-locating their backup centers in the New Hanover facility? They indicated they would be willing to listen to any offer and assist if they could.

12/15/2016: I made a PSAP visit to Columbus County, and met with Valecia Pike. The main topic of discussion was their progress on implementing their backup center. Valecia indicated the problem was finding a location. So far they had looked at a suitable space at the Department of Aging, but some other County agencies were pushing against the PSAP having that. They also looked at a modular unit near the County Landfill, but Valecia doesn't think there is sufficient infrastructure there to support a backup PSAP. They have a visit scheduled after the first of the new year at the old Whiteville Academy Building on NC 701 North. Valecia thinks this may be the option they may go with. She said they have money budgeted to outfit the backup. She is concerned that people in the chain of command above her do not see the backup PSAP as a priority. She also mentioned that partnering with Bladen County had been discussed, and I shared the possibility of them working on an agreement with New Hanover County.

We also talked briefly about the PSAP inspection process that would begin after 7/1/2017. Valecia is all for the inspections, but hopes there can be some kind of coordination with other entities that inspect PSAPs, such as the Department of Insurance, and the bi-annual SBI audit.

12/16/2016: I made a brief stop in Lumberton, and met with Mitchell Pate and Bill French at the City of Lumberton's 911 center. Currently they are on "hold" with their backup implementation because the high waters associated with

Hurricane Matthew flooded the area in which their backup center was to be located. Bill French indicated that talks are underway with Robeson County to let the City of Lumberton co-locate their backup center in the same building the County plans to put their backup in.

In another note, Mitchell Pate indicated he is planning to retire around the end of February.

01/03/2017: I participated in a Staff meeting at the NC D.I.T. building at 3700 Wake Forest Rd, in Raleigh.

01/10/2017: I participated in the day-long new Board member orientation class, held at 3900 Wake Forest Rd. Here is a picture of those Board members that attended.

01/11/2017: Along with Richard Taylor and Marsha Tapler, I participated in a conference call with representatives at New Hanover County, to discuss some funding concerns for their backup PSAP.

01//11/2017: Along with Marsha Tapler and Tina Bone, I participated in a conference call with Allen Cress from Rowan County, to discuss some funding questions about his backup PSAP, and how that would affect the grant he received, and if a funding reconsideration would also be necessary.

01/11/2017: Ronnie Cashwell and I traveled to Wilson, NC to do a site visit at Wilson Community College, a place where we will hold the Northeast Regional PSAP Managers meeting, and the 911 Board meeting in March of 2017. We also met with a local hotel and are negotiating an agreement for them to provide sleeping rooms for Board members, for the Board meeting.

01/12/2017: I made a PSAP visit to Union County and met with Communications Director Larry Brinker. The purpose of the visit was to discuss the fact that Union County does not meet the 911 Board rule of answering 90% of their 911 calls in 10 seconds or less. Larry mentioned one reason for not meeting the standard is inadequate staffing. They received approval in the current FY budget to hire 6 additional people, which will give him one more person on each regular shift and one more on each of his two peak time shifts. We also discussed the fact that since Larry uses an Automated Call Distribution (ACD) system, the ECaTS reporting system shows he has a queue time inside his telephone switch of ~2 seconds. I suggested he contact Intrado/West and see if there is a configuration adjustment that can reduce that queue time? Larry feels like using the ACD is critical to him operation, but admits it handicaps him 2 seconds in trying to meet the 911 Board answer time Rule.

01/13/2017: I made a PSAP visit to Charlotte Mecklenburg PD, and met with Captain David Poston, Assistant Director Joe Vanderlip, and other staff members. The purpose of the visit was the same as the trip to Union County; to discuss why CMPD was not meeting the 90% of emergency calls answered in 10 seconds or less Rule. Captain Poston said theirs' is a problem of staffing too. Since February of 2016, CMPD has hired 33 new telecommunicator positions. They are currently allocated 127 positions, and even with the 33 new hires, which it takes up to a year to get them training and released, their staffing will still only be at 107. A recent

internal staffing study projects they will need 168 positions to handle the work load in the very near future. CMPD also used an Automated Call Distribution System, and uses an Intrado VIPER phone system like Union County. CMPD also experiences queue (or setup) time in their phone switch of ~2 seconds.

Captain Poston also said they have implemented a new Quality Assurance program, that has caused some longer answer times as staff becomes familiar with that process. As staff becomes more familiar and comfortable with the QA process, he thinks answer times will improve. They are also in the process of renovating their primary center, and adding an additional 15 to 21 call taker positions. They will have 15 new positions, and they are outfitting 6 positions that are primarily radio dispatch positions with telephone capabilities. Currently anything over 150 emergency calls per hour puts a strain on their system. He hopes the additional positions will allow them to move into the 180 to 200 calls per hour range before they start showing a decline in performance.

01/18/2017: I participated in the Technology Committee meeting, held at 3900 Forest Rd, in Raleigh.

01/18/2017: I participated in the Standards Committee meeting, that focused on the training program that will be used to train new Peer Reviewers for the PSAP Inspection process. The meeting/training was held at the Raleigh-Wake 911 Center in Raleigh.

01/20/2017: I attended the NC APCO and NENA Joint Chapter meetings in High Point, NC.

911 Network Specialist Report

December 2016 and January 2017

December 13th –	David Dodd and myself visited the Bladen County PSAP. They wanted to discuss moving their primary.
	David Dodd and I met with Jacksonville PD about meeting space. We also toured their new facility.
December 14th -	David Dodd and I visited the New Hanover County PSAP. Their EM Director was retiring so we had a chance to meet the new EM Director. We also discussed their backup plan.
December 15th -	I visited the Brunswick County PSAP. They had some questions about moving their backup location since the chosen location had a leaky roof during the last hurricane. They also greatly expressed concern about their current A911 vendor.
December 19th -	Standards Committee Conference Call
December 20th -	I visited the Alleghany County Manager. He's been with Alleghany County since September. I explained the backup requirement to him and offered help if needed.
December 21st -	I visited the secondary Hendersonville Police Department. We discussed backup options. His backup is the county.
January 6th -	Staff conference call to discuss call answer times.
January 10th -	New board member orientation.
January 18th -	Technology Committee Meeting
January 19th -	Standards Committee Meeting
January 24th -	Funding Committee Meeting
	While I did visit several PSAPs, my main focus has been to help PSAPs with their backup plan implementation and text to 911.

Dave Corn
Monthly Report
January 2017

Board Meeting

Participated in the New Board Member Meeting.

Radio Interoperability

Participated in a meeting with selected members of the State Interoperability Executive Committee (SIEC). We requested their assistance in finding ways to allow PSAPs with different radio systems to dispatch 911 calls. When NextGen is implemented a 911 call will be able to be sent to any PSAP in the State but dispatching that call from any PSAP is currently hindered by radio systems that do not communicate with other radio systems. Also participated in a meeting with selected SIEC members to determine if the current radio mobile command posts could be used to receive 911 calls.

CAD Interoperability

Participated in a meeting of Sungard CAD users to discuss the methodology and costs of providing CAD interoperability between Sungard CAD users at a reduced price to assist with dispatch. Like radio interoperability CAD interoperability is impeding the ability in NC for any PSAP to dispatch any other PSAPs 911 calls.

Technology Committee

Staff support for this committee. The committee reviewed the Conceptual Design for the GIS System and is considering whether to send it to the 911 Board for approval.

Standards Committee

Participated in the Assessment review process.

PSAPs

Worked on a variety of technical issues with PSAPs and attended the NC APCONENA meeting.

Returned to work January 3.

FY2016 North Carolina 911 Board PSAP
Revenue/Expenditure Report
Status as of January 20, 2017

Total received: 129

Completed: 27
Clarification – in process: 31
Reports awaiting review: 71
Review complete—waiting on revised sign report: 0
Report received—no documentation for review: 0
REPORT not received: 0

Dare –Tyrrell and Hyde Counties
Regional Emergency Communications Center (RECC)
Monthly Progress Report

November, 2016

Activity	This Period	Next Period
1. Design	• All design activities completed	• No further actions required
2. Permits	• No action required – All Building permits approved	• No additional action planned
3. Construction	• Construction continues, facility is fully under roof • Building completion – completed at 85% • Interior walls and infrastructure completed • Equipment room design is underway with equipment racks to be installed in December • Construction conference calls were conducted twice per month	• Construction will continue during this period • Interior walls and infrastructure will continue • Communications tower will be constructed • Communications shelter will be delivered and installed
4. Communications Systems	• Tower has been constructed • Ham radio equipment is being purchased • CenturyLink preparing for install of fiber network • Communications shelter has been ordered awaiting drawings	• DAS system to be installed • Motorola radio update underway • CAD system upgrade completed • Radio Consoles to be delivered, installed and tested • Communications Shelter drawing to be approved
5. Other Activity	• All technology equipment has been awarded. • MCP conducted bi-weekly project status conference calls with the client • MCP facilitated operations coordination meeting with all counties involved in the consolidation • MCP continues to update transition planning	• MCP will continue bi-weekly conference calls with the clients • MCP will continue activity on tri-county transition plan • Group meetings are scheduled to finalize operational components and identify logistical activities for the transition • MCP will continue coordination of transition planning for the new facility

Graham County
E911 Enhancement/Replacement
Monthly Progress Report

November 2016

Activity	This Period	Next Period
1. Design	• Preliminary technical design continues • Architect and County has completed and approved bid set drawings and the package has gone to bid	• Prebid conference is scheduled for December 7, 2016 • Bid opening is scheduled for December 14, 2016 • General Contractor will be hired
2. Permits	• Graham County permitting is completed for pre-construction activities continue	• Construction permitting completed
3. Construction	• Construction documents are completed – awaiting final input by General Contractor if needed • Utility Infrastructure has been run to the building site • Soil Samples have been taken	• Construction materials cost and fiscal projections will be completed in cooperation with General Contractor and County • MCP will coordinate with architect and General Contractor to complete the preliminary construction schedule
4. Communications Systems	• Radio system review and transition planning continues • CPE, CAD, recording system specifications being developed • Radio Tower will be bid separately from building construction and specs are being developed.	• MCP will continue coordination of communications plan development • MCP will schedule meeting with all technology vendors to create technology implementation and testing plan for December or January • MCP will initiate interoperability discussion with Swain and Jackson Counties to serve as virtual backups
5. Other Activity	• MCP conducted conference project status conference calls and visits with the County	• MCP will continue weekly conference call schedule with the County

Hyde County

Dare-Tyrrell-Hyde Regional Emergency Communications Center (DTH-RECC) – Hyde County Radio Communications & Simulcast Paging System

Monthly Progress Report

November, 2016

Activity	This Period	Next Period
1. Design	• Most load studies are complete but Englehard tower has been an issue with getting the correct information. Should be complete soon • Once all load studies are received, necessary antenna / lines for those sites and addressing any structural needs for those sites will proceed	• Construction continues on the towers/tanks identified in the project
2. Permits	• Permitting process has been completed • FCC licensing for paging has gone to FCC for final approval • Waiting on approval of for microwave frequencies	• No additional permitting work anticipated at this time • Waiting on Paging licensing • Microwave frequencies are expected on December 8, 2016 • Microwave equipment will be ordered as soon as Microwave license has been approved
3. Construction	• Construction documents were updated and are still being finalized • Once final drawings are complete Gately will get approval from Dare and Hyde Counties to begin work at the two water tank sites	• Gately Communications will initiate construction and modification of towers/water tanks included in the project
4. Communications Systems	• Motorola site equipment has been ordered and has started to arrive	• Communications system relating to the project will be constructed • Hyde County will continue preparation for transition to consolidated dispatch center
5. Other Activity	• Motorola comparators and other related equipment will be ordered soon within the next month or two by Gately	• MCP will continue periodic conference calls with the Client and vendor • Hyde County will continue preparation for transition to consolidated dispatch center

Richmond County
PSAP Consolidation and Construction
Monthly Progress Report

November 2016

Activity	This Period	Next Period
1. Design	• Reviewed 50% mechanical, electrical, and plumbing documents • Reviewed mechanical, electrical, and plumbing specifications • Further refined cost estimates • Provided information on access control systems in use in County facilities • Revised schedule for construction documents	• Review 75% – 90%construction documents • Refine cost estimates • Continue value engineering as needed • Discuss grounding with electrical engineer • Refine generator size for facility
2. Permits	• No activity this reporting period	• No activity anticipated for next reporting period
3. Construction	• Conducted updated topographical survey of site • Adopted prequalification policy for County • Released public solicitation notice for prequalification of vendors • Published prequalification documents on website • Received prequalification from submittal from local general contractor	• Evaluate general contractor submittals for prequalification • Publish list of prequalified vendors
4. Communications Systems	• Conducted further coverage studies with reduced tower height • Agreed to reduce tower height to alleviate presumed hazard from FAA • Notified FAA of intent to limit tower height so as not to exceed 294 feet • Received determination of "No Hazard" for the aeronautical study at a tower height of 294 feet	• Conduct on-site signal strength measurement for current antennas at new site • Determine new tower height based on signal strength measurements to maintain current connectivity • Provide cost estimate for tower

5. Other Activity	• Conducted numerous calls between County and MCP regarding project needs and status updates, including the tower, access control, cameras, and sprinkler system • Held progress meeting with architect	• Regular communications with project team, as needed – ongoing • Hold progress review meetings with architect – ongoing • Identify participants for law enforcement work group • Review current standard operating procedures (SOPs) – ongoing

PSAP Grant-Statewide 911 Projects Fund

		Total Disbursed FY2011-2014	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Remaining Grant Balance
			$27,672,073.85	$25,981,204.35	$25,287,111.46	$43,548,771.54	$41,630,279.74	$41,604,522.15	
FY2012	**Award Amount**								
Rockingham County	7,826,000.00	-7,493,017.69		-221,642.00		-102,768.90			8,571.41
FY2013	**Award Amount**								
Lenoir County	7,400,000.00	-7,236,114.23		163,181.50					327,067.27
FY2014	**Award Amount**								
Anson County G2014-01	949,000.00	-797,434.36		0.00					151,565.64
Henderson County G2014-04	3,600,000.00	-3,433,293.71		0.00					166,706.29
Hertford County G2014-05	4,250,000.00	-3,339,551.86	-431,687.77	0.00	-446,352.04				32,408.33
FY2015	**Award Amount**								
Caldwell County G2015-001	1,022,399.00	-995,299.62		-27,099.38					0.00
Dare County G2015-002	7,002,795.00	-747,957.72	-405,843.71	-252,159.70	-552,556.08	-1,031,197.11		-1,125,821.68	2,887,259.00
Haywood County G2015-003	2,694,827.00	-1,797,619.21	-63,403.00	-236,797.88		-464,315.42		-132,691.49	0.00
FY2016	**Award Amount**								
Graham County G2016-01	3,401,528.00	-11,407.00		-54,369.25					3,335,751.75
Hyde County G2016-02	1,266,887.00	-17,689.14		0.00					1,249,197.86
Richmond County G2016-03	6,357,537.00	-48,992.60	-37,567.80	-24,885.60	-36,132.84	-34,721.40		-38,521.40	6,136,715.36
FY2017	**Award Amount**								
Catawba G2017-1A	296,827.00								296,827.00
Chowan G2017-2	247,917.00								247,917.00
Forsyth G2017-3	1,085,000.00								1,085,000.00
Halifax G2017-4	2,000,000.00								2,000,000.00
Lincoln G2017-6	2,000,000.00								2,000,000.00
Martin G2017-7	4,315,437.00								4,315,437.00
McDowell G2017-8A	63,822.00								63,822.00
Mitchell G2017-9	2,000,000.00								2,000,000.00
Moore G2017-10	586,404.00								586,404.00
Perquimans G2017-12A	176,206.00								176,206.00
Rocky Mount G2017-13A	166,749.00								166,749.00
Shelby G2017-15	920,993.00								920,993.00
Washington G2017-16	344,524.00								344,524.00
Wilson G2017-17	48,185.00								48,185.00
STATEWIDE PROJECTS:	**Award Amount**								
E-CATS II	1,354,880.00	-355,423.65	-58,005.72	-61,763.30	-57,600.00	-60,247.17	-57,600.00	-75,135.88	629,104.28
Interpretive Services	1,155,000.00	0.00		0.00		-9,486.00		-24.75	1,145,489.25
Ortho Project III Image 15	3,719,332.00	-3,483,256.27	-141,291.30	0.00	23,992.50			-51,665.58	67,111.35
Ortho Project III Image 16	4,076,752.00	-1,587,983.61	-570,650.16	0.00	-354,859.86	-241,560.10		-260,500.92	1,061,197.35
Ortho Project III Image 17	3,815,129.00	0.00						-35,721.00	3,779,408.00
	Approved Transfer from PSAP Fund				19,661,220.20				
	Interest		17,579.96	21,442.72	23,948.20	25,804.30	31,842.41	29,887.89	
	Total Ending Fund Balance	$ 27,672,073.85	$25,981,204.35	$25,287,111.46	$43,548,771.54	$41,630,279.74	$41,604,522.15	$39,914,327.34	$ 35,229,617.14

$ 35,229,617.14
$4,684,710.20

			Remaining Grant Balance
FY2012	**Award Amount**		
Rockingham County	7,826,000.00		8,571.41
FY2013	**Award Amount**		
Lenoir County	7,400,000.00		327,067.27
FY2014	**Award Amount**		
Anson County G2014-01	949,000.00		151,565.64
Henderson County G2014-04	3,600,000.00		166,706.29
Hertford County G2014-05	4,250,000.00		32,408.33
FY2015	**Award Amount**		
Caldwell County G2015-001	1,022,399.00		0.00

Dare County G2015-002	7,002,795.00	2,887,259.00
Haywood County G2015-003	2,694,827.00	0.00
FY2016		
Graham County G2016-01	3,401,528.00	3,335,751.75
Hyde County G2016-02	1,266,887.00	1,249,197.86
Richmond County G2016-03	6,357,537.00	6,136,715.36
FY2017		
Catawba G2017-1A	296,827.00	296,827.00
Chowan G2017-2	247,917.00	247,917.00
Forsyth G2017-3	1,085,000.00	1,085,000.00
Halifax G2017-4	2,000,000.00	2,000,000.00
Lincoln G2017-6	2,000,000.00	2,000,000.00
Martin G2017-7	4,315,437.00	4,315,437.00
McDowell G2017-8A	63,822.00	63,822.00
Mitchell G2017-9	2,000,000.00	2,000,000.00
Moore G2017-10	586,404.00	586,404.00
Perquimans G2017-12A	176,206.00	176,206.00
Rocky Mount G2017-13A	166,749.00	166,749.00
Shelby G2017-15	920,993.00	920,993.00
Washington G2017-16	344,524.00	344,524.00
Wilson G2017-17	48,185.00	48,185.00

STATEWIDE PROJECTS:	**Award Amount**	
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Interpretive Services	1,155,000.00	1,145,489.25
Ortho Project III Image 15	3,719,332.00	67,111.35
Ortho Project III Image 16	4,076,752.00	1,061,197.35
Ortho Project III Image 17	3,815,129.00	3,779,408.00
	Approved Transfer from PSAP Fund	
	Interest	
	Total Ending Fund Balance	$ 35,229,617.14
	Encumbered	$ 35,229,617.14
		$4,684,710.20

NG 911 FUND	Revenue 10%	Interest	NG 911 Disbursement	NG 911 Fund Balance
Beginning Fund Balance:				$ 4,203,563.24
July 2016	$ 606,312.83	$ 2,670.51		4,812,546.58
August 2016	695,427.18	3,971.87		5,511,945.63
September 2016	645,510.31	5,220.10		6,162,676.04
October 2016	536,548.42	3,651.62		6,702,876.08
November 2016	835,527.68	5,126.93		7,543,530.69
December 2016	663,112.42	5,419.13		8,212,062.24

CMRS FUND:	CMRS Revenue	Interest	CMRS Disbursement	GRANT Allocation	CMRS Fund Balance
Beginning Fund Balance:					$ 3,632,364.39
July 2016	$ 656,844.67	$ 2,307.63	$ 560,421.36		3,731,095.33
August 2016	693,002.96	3,079.33	-		4,427,177.62
September 2016	603,575.13	4,192.77	900,314.49		4,134,631.03
October 2016	400,529.28	2,449.93	202,463.75		4,335,146.49
November 2016	942,860.67	3,315.89	-		5,281,323.05
December 2016	479,663.71	3,794.00	195,307.51		5,569,473.25

	Revenue						GRANT Allocation Transfer out	Monthly Expenditure	Fund Balance
PSAP FUND	PSAP 80%	Wireline	VOIP	Prepaid Wireless	Interest	Total			$ 17,961,526.84
July 2016	$ 2,627,378.63	$ 1,139,878.21	$ 978,145.51	$ -	$ 11,410.88	$ 4,756,813.23		$ 4,162,300.21	18,556,039.86
August 2016	2,772,011.87	984,540.29	944,856.09	801,844.70	15,314.61	5,518,567.56		4,341,807.49	19,732,799.93
September 2016	2,414,300.50	993,822.34	905,472.90	834,325.65	18,687.98	5,166,609.37	19,661,220.20	4,295,332.42	942,856.68
October 2016	1,602,117.15	956,372.87	988,880.03	832,747.00	558.68	4,380,675.73		4,281,584.90	1,041,947.51
November 2016	3,771,442.67	952,258.00	955,512.76	822,477.41	796.97	6,502,487.81		4,288,687.91	3,255,747.41
December 2016	2,718,094.37	924,999.17	948,100.12	837,474.51	2,338.87	5,431,007.04		4,301,653.73	4,385,100.72

NG 911 FUND	Revenue 10%	Interest	NG 911 Disbursement	NG 911 Fund Balance
Beginning Fund Balance:				$ 4,203,563.24
July 2016	$ 606,312.83	$ 2,670.51		4,812,546.58
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	PSAP 80%	Wireline	VOIP	Prepaid Wireless	Interest	Total		
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August 2016	2,772,011.87	984,540.29	944,856.09	801,844.70	15,314.61	5,518,567.56		4,341,807.49
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Consent Agenda Vice-Chairman

(vote required)

Public Comment Vice-Chairman

The NC 911 Board welcomes comments from state and local government officials, first responders, finance directors, 911 directors, citizens and interested parties about any 911 issue(s) or concern(s).

Your opinions are valued in terms of providing input to the NC 911 Board members.

When addressing the Board, please state your name and organization for the record and speak clearly into the microphone.

Speakers:

2017 Goals Discussion

Vice-Chairman

(possible vote required)

DRAFT 2017 911 Board Goals

- Develop an improved PSAP funding model for distribution of funds to PSAPs. Implementation will likely require more than one year, as the earliest possible implementation may be FY 2018 – 2019, but continuing the work already begun by the Funding Committee is imperative as funding reserves are stretched due to the reduction of net PSAP Fund revenue (the 10% allocation to NG911) and increased financial demands on the PSAPs (backup PSAP plan implementation).

- Continue the NG911 project as already in process, with an eye toward how the implementation of project goals will intersect and/or dovetail with FirstNet as it, too, moves closer to completion. Both initiatives are multi-year commitments. Progress on each must be maintained to ensure the Next Generation of 911 becomes reality in North Carolina within the project's timeline.

- New ways to encourage PSAP consolidation must be developed to augment the grant funding process, as grant funds are likely to become more scarce in the near future at least. The statute already provides the Board with authority to promote consolidation through grant funds, so a statutory change is not necessary.

- Implement professional certification and accreditation for all North Carolina telecommunicators, provide PSAP manager training classes, establish telecommunicator retention metrics.

    - Implementation of professional certification and accreditation for North Carolina telecommunicators will likely require a statutory change, and although that may conceivably happen within the next legislative session, it may take longer.
    - Richmond Community College is on track to provide PSAP manager training, and will be ready to offer the class within months.

- Data must be gathered to assess telecommunicator retention in North Carolina. Once sufficient data has been acquired, the 911 Board shall provide best practice recommendations and policies, hopefully by the end of the year. Data should include studies made available from local or national organizations where specific findings for PSAP operations are presented.

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2017 Goals Discussion

Vice-Chairman

(possible vote required)

Technology (formerly NG911) Committee Report

Jeff Shipp

a) GIS Conceptual Design

(vote required)

North Carolina GIS Conceptual Design document

Table of Contents

Proprietary Notice

1.0 Overview

Historically, all 9-1-1 calls utilized the telecommunications service provider for carriage and delivery of 9-1-1 to the Public Safety Answering Point (PSAP). The system has worked well for creating an emergency call system that connects a caller to a PSAP when the 9-1-1 digits are dialed. 9-1-1 in its purest form operates best with fixed locations and essentially hard coded databases that combine data attributes about a call location to route the call through the network to the PSAP.

Over the years the methods available for users to contact 9-1-1 has changed. Today the devices and systems that can trigger an emergency call has caused the existing 9-1-1 systems to pursue several augmentations, patches and significant system upgrades to meet the demand. While the current (often called legacy) 9-1-1 system continues to perform well it is quickly becoming obsolete and is generally limited. NG9-1-1 is a specialized system made up of network components and functional elements that are integrated to deliver 9-1-1 services over a flexible Emergency Services IP Network.

The North Carolina 911 Board will implement a fully functional and standards compliant NG9-1-1 system comprised of an interconnected and interoperable ESInet. The ESInet will be the operational foundation for the NG9-1-1 systems and functions. The ESInet will allow connection for all State PSAPs to enable NG9-1-1 capabilities.

One of the primary components of a 9-1-1 call is the determination of caller location. Within a legacy 9-1-1 call flow this is often done through using databases that contain a fixed address and fixed database comprised of addresses, address ranges, boundaries, points and landmarks. Information today is based upon multiple tabular databases which are referenced during the call to gather information as the call is being routed. Legacy databases are often developed from the Service Order Interface (SOI) records. The SOI record is a database record that contains a service order name, address or where the telephone number is assigned. While SOI records are still utilized in the wireline networks today, there are also other methods of database development such as the Master Street Address Guide (MSAG). The MSAG is developed by the 9-1-1 authority (often a county) that contains the address ranges and street names for the county. Along with the MSAG the Automatic Location Information (ALI) and the Automatic Number Identification (ANI) databases are used to link a 9-1-1 call with a location. If attributes are not present in the databases, or is inconsistent the call will still route to the PSAP but can cause the PSAP receiving the call difficulty in accurately identifying where the caller is calling from due to gaps that may be present in any one of the databases. This is especially a concern with the mobility of the general public.

In NG9-1-1 calls are routed in a similar manner to the legacy 9-1-1 system. The call is still routed through the network to a PSAP, however rather than collecting the location

and attribute information along the way the call is routed based upon the geographic location of the caller. The multiple database lookups to determine the location are essentially eliminated; however other database lookups for attribute information remain.

Caller location is validated by engaging NG9-1-1 functional elements designed to identify, store and transmit location information with the call to a PSAP. Emergency call routing and location validation occurs through a Geographic Information System (GIS) that has been aggregated into regional or state-level datasets. These functions are defined in NENA i3 Standards as Emergency Call Routing Function (ECRF) and Location Validation Function (LVF). The ECRF and LVF transactions utilize the spatial information provisioned by GIS to route calls through the NG9-1-1 Emergency Services IP Network (ESInet).

The purpose of this conceptual design is to provide a strategy for procuring a common GIS platform and management / maintenance capability for all NG9-1-1 GIS activities throughout North Carolina. In addition, this document may be used as a GIS standard for development and maintenance of PSAP GIS data. The board recognizes that implementation of the information contained in this document as a standard may be completed by a combination of PSAPs and other local agencies with authority for GIS and mapping authorities or mapping divisions.

The Board recognizes that many GIS mapping applications have already been established throughout the state. It is not the Board's intent to question or change these existing programs. Local government geospatial programs will remain the authoritative source for accurate GIS data to be used in NG9-1-1. Agencies utilizing their own "in house" standards are encouraged to modify or update these standards, if necessary, to meet or exceed the Standard. The Standard was developed to support interoperable NG9-1-1 systems, databases, call routing, location validation, and call handling and other related processes.

1.1 Background

Typically PSAPs throughout North Carolina rely on local GIS expertise and data management programs perform the day-to-day maintenance and ensure that all data used for 9-1-1 contains the most accurate information. This operation works very well since the local expertise normally has the best access to the ever-changing data attributes. As streets are added and removed, addresses are added, changed or altered the local GIS platforms are the first to ensure that a change to the GIS has occurred.

The main challenge with this approach is that GIS management and maintenance procedures are often different for each PSAP. Multiple data attributes may exist that have been created by differing processes defined locally or for specific purposes in that locality.

Thus, creating a composite dataset from local GIS data for NG9-1-1 requires consistency of attributes and geometry between local datasets.

The primary goal of this GIS conceptual design is in creating the strategic outcomes necessary for establishing a common platform for the PSAPs in North Carolina. In addition, the conceptual design is intended to provide guidance on the current standards and proposed NG9-1-1 GIS data schema that has been developed to increase the ability to resolve a PSAP based, statewide GIS dataset.

GIS plays many roles in the operation of 9-1-1. It is often used by a PSAP as a tool to review and locate a caller statically. This means that the caller identifies an address and uses GIS to visually locate the call on a map. The NC 911 Board is pursuing this conceptual design to ensure that all state PSAPs are able to utilize GIS in a tactical fashion that levels the mapping capability for the entire state.

GIS can also be used in call routing. As mentioned briefly in Section 1.0, GIS identifies the location of the call and routes the call to the correct PSAP. Along with the Emergency Services Routing Proxy (ESRP) the ECRF essentially maps the route for the call to take through the NG9-1-1 system.

GIS systems must have a standard set of attribute information available. At a minimum, most GIS systems designed for 9-1-1 offer the following features and data such as:

- A County street layer that also contains address ranges
- A County boundary layer that aligns with the PSAP borders
- Emergency Service layers with a numbering system that identifies supportive information to aid call routing and response
    - Law Enforcement boundary layer
    - Fire boundary layer
    - Emergency Medical Service (EMS) boundary layer

There have been some varying methods of implementing GIS to support NG9-1-1. Some solutions offer an interim path to ensure that all GIS operations are scaled to meet the initial ECRF capability. An interim path can be beneficial to permit the creation of accurate data in the ECRF and structure the LVF operation. Regardless of steps, the outcome desired is a location based call routing platform that uses where the call is placed. In order to route 9-1-1 calls in the NG9-1-1 system the solution must:

- Integrate with the current legacy call routing systems
- Be user friendly to manage and update

- Allow for the display of wireless, wireline, Voice over Internet Protocol (VoIP), Automatic Vehicle Location (AVL) and other potential routable location information; some of which may be undefined at this time
- Receive automatic or re-bid updates to location
- Be built on a standard industry GIS platform

NENA has already defined a basic interim path defined in the NENA interim i2 NG solution. This interim solution is capable of providing a path to fully operational ECRF where a GIS capability is not yet in place. This process constructs the call routing database via the existing MSAG data integrated with the GIS and creates the ECRF based upon the availability of data attributes at the time. Over time, this model can be expanded as GIS attributes are refined. The interim solution offers a migration path that can benefit those areas which GIS is suspect or GIS is not yet utilized to its potential.

In an NG9-1-1 call routing platform all attribute data associated with call routing and the plotting of a location on a map display must be provided in a NENA NG standard format. Presently the format for NENA NG is undergoing a revision, but the primary database components are presented in the appendix to aid in understanding what they are with respect to current GIS operations.
The ECRF capability is comprised of generally two functions. One is the routing of the call to the proper NG9-1-1 functional element for further routing and the other is to ensure that the call address is validated through the Location Validation Function (LVF). As the ECRF performs these functions the data supplied from GIS is critical to match the location with the call. Originating call network operators (often called Communications Service Providers or CSPs) are expected to verify civic address location information against the NG9-1-1 GIS data using the LVF included in the ESInet and utilize interfaces described in the ESInet and Hosted CPE conceptual design.

Additionally, 9-1-1 call routing requires that data be present in a Location Information Server (LIS). The LIS is very similar to the existing Selective Routing database that utilizes the MSAG to contain ALI information for 9-1-1. The LIS is used for management and provisioning of the database records that trigger NG9-1-1 call routing. The registered addresses of subscribers would reside in the LIS and would be triggered by the ECRF to bounce up against the MSAG validated address.

Of particular note is the operation of a Spatial Interface (SI) capability that is used to replicate the GIS layers to external databases. The ECRF / LVF provisioning uses the SI to manage and maintain the GIS data. The SI may in fact be a separate GIS system or module that ensures the NG9-1-1 interfaces are operational. The SI often is often used to allow a Quality Assurance / Quality Control (QA/QC) mechanism for NG9-1-1. NENA has defined the SI provisioning interface in Section 4.7 of NENA-STA-010.

Regardless of this migratory path the focus is on developing a GIS database solution that can ensure that all location information databases can perform the functions necessary to:

- Validate a caller location
- Identify a route to send the call to within the NG9-1-1 system
- Offer the ability to enhance the data through a database management platform
- Provide the ability to normalize GIS records as necessary

1.2 GIS Survey results

The NC 911 Board established a GIS work group tasked with establishing the baseline needed to transition the GIS data and the management of the location information used for call routing and dispatch functions.

A survey was conducted to assess the existing capabilities employed by the PSAP's and determine the availability of GIS and spatial data systems. The survey did not collect GIS sample data to determine the accuracy of information during the survey.

The resulting tables are a reflection of the GIS survey information which represents a 61% return rate on the survey, and points out areas for consideration during this conceptual design and the subsequent Request for Proposal.

As shown in the tables the existing PSAP centric GIS activity represents a robust and functional GIS capability as measured in legacy 9-1-1 terms. GIS activities at the local level have been implemented through various means. Many local systems have relied upon an enterprise system that may utilized multiple agencies to support the GIS management and maintenance process.

While the GIS capabilities are consistent from an implementation standpoint, the spatial information utilized by 9-1-1 is very inconsistent. In most cases boundaries, centerlines and address ranges are not matched with the adjacent county which can cause delay in determining the accurate location of a caller. Counties do not typically share or join the GIS system information with adjacent agencies which can lead to each county GIS system to remain an island.

Based on table 3, just shy of 1/3 of jurisdictions do in fact integrate GIS data from all neighbors. In whole, table 3 indicates there is a distinct continuum between all, some, and none.

The implementation of NG9-1-1 requires that all counties share their GIS information and spatial data to create a seamless platform that can be used for call routing, and location determination. This includes normalization of edges (edgmatching) of boundaries and streets. This is an important step in ensuring that there are no overlaps in GIS or the attribute data that it represents. So all PSAP information must be collected, stored, verified, corrected and secured in a statewide GIS system specifically designed to support NG9-1-1.

The tables below show the results of the survey and can be a valuable tool to assist potential GIS vendors in supporting the NC NG911 Board.

Next Generation 911 GIS Data Survey

For each of the following GIS datasets, please indicate whether it is maintained exclusively for PSAP/ emergency response use only, maintained and used for multiple agencies across the local government jurisdiction, or not used for PSAP / emergency response.

GIS Dataset Utility

Answer Options	This dataset in maintained exclusively for PSAP / emergency response.	This dataset is maintained for use by multiple agencies within the local government.	This dataset in not used for PSAP / emergency response.	Response Count
Street centerline data with address ranges	3 (4%)	70 (96%)	0 (0%)	73
Address points (includes structures, sub-addresses, and/or ancillary or navigation points)	2 (3%)	64 (88%)	7 (9%)	73
PSAP response boundary polygons	30 (41%)	37 (51%)	6 (8%)	73
Dispatch response boundaries for first responders	36 (49%)	32 (44%)	5 (7%)	73
Governmental unit boundaries (state, county, municipal)	1 (1%)	71 (98%)	1 (1%)	73
Cell tower locations	6 (8%)	55 (75%)	12 (17%)	73
Building footprints	1 (1%)	50 (69%)	22 (30%)	73
Parcel boundaries	0 (0%)	71 (97%)	2 (3%)	73
Landmarks	5 (7%)	49 (67%)	19 (26%)	73
Ancillary / Navigation points	8 (11%)	38 (52%)	27 (37%)	73
				Question Totals
Other (please specify)				3
			answered question	73
			skipped question	0

Table 1: Overall survey results and response

Next Generation 911 GIS Data Survey		
Which GIS data quality issues concern you the most?		
Answer Options	Response Percent	Response Count
Inaccuracies within the GIS data	43.5%	27
Lack of regular data maintenance	30.6%	19
Lack of data standardization	37.1%	23
Lack of strong workflows / quality control	24.2%	15
GIS datasets not synchronized with MSAG and ALI	33.9%	21
Lack of GIS staff resources	43.5%	27
Lack of GIS data sharing with neighboring PSAPs / jurisdictions	29.0%	18
Other (please specify)	16.1%	10
	answered question	62
	skipped question	11

Table 2: GIS quality metrics

Next Generation 911 GIS Data Survey		
Does your PSAP acquire or exchange GIS datasets with neighboring jurisdictions for use in emergency response or CAD?		
Answer Options	Response Percent	Response Count
We acquire and exchange GIS datasets with all neighboring PSAPs / jurisdictions.	32.9%	24
We acquire and exchange GIS datasets with some neighboring PSAPs / jurisdictions.	39.7%	29
We do not acquire or exchange GIS datasets with neighboring PSAPs/ jurisdictions.	27.4%	20
	answered question	73
	skipped question	0

Table 3: GIS and data sharing capability

Next Generation 911 GIS Data Survey		
Which work unit assigns NEW addresses in your jurisdiction		
Answer Options	Response Percent	Response Count
Addressing Office	37.7%	26
PSAP / 9-1-1 Center	4.3%	3
GIS Office	43.5%	30
Other (please specify)	14.5%	10
	answered question	69
	skipped question	4

Table 4: GIS process and workflow

Next Generation 911 GIS Data Survey		
Is the PSAP / 9-1-1 Center included in the workflow for assigning NEW addresses in your jurisdiction?		
Answer Options	Response Percent	Response Count
Yes	52.2%	36
No	47.8%	33
	answered question	69
	skipped question	4

Table 5: GIS addressing process

In summary, the GIS systems in operation at the PSAP today are very capable, but are disjointed. This causes a substantial amount of duplication and siloed implementations that results in a lack of operational control over a key component for NG9-1-1. The NC 911 Board must employ a strategy that integrates the GIS systems and spatial information into a common seamless system to allow call routing, location determination and dispatch.

1.3 GIS data

GIS as it relates to NG9-1-1 can be broken into two primary functions. First the ability to route calls to an appropriate PSAP based upon the location of the caller and the supplemental information gathered within the network. Second, the ability to display the call location on a common map display system regardless of where the call is received within the system.

GIS is capable for handling multiple sources of spatial information that may be in the form of structures, points or other relationship based data may enhance the GIS database. The spatial information can be beneficial in NG9-1-1 to determine elevations, points or landmarks that may be supplemental to the location when responding to an emergency.

GIS data matching can aid in situations where adjacent areas may not have a fully capable GIS to support their services. By combining that information at the outset, the GIS data sets can minimize discrepancies in the beginning rather than finding out once an incident occurs.

The ability to route calls is described in the NENA i3 Next Generation 9-1-1 standard 08-003 which defines the placement and operation of standard routing components within the network. These components are defined within the standards as “functional elements” which serve the entire NG9-1-1 network. The primary functional elements which rely on GIS attribute data are:

- Location Information Server (LIS)
- Location Database (LDB)
- GIS data store

These data storages are the primary areas where the attribute data is stored within the network. They are accessed by functions performed within the network to capture, carry and manage the attribute information through the NG9-1-1 system. These functions are:

- GIS Database Management System
- ECRF / LVF
- Spatial Interface (SI)

In order to ensure that all of the data servers and functions can operate as designed, the GIS schema must follow the standards.

GIS will be necessary to ensure that the attribute data contained in the NG9-1-1 functional elements (primarily but not limited to the ECRF) allows the routing of calls through network

without exception. GIS and the linkage to data and location is critical to the success rate of call delivery and increases the ability of call-takers, dispatchers and first responders in situational awareness about a 9-1-1 call. Layers presented above must be "normalized". Normalization can mean many things and we will discuss some of those perspectives throughout this document. For the sake of defining it here we mean that the GIS attribute data is:

- Verified through a Quality Assurance / Quality Control (QA/QC) step
- That all edges between counties have been "matched"
- That all overlaps of GIS features (points, lines, polygons) have been corrected

1.4 Current Capabilities for call routing

Existing legacy 9-1-1 systems utilize data that assists in determining the location of a call. This data has historically been tied directly to telephone company records that use the fixed address of the structure to link to the telephone number, and billing records. This method of location identification has become obsolete with the introduction and proliferation of wireless and VoIP callers. Location is not directly tied to a physical location as it was when Enhanced 9-1-1 (E9-1-1) was deployed in the early to mid-1990's.

However, some of the routing information and data associated with the current 9-1-1 system can be valid in structuring the NG9-1-1 database that will be managed, and maintained through a GIS system. Furthermore, the data can be used as attribute information in the GIS to spatially link a GIS feature with the attribute data. The result is a fully capable and functional location based system that can display a map and link to the attribute information about the location. This system can also be used to identify a location of a caller and trigger the NG9-1-1 system to route the call to the correct PSAP based upon location.

Examples of the data that can be used to develop a GIS data management structure that are used in legacy 9-1-1 include but are not limited to:

1) Valid MSAG's per county
2) Selective Routing database information
3) County based Geo-files
4) Emergency Service Zones (ESZ) and Emergency Service Numbers (ESN)
5) Street Centerlines and Address ranges
6) Additional county and regional GIS layers

During transition to NG9-1-1 call routing the databases used in the legacy 9-1-1 system will serve as a baseline to ensure that migration operates in a consistent manner as the current 9-1-1 routing system. Over time, the manner in which the data is managed and maintained through GIS will allow for a more effective and efficient update and correction method.

As transition occurs there will be areas that may require attention including:

1) Disparate GIS management agencies and systems
2) Disparate GIS data layers
3) Sharing of GIS information
4) Inconsistent attribute data
5) Reconciliation of GIS data with MSAG
6) Normalization of GIS data
7) Existing ALI management tools and services

1.5 GIS strategic planning

Over time, management of the MSAG (and in many cases, multiple MSAG's) will migrate into the combined ECRF system where the master copy of the States combined MSAG is managed through GIS. GIS can spatially link the existing tabular data used with legacy 9-1-1 with the streets and boundary information provided by a PSAP. GIS can also join with other database tools and all other systems using MSAG type data will get their updates from the ECRF system.

The process and workflow of this strategy is discussed further throughout this conceptual design. An advantage to use GIS to manage and maintain the data is that it can expedite changes to a number of records at a time. In addition GIS can dynamically alter entire geographic areas which may be useful in critical emergencies.

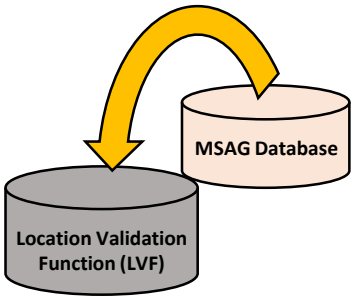

Figure 1: MSAG to LVF

The 9-1-1 authority (in this case the NC 9-1-1 Board will support the collection of the MSAG information from the PSAPs. GIS data management must employ integrated

procedures that ensure call routing data is kept current. Based upon the GIS data assessment in Section 1.3, this process is currently handled by the PSAP, and may not specifically utilize a GIS system to manage any changes to the data. The objective of this conceptual design is to replace the disparate processes with a common workflow that utilizes GIS to manage and maintain the tabular data.

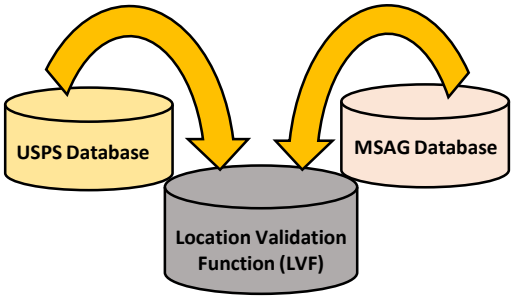

Figure 2: MSAG to LVF matched with USPS database

The MSAG and available addressing data (typically USPS Pub 28 addressing standards or other addressing authority) are combined to create a comprehensive validation system. The result is a new type of MSAG containing links to alternative location information such as “also known as” or “AKA’s”. AKA’s are not shared publically but are supportive to the information required to route calls to the correct PSAP. Discrepancies with the data and of these processes may be cleaned up with help from the GIS system or MSAG Source.

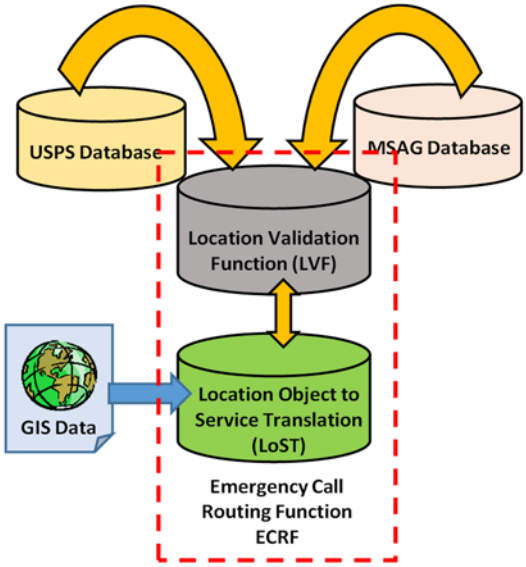

Figure 3: ECRF capability

This is the critical process which GIS information becomes part of the data management process. The ECRF has access to GIS data to help it make the routing decision.

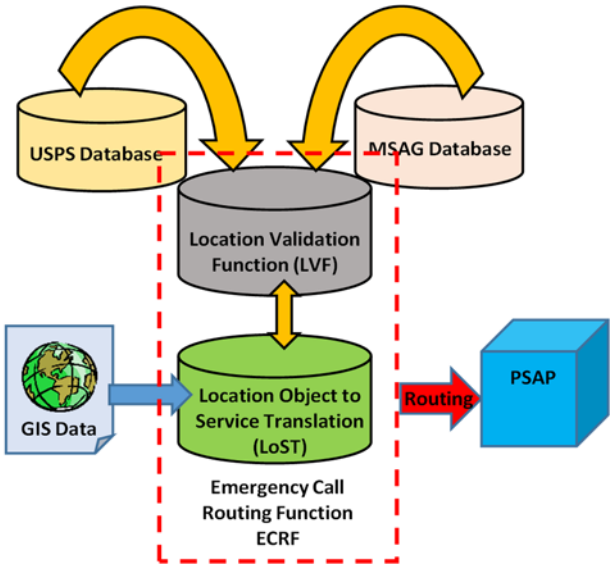

Figure 4: ECRF routing to PSAP

GIS data is managed with the combined MSAG and Postal data to support routing based on civic address and/or geocoded data (latitude & longitude).

Over time, management of the MSAG will migrate into the ECRF system where the master copy of the MSAG is managed in a spatial database. In Next Generation all other systems using MSAG type data will get their updates from the ECRF system and be managed and maintained by GIS.

For NG9-1-1 to become viable and efficient, it will be important to have correct data, updated data, and data that is seamless across the entire region, the state, the nation, and internationally.

2.0 NG9-1-1 differences from Legacy

In NG9-1-1, civic addresses will utilize the basis the CLDXF and PIDF-LO to replace ALI with location information that must match the data contained in a GIS layer. CLDXF and PIDF-LO offer the potential for more detailed address information than traditional ALI. In a transitional model all ALI records must be modified to meet the CLDXF framework. GIS is the best option for a tool to do that. CLDXF and PIDF-LO usage is known in NG9-1-1 as ***location-by-value***.

NG9-1-1 can also route based upon geodetic coordinates which typically are referred to as X,Y coordinates. Latitude and Longitude coordinates can is known as ***location-by-reference***.

2.1 NG9-1-1 data

NG9-1-1 uses spatial information and GIS data for many purposes. A key component is that the routing of calls must (at a minimum) offer the same reliable routing as the legacy 9-1-1 system. Primarily the GIS data is used for validation of locations and for determining the correct routing after the location is validated. But, GIS data can also offer greater insight into the location.

Using GIS data alone may not provide the best source of information during transition. While GIS data can provide quick results after a call has arrived at the PSAP (such as Google maps) calls cannot route using that same method. Therefore regardless of phases, stages or other NG9-1-1 implementation migration, the MSAG will be required during transition. The MSAG will eventually be replaced by the ECRF / LVF once the GIS system, MSAG and postal information have been fully integrated into a validation and routing engine specific for 9-1-1 calls. The integration of the databases can lead to better local knowledge attributes over time.

The GIS attribute information and location data is vital to ensure that the call routing platform that utilizes the LVF function to query the ECRF via the LoST protocol to determine the address information. This establishes the URI of where to send the call. GIS data must follow the NENA standard to allow for NG9-1-1 call routing platforms to interoperate across multiple counties, regions and states.

2.2 Assumptions

In NG9-1-1 the routing of calls is driven by location based geographic data derived by the calling party. This is a migration from the current routing capability that is provided by the primary local exchange carrier that handles the geography of the PSAP.

In the legacy 9-1-1 operation the PSAPs are responsible for maintaining the data and information that the LEC uses to route calls. In NG9-1-1 this process will no longer be handled locally, but will require a statewide solution based on local coordination.

This means that most of the GIS functions must meet a baseline set of requirements that include but are not limited to:

- Compliance with attribution and coordinate system (e.g. WGS84)
- May require some transformation for routing usage
- Will likely include some level of aggregation for a statewide solution.

The exchange of data in particular to how location based information us used to route calls is based upon IETF defined protocols. The two primary protocols are:

- HELD (IETF RFC 5985)
- LoST (IETF RFC 5222)

2.3 Spatial Interface

The NC 911 Board recognizes the need for a Spatial Interface (SI) to allow the local GIS participants to manage the replication of GIS data throughout the NG9-1-1 call routing functional elements. This SI operation will also be responsible for performing QA/QC measures on the 9-1-1 GIS data which may include MSAG to GIS synchronization during transition. This is explained in the potential interworking framework Section 2.5 and described in the sample call routing Section 3.0.

The SI described in this conceptual design is intended to be a single shared SI that all PSAPs will utilize to replicate the GIS data and attribute information to a single platform. This strategy places the authority for normalizing the GIS data into a common platform with the GIS vendor supplying the SI service. As an SI service the vendor will be responsible for ensuring that all GIS data provided:

- Meets the standard for NG9-1-1 functional elements ECRF and LVF
- QA/QC of all data prior to injection into the live system
- Error and discrepancy reporting back to the local PSAP authority for resolution

2.4 Database framework

While NG9-1-1 GIS capabilities minimize some of the multiple databases that are required for legacy 9-1-1, the information must be available for NG9-1-1. For this reason, there are two other primary databases that are used to provide information to the ECRF.

The Location Information Server (LIS) is the access providers' responsibility. Such as the telecommunication provider within a service area that handles the conversion from ALI. This includes small ISP's that may not have their own LIS but utilize a service from a larger provider. Eventually within the NG9-1-1 routing capability; a LIS will be used to route calls.

The expected additional data sources (call, location, caller) may not happen immediately once a LIS is deployed.

In NG9-1-1 the Call Information Database (CIDB) offers a method for gaining what would be ALI data spill in legacy 9-1-1.

- ALI vs. LIS
    - ALI: Automatic Location Identification
        - Limited size and content
        - A "de-normalized" data structure with data about the caller, location, and call characteristics
        - Generally operated by an agency or by a 3rd party on behalf of the agency
- LIS: Location Information Server
    - Based on HELD protocol to discover "locations" on a network.
        - Limited to location only
        - Envisioned to be provided by the access provider and/or service provider

2.5 Potential Interworking framework

The following table represents a comparison of where the information regarding a location. Data may not be contained in one single database (as shown) but may be manipulated and maintained by the GIS system.

Data Field	Variables	Description
NPA	330	*Area code*
NXX	555	*NXX*
Calling Number	1212	*Extension*
Class of Service	RES	*Residential, Business, etc*
Date	6062016	*Date of call*
Time (24hr)	1645	*Time*
Customer name	Bad Bunnies Eggs and Sweets	*Customer name if available*
House Number	2315	*Address info*
House Number Suffix	A	*Address info*
Main NPA	330	*Area code - if a MLTS may be different*
Main Number	555	*NXX - if a MLTS may be different*
Main Extension	1212	*Extension - if a MLTS may be different*
Prefix Directional	S	*Address info*
Street Name	Ashberry	*Address info*
Street Suffix	LN	*Address info*
Location	Rabbitville Plaza	*Address info*
ESN	12345	*Emergency Service Number (not generally used in NG9-1-1)*
State	NC	*Address info*
Community Name	Easter Bunny	*Address info*
Company ID1	Frontier	*Primary Telco provider*
Law Info 1	Easter Bunny PD	*Police dispatch (primary)*
Fire Info 1	Peep County FD	*Fire dispatch (primary)*
EMS Info 1	Rabbitville EMS	*EMS dispatch (primary)*

CIDB - Call Information Database
LIS - Location Information Server
Additional Caller info - Supplemental to call
Additional Location data - Supportive to Dispatch

Table 6: Sample configuration of Legacy to NG9-1-1 data

The table represents the common information that is received at a PSAP and how that data will be reflected in NG9-1-1.

3.0 Sample call routing

The following diagram represents the sample call routing while utilizing location based call routing. This is representative of how calls will flow through the NG9-1-1 routing engine.

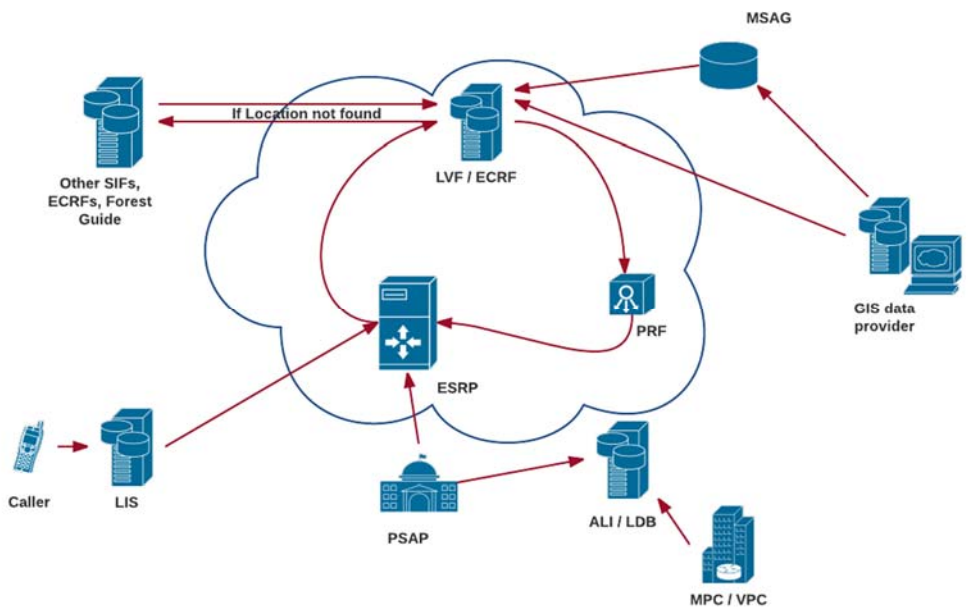

Figure 5: NG9-1-1 call routing engine

Once calls are into the ECRF they utilize one of 2 methods for routing:

The first uses the geodetic location (X, Y coordinates) to compare to the Polygon layer representing PSAPs to route to. The second uses the civic location geocoded compared to the Polygon layer representing PSAPs to route to.

Calls that enter the NG9-1-1 system utilize a Service URN to reference the type of service of the call and to provide instructions that the ECRF / LVF will use to determine routing to a PSAP.

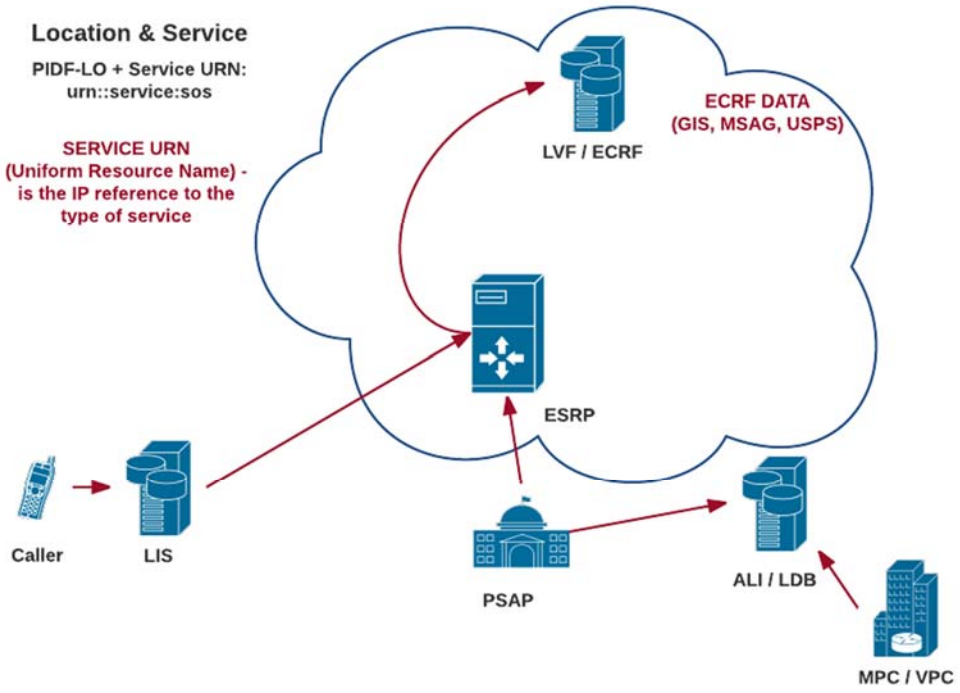

Figure 6: Calls coming into the NG9-1-1 system

The ECRF establishes the PSAP URI to send the call to based upon the location information contained in the call, and validated with the ECRF / LVF. The PSAP URI also utilizes the PRF and ESRP to finalize the route based upon the instructions contained within the system.

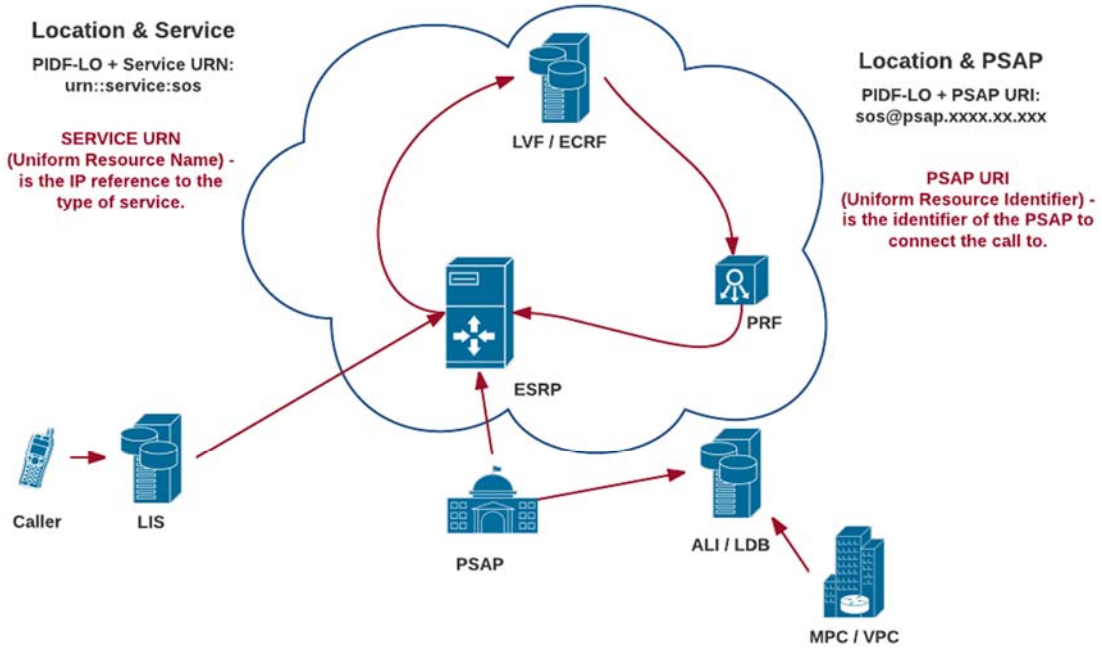

Figure 7: Calls going out of to a PSAP

4.0 GIS data schema

Along with the items described in section 1, the NC 911 Board will follow the NENA standard recommendations for a statewide GIS data schema. At this time, the *NENA Standard for NG9-1-1 GIS Data Model*[1] *is in the review process*, however the features of the standard are presented throughout this document as a reference to guide the development of a state wide schema and guide. Several NG9-1-1 capable systems have been implemented and almost all follow this current standard, or are using the framework to guide the development of a GIS platform. The States of Indiana, Vermont, Michigan, Tennessee, Alabama, and Washington DC are using the same standard as a reference guide as they transition into solely routing through an ECRF.

The GIS vendor will be required to support the most current version of the standard and verify that their solution will continue to meet the standard.

4.1 Initial NG9-1-1 database information

At the present time, the initial database information to allow for transition into a location based call routing system are listed below. The GIS management and maintenance activity will focus on developing the standard information below from existing datasets and carry forward with adding further spatial attributes that may not be available in the present GIS database.

The forthcoming NENA NG9-1-1 data standard has categorized these layers as Required, Strongly Recommended, or Recommended. The NC 911 Board wishes to adhere to the standard as closely as possible.

The NG9-1-1 GIS / database standard outlines the layers that are ***required, strongly recommended and recommended*** to support location validation, geospatial call routing, map viewing and other related functions for 9-1-1 service. Layers that are identified as required and/or strongly recommended are typically used to validate location and route 9-1-1 calls to a correct PSAP. Required and Strongly Recommended layers are provisioned within the Emergency Call Routing Function (ECRF) and the Location Validation Function (LVF) to provide the foundation for location based routing of 9-1-1

[1] *The NENA Standard for NG9 1 1 GIS Data Model presented throughout this section is currently still in DRAFT form. While much of the GIS data schema and its operation are presently in operation in several locations there may be some modifications to the structure of the standard before it is released for general use. The intent of including this structure is to link the objectives of this conceptual design with a common standards based strategy for NG9-1-1 GIS data.*

calls. The recommended layer designation applies to public safety mapping applications only. The Recommended layers will not be provisioned into the LVF or the ECRF, but are required for PSAP map display and 9-1-1 call taking. However, public safety mapping applications may utilize any GIS data or layer that is provided in the implementation.

The GIS data implemented to support NG9-1-1 must remain backwards compatible with E9-1-1 GIS and mapping. The NG9-1-1 system relies upon standardized, accurate and up-to-date GIS data and spatial attributes that can be related within a GIS system that define a location. Spatial attributes and information can be linked with a location to allow greater context about a particular location.

NG9-1-1 utilizes a location conveyance format, called the "Presence Information Data Format Location Object" or PIDF-LO. PIDF-LO was defined in the Internet Engineering Task Force (IETF) Request for Comments (RFC) 4119 and extended by RFC 5139 and RFC 6848. PIDF-LO is defined as an international format for location. The United States Civic Location Data Exchange Format (CLDXF) Standard (NENA-STA-004) is the United States profile of the IETF PIDF-LO civic address standard.

The relationship between the NENA standard and CLDXF is straightforward. The GIS layers and the data required to route 9-1-1 calls conform to CLDXF for the representation of addresses.

The structure presented in the NG9-1-1 data standard and the categories is shown below:

a. Required database information
    i. Road Centerline Requirements
    ii. PSAP Boundary Requirements
    iii. Emergency Service Boundary Requirements
b. Strongly Recommended database information
    i. Street Alias
    ii. Site Structure / Address point
    iii. Landmark point
    iv. Landmark Alias
    v. State polygon
        1. The North Carolina Geodetic Survey maintains the state boundary GIS data layer, and works with local governments to maintain a statewide county boundary dataset. These datasets are updated on "as needed" basis and will not need to be duplicated by the selected GIS vendor.
    vi. Counties polygon

vii. Incorporated Municipality polygon
    1. The North Carolina Secretary of State's Office and NC DOT are in the process of assembling an authoritative GIS data set for municipal boundaries. These datasets will be updated based on digital submissions from municipal governments as annexations are filed with the Secretary of State's office and will not need to be duplicated by the selected GIS vendor.

viii. Unincorporated Community polygon
    1. This layer is listed in STA-006. Inserted for completeness, but does not exist as a statewide dataset. It may be maintained by some local governments.

ix. Neighborhood Community polygon

c. Recommended database information
    i. Railroad lines
    ii. Hydrology lines
    iii. Hydrology polygons
    iv. Cell sites points
    v. Mile marker points

In Appendix B of this document (Section 12) provides a table of the entire NG9-1-1 data structure identified by NENA. The table is structured to provide only category and whether the data field is Mandatory, Conditional or Optional (M,C,O). This is the initial table structure that may allow for implementation to a location based routing system.

4.2 Standards assessment

The NENA Standard for NG9-1-1 GIS Data Model is currently being developed. Some of the material presented here has been under review by the work group and is not considered final.

The GIS data schema is presented as a framework for the future and represents a "snapshot in time" that may change as the final schema evaluated. The objective in presenting the data structure is to provide a link to the direction of the National GIS standards bodies and NENA while preparing the NC 911 Board and the State of North Carolina for the changes that are going to be required.

The initial recommendation for this GIS conceptual design is to review the schema and determine a path to migrate to the NENA Standard for NG9-1-1 GIS Data Model when the standard becomes final. The initial recommendation may be considered the bare minimum that counties must achieve before becoming fully NG9-1-1 ready.

4.3 Data Format

The data format for the NC NG9-1-1 state-level GIS database will be a shapefile or geodatabase

4.4 Field Names

Each attribute in the standard is identified by a field name. Field names have been standardized on ten characters or less to enable the ability to convert data from various sources including shapefiles. Field names utilized by local agencies or PSAPs may be customized from the required list for submission to the state-level GIS database. A detailed description of how the local fields correlate to the required field names must be provided in the Attribute Description field (section 5.1.2.2) of Federal Geographic Data Committee (FGDC) compliant metadata for each data layer.

4.5 Attribute Tables and Descriptions

Each data layer is described in this document with a table listing the attributes followed by a more detailed attribute description. The tables are formatted with the following information:

Field	Recommendation for the attribute field name. These recommended names were selected to be ten characters or less so the full field name would be retained if the data is ever converted to shapefile format.
XML Element	Tag used in the NENA Standard to transfer the data between systems.
Non-XML Tag	Tag used when native software restricts field names to 10 characters or less. Recommended field name use.
M/C/O	Whether populating the attribute is mandatory, conditional or optional
Type	Required attribute type.
Field Width	Maximum field width.

Table 8: NENA standard – Fields and Attribute tables

4.6 Mandatory/Conditional/Optional

In the NENA Standard, attributes are tagged as Mandatory (M), Conditional (C), or Optional (O). That convention has been kept throughout this document.

Mandatory- Implies the data field must be populated.

Conditional- Implies that if an attribute value exists for a given feature, it must be populated. If no value exists for a given feature, the data field is left blank unless other guidance is given.

Optional- Implies the data field may or may not be populated

4.7 Attribute Types

Attribute types are listed as per the NENA Standard. The types are defined as:

A Alphanumeric (any combination of upper and lower case letters from A to Z and/or any number from 0 to 9 or special characters). Example: Text fields in ESRI geodatabase feature classes and shapefiles.

D Date and time. The field type shall be specifically chosen for storing date and time data. Example: Date fields in ESRI geodatabase feature classes and shapefiles. – Note: NENA requires the ISO 8601 date/time format with time zone information. Many GIS applications cannot easily produce this particular format. Local data stewards shall store date attributes in a more common format, and the attributes will be converted in the state-level dataset –

N Numeric (consisting of whole numbers only) Example: In ESRI geodatabase feature classes and shapefiles, these shall be Short Integer or Long Integer fields. Note that address number fields must be Long Integer fields.

F Floating (decimal). Example: In ESRI geodatabase feature classes or shape files, these shall be numeric values with fractional values within specific range

4.8 eXtensible Markup Language (XML) Element Tags

NENA began using Extensible Markup Language (XML) as a method to exchange and share data for all 9-1-1 activities in 2006. XML is used for many IP related transactions where data and information must be shared among agencies and between machines

performing NG9-1-1 functions. The flexibility of XML allows for GIS data and spatial attribute information to be used for other needs and services beyond public safety.

Utilizing XML will allow the NC NG911 Board to ensure that local PSAP data can be aggregated, provisioned, shared, and used among a wide variety of databases, applications, and organizations.

XML tags are case sensitive; however, the acceptable Domain of Values provided in the database tables must be strictly adhered to.

XML is used as the data format because:

- Different entities can use different data field names and the data can still be exchanged and be interoperable.
- XML protects content producers and content consumers from changes in data formats and naming conventions.
- Data field order is unimportant.
- Allows attribute data to be loaded into many diverse systems by only loading the XML tagged data required for the application(s).
- Missing or nonexistent data fields do not hinder the exchange of data.
- Extra data fields do not hinder the exchange of data.
- XML is extensible – users can add other information for specific purposes.

4.9 Non-XML Element Tags

Non-XML Element tags are recommended for use when native software restricts field names to 10 characters or less, and/or when XML tagging is not supported in data exports or transfers.

4.10 Coordinate Reference System and Datum

GIS content standards developed by North Carolina state and local governments are referenced to state plane. The translation from State Plane coordinates will be responsibility of the GIS vendor as part of the aggregation process. Discrepancies between the coordinate translations will be identified and documented by the GIS vendor prior to correction to ensure that the coordinate system is universal.

While local GIS data may be kept in any projection desired, prior to loading the data into the Emergency Call Routing Function (ECRF) or the Location Validation Function (LVF) the data must be in the following projection:

EPSG:4326 WGS 84 / Latlong	
Projection:	Geographic, Plate Carrée, Equidistant Cylindrical, Equirectangular
Latitude of the origin:	0°
Longitude of the origin:	0°
Scaling factor:	1
False eastings:	0°
False northings:	0°
Ellipsoid:	WGS84
Horizontal Datum:	WGS84
Vertical Datum:	WGS84 Geoid, which is equivalent to Local Mean Sea Level (MSL)
Units:	decimal degrees
Global extent:	-180, -90, 180, 90

Table 9: Coordinate and Reference system information

4.11 Positional Accuracy

Map accuracy is the degree to which any given feature(s) on a map conforms to its true position on the ground. The reported positional accuracy value of a map is the cumulative result of all uncertainties, including, but not limited to, those introduced by errors in original base maps or aerial photography, physical media distortion, photogrammetric compilations errors, GPS differential correction errors, and data production methodology.

The mixing of different sources of digital map data of widely divergent scales into a common database should be avoided. This is because the positional accuracy of the aggregate database would be considered to be no better than that of the smallest scale or the least accurate source. If such mixing should be necessary; however, documentation to that effect should be included in the Meta Data.

Minimum- At a minimum, maps created for the use in emergency services should meet the following positional accuracy:

Positional Tolerance: 5 meters or 16.5 feet
Target Map Scale: 1:2000

5.0 GIS data provisioning and management process

Per the items discussed in Section 1 and 2; a method for establishing a GIS database management system with the ability to provide access to, or the support of GIS data normalization is going to be necessary per NENA MSAG-GIS data integration. (NENA 71-501). Where this GIS data and normalization function is located can be varied. In general the GIS data management system includes:

- The process of maintaining the NG9-1-1 routing database and applying updates to the ECRF
- The collection and logging GIS discrepancies
- The delegation of discrepancy error resolution to the PSAP
- Maintaining addressing standards as required by NENA and the State
- Implementing a flexible / scalable system
- Allowing the interim maintenance activities necessary during transition (MSAG, SOI, etc)

Expected Workflow for provisioning all GIS data to ECRF:

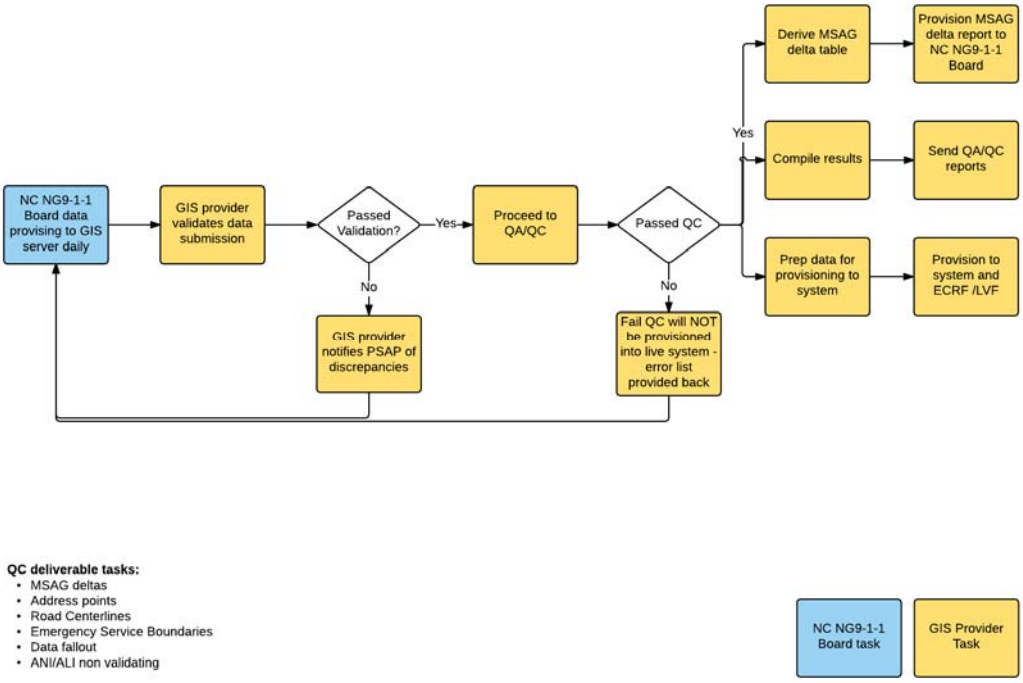

Figure 7: Workflow process diagram for provisioning data to ECRF

5.1 GIS normalization

The NC 911 Board requires GIS data normalization services, GIS database management and maintenance and Transition support to ensure that they geo-based call routing capability meets the NENA i3 and NG9-1-1 standards (The draft NENA GIS and Data Model Standard being referred to are listed in the appendix Section 13).

The GIS data requires normalization with the preferred GIS data schema prior to replication to the ECRF. The GIS vendor will provide assistance to this phase by establishing the baseline schema. The NC 911 Board along with the vendor will determine the most appropriate strategy for the schema and facilitate the gathering of all GIS data from the PSAPs with the GIS vendor. The GIS vendor will perform a validation step on all GIS data to ensure that all GIS data provided follows the schema and that the data can be used to transition into an NG9-1-1 system. The normalization will follow a workflow similar to the one below.

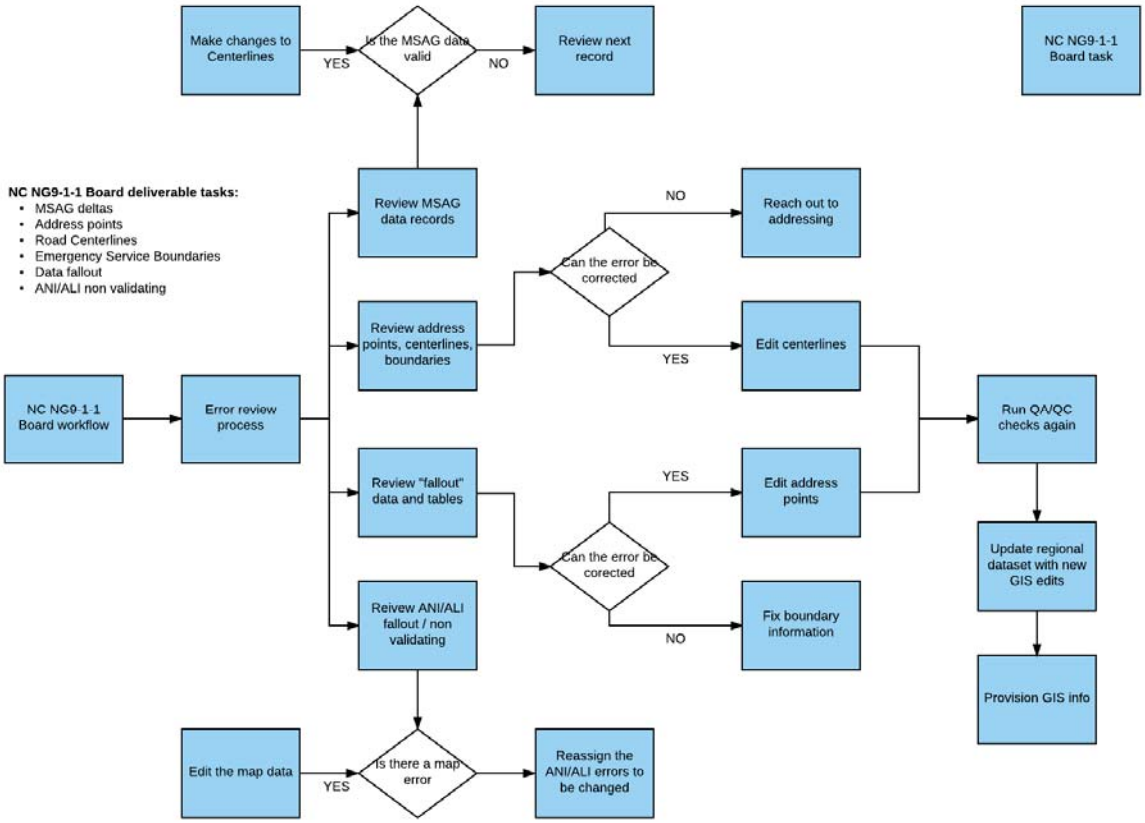

Figure 8: Workflow process diagram for GIS data normalization

During normalization, the GIS vendor will ensure that the data passes the QA/QC for meeting the GIS schema. This workflow will continue each time that GIS data is modified by a PSAP. The GIS vendor will identify all discrepancies and follow the discrepancy workflow for error resolution. GIS normalization will review and report on the following, at a minimum:

- Missing data layers.
- Missing attribute information.
- Standardization of GIS data attributes in adherence to relevant national standards, both centerline and site/structure location points following the FGDC-STD-016-2011, NENA GIS Data Model, NENA Site Structure Address Point.
- Synchronization of GIS data with MSAG and ALI (NENA 71-501 v1).
- Address range parity in centerline, as well as relating to site/structure location points and centerline.
- Duplicate address ranges.
- Direction and flow errors.
- Gaps and overlaps in PSAP and service boundaries and edge matching.
- Centerline breaks at intersections and boundaries.

The GIS vendor will utilize a discrepancy process that ensures timely and accurate error resolution of GIS data. GIS data that passes the normalization stage will be provisioned to the ECRF. GIS data that does not pass normalization will be pushed back to the PSAP for error resolution. Discrepancy logs and reports will be delivered to the NC 911 Board and the PSAP that identify the error and potential correction activities required to ensure that GIS data can be validated and normalized.

The State of North Carolina has begun to use a program to assist in the aggregation of authoritative GIS data sets. The AddressNC program is working with the local agencies to develop the GIS data layers in accordance with the NG9-1-1 schema. The GIS vendor and AddressNC will work in conjunction during the normalization process and during the discrepancy process. AddressNC may also be involved in supporting the correction of GIS data with the PSAPs that may not be able to correct data.

5.2 Data Layers

The GIS data layers listed in this section and further described in the appendix will be utilized for provisioning of the LVF and ECRF. Following the NENA standard ensures that the ability to route 9-1-1 based on location and the ability to share GIS information across the state, regions and adjacent states is possible. The GIS data layers presented comprise the primary foundation for 9-1-1. PSAPs may have additional layers used for local purposes but they are not generally required to create the GIS routing platform.

Although the tables list standardized field names, they are not necessary for provisioning an ECR / LVF. The PSAP or local GIS authority provide a name in the "Field" for what serves their purpose.

However, the data field's XML element tags, associated attribute data, formats, data types and Data Domain values, should strictly adhere to the attribute descriptions provided in the tables below. The XML element tags, or their Non-XML Tag equivalents, are required when sharing this information and when provisioning the data to operate the ECRF / LVF.

The following GIS data layers are required or strongly recommended for NG9-1-1 to function:

Required
The layers below are the minimum layers required to serve LVF and ECRF purposes.

- Road Centerline
- PSAP Boundary
- Emergency Services Boundary (Fire, law, EMS)

Strongly Recommended:
To further refine the required GIS data, and provide even more accurate location validation and call routing, the following layers can be provisioned to the ECRF and LVF.

- Road Name Alias Table
- Site/Structure Address Points*
- State Boundary
- County Boundary
- Incorporated Municipal Boundary

* It is strongly recommended that PSAPs either develop their Site/Structure Address Point data layer or engage with the State to have the Site/Structure information created for NG9-1-1 functionality.

5.2.1 Polygon Boundaries

Polygon boundaries that are required for 9-1-1 include the following, derived from a map of ESNs:

- Public Safety Answering Point Boundaries – non-overlapping boundaries in i3- compatible format for PSAPs.
- Fire service agency boundaries – non-overlapping boundaries in i3- compatible format for fire departments.
- Law enforcement service agency boundaries – non-overlapping boundaries in i3- compatible format for all local, regional, and state law enforcement agencies (police and sheriff departments).
- Emergency Medical Services agency boundaries – non-overlapping boundaries in i3- compatible format for all emergency medical services.

The State of North Carolina will also provide (in order to support QA/QC and normalization) as required:

- MSAG community boundaries, within which number/street name are unique
- Authoritative municipal and state boundaries.

As mentioned earlier, the GIS data must not contain gaps in any layers. Centerlines must be snapped at intersections, and boundaries must not overlap or have gaps. Gaps that are uncovered must be addressed by the GIS vendor in coordination with the local GIS agency. If the local GIS agency cannot provide an update or correction the GIS vendor will manage the maintenance and correction of those gaps.

5.2.2 Centerlines

A complete street centerline file that covers the entire State of North Carolina will be provided. This file will be comprised of the centerlines with an address ranges, street names and alias street names. Additional attributes required for NENA i3 call routing and coordinates will also be introduced as required with the centerlines. Centerlines will be split along polygon intersections to ensure that the appropriate address ranges are consistent on both sides of the split.

NC DOT is considering implementing a snap point database that will anchor geometry intersections, assigned names, and address ranges. The snap point concept in their database would also be able to accommodate other boundary breaks.

5.2.3 Other Spatial Data

The State of North Carolina will provide additional data maintenance as required but only for those layers and spatial information used to enhance call routing, and location determination for 9-1-1. The data used with the ECRF is designed to be the source of all GIS data for the State. As such, the ECRF information and data used at that stage will

be the baseline for all PSAPs. In many cases, the Computer Aided Dispatch mapping systems can allow for additional spatial data that is not included in the ECRF. The PSAP CAD vendor must also utilize the authoritative source for GIS data (the ECRF) to maintain any GIS that is utilized in their CAD system. Initially, the attribute information contained in CAD is not necessary for the operation of NG9-1-1. However, during transition to NG9-1-1 the Spatial Interface is designed to support CAD mapping update in accordance with NG9-1-1.

All GIS data associated with call routing and plotting will be provided in a NENA NG9-1-1 standard format. Originating call network operators will be expected to verify civic address location information against the NG9-1-1 GIS data using the ECRF/LVF.

The NC 911 Board will serve as the 9-1-1 Authority and insure all GIS data elements required by the NG9-1-1 system are provisioned in the system. In addition coordination will include the ability to arrange appropriate automated procedures for exchanging GIS data, system performance data, and for resolving detected errors by either party.

- The NG9-1-1 system will use and or import GIS data developed and maintained by the State of North Carolina.
- All data integrity, functionality and appearance will be transferred to the PSAP call taking positions which may include any CAD interface that may be used.
- Local agencies must provide the updates to the GIS data to the GIS management system on a daily basis.
- The Map display data will be dynamically updated within a 24 hour period at every call-taker position either automatically or manually.
- Any scheduled update will have the capability of being supported by the system administrator(s) and must have the capability of being placed in a test environment before system-wide application.
- The GIS vendor will be able to test, and then apply updates to the operating ECRF by a secure and reliable method that does not create operational problems.
- All call-taking positions will include a map display that is integrated with the call-handling software.
- All calls that have location coordinate information (AVL, wireline, wireless, VoIP) will be displayed on the map.
- Call-Takers will be able to search, at a minimum, based on address, landmarks, intersections, and geographic coordinates and “locations” identified within the CAD (specific to an address/location).
- The map display will allow the call-taker to zoom in and out, pan, and search.
- The map display will have all general map tool functionality including but not limited to~~o~~; layer legend(s) display, an Identify tool, measuring tools for line and area, manually drawn area selections on at a minimum of address points, search on

addresses with a line or polygon buffer selection with option to define buffer distance, and latitude and longitude searches that auto translates any of the supported ESRI supported formats.

5.3 Preferred Data Exchange Formats

The NENA standard references that the preferred data exchange will utilize the Environmental System Research Institute's (ESRI) Structured Query Language (SQL) Spatial Database Engine (SDE) or geodatabase formats. Typically shapefiles are used as the method to exchange GIS layers and data.

The State of North Carolina has not standardized on ESRI. An open source format to allow the merging and compilation of multiple data exchange formats is necessary.

5.4 GIS Data Updates

The data used by the Emergency Call Routing Function (ECRF) must remain current with the information about each PSAP area. ECRF information will require daily review and update to ensure calls are routing properly. Local agencies must upload their information to the GIS data repository on a daily basis.

Local agencies must provide daily updates of their datasets to the GIS vendor for a QA/QC process before the data is provided to the ECRF to ensure that the spatial information remains consistent across the state. The GIS vendor will assist in validating that data updates are being produced according to the specified schedule.

As described in Section 5, the update process and handling of data / GIS discrepancies must follow an organized and structured process. NENA standards for discrepancy handling are utilized to ensure that updates to all data functions are completed according to the workflow.

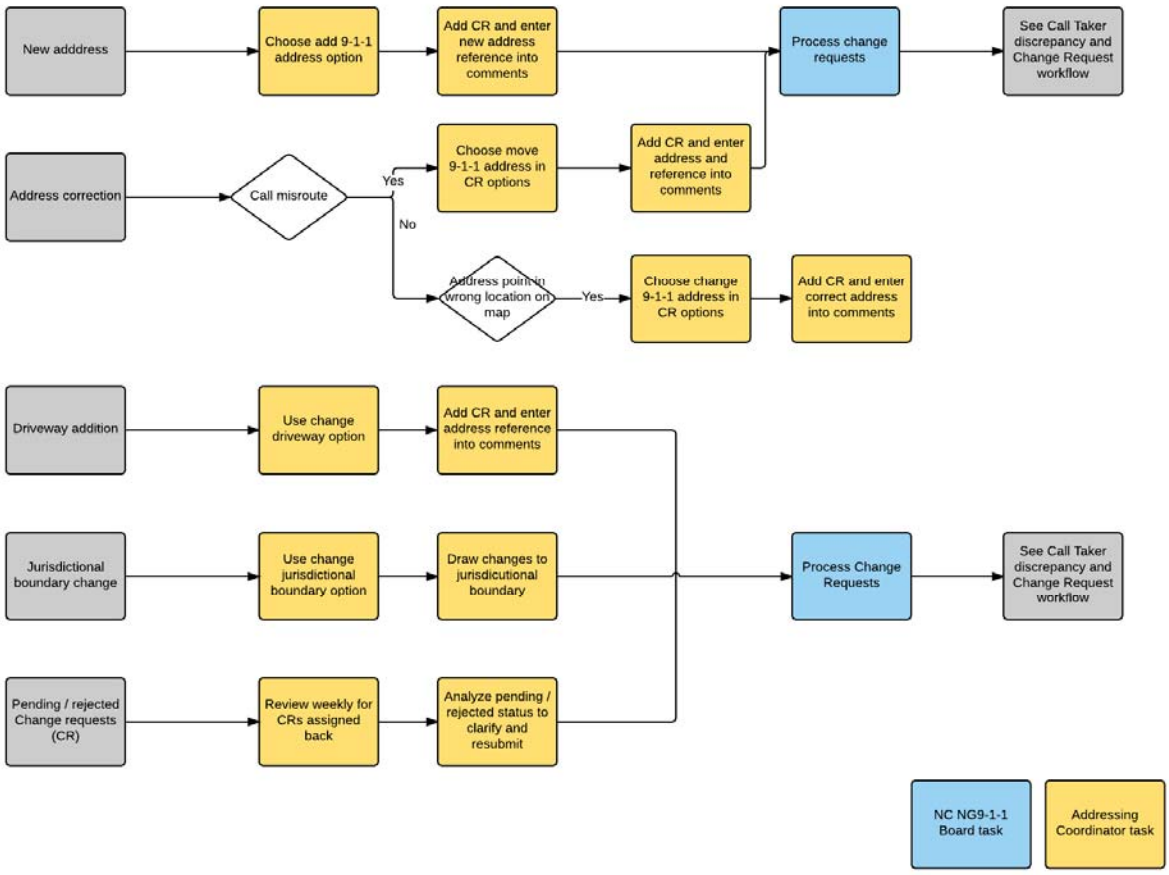

Figure 9: Workflow process diagram for GIS data updates

5.5 QA/QC Testing

The data supplied to the ECRF must be validated. This review by the GIS vendor may result in the logging and reporting of discrepancies found during the QA/QC process. Once the testing is validated, the approved updates may be applied. The call routing system vendor will perform periodic database audits to identify problems and errors, such as gaps, overlaps or number range conflicts, which if encountered, will be referred back to the State of North Carolina for resolution.

6.0 GIS and data discrepancies

GIS is the primary tool that allows management of the call routing information and data associated with NG9-1-1. The ECRF will contain the most accurate location based information that is used to route 9-1-1 calls and provide an accurate location to a GIS or mapping system. Therefore it is important that all discrepancies are handled in a workflow that allows corrections to be applied regularly.

The current legacy databases are shown next to the replacement in NG9-1-1.

Legacy 9-1-1	NG9-1-1
ALI	LIS / LDB
MSAG and SRDB	LVF / ECRF

Table 10: Legacy to NG9-1-1 systems

NG9-1-1 capable databases require that reference data such as the MSAG or even United States Postal address information can be reconciled with the data prior to replication to the ECRF. The GIS vendor will provide assistance during the reconciliation process by completing a compilation process which combines the GIS data sources and scrubs for errors. Any discrepancies resulting from normalization and the QA/QC process must be resolved to ensure calls are always routing with the most current data. Local PSAPs also play a role in the error resolution since they normally have the most current land base information.

Therefore, discrepancies may occur in many more forms than the typical address that is seen today. No Record Found (NRF) may become a thing of the past in many cases, but the discrepancies may grow due to the potential of the many new forms of data such as:

- Newly added or changed streets, renaming of streets, etc.
- Newly added or changed addresses, address ranges, landmarks and points
- Newly added or changed Boundaries
- Additional Spatial information and supplemental or supportive information
- Legacy to NG migration information

6.1 Discrepancy handling

The discrepancy process will follow NENA standards for managing and maintaining the location information as identified in the NENA GIS Data Collection and Maintenance Standards (02-014), and the NENA Standard for Standard for Reporting and Resolving ANI/ALI Discrepancies and No Records Found for Wireline, Wireless and VoIP Technologies (02-015).

GIS discrepancies must be handled in coordination with the 9-1-1 authority policies for the system. This means that only one GIS management function shall be utilized so that the ECRF/LVF capabilities remain consistent. In general a GIS discrepancy must include a copy of map the call takers are looking at and that a log of any and all discrepancies be captured and that said log be accessible by a system administrator(s) through the system's reporting feature. The Network Management and Assistance Center (NMAC) will be notified of all discrepancies and follow up on the correction and elimination of the discrepancy.

Discrepancies found by the GIS vendor will be referred back to the local PSAP where they occur. Discrepancy resolution will be the responsibility of the PSAP to be completed on the attribute data and MSAG and GIS information separately in most cases. In order to correct the legacy 9-1-1 data many counties also need to engage their ALI management tool if one is used during the resolution process

The GIS vendor must provide the structure and error reports to the PSAP so that it is clearly understood what type of error has occurred and what the anticipated correction may be. Once the discrepancy is corrected the local PSAP authority will upload the corrected files through the SI for the reconciliation process to occur again.

Only after all discrepancies have been cleared and validated by the GIS vendor will the GIS data be replicated to the live call routing system.

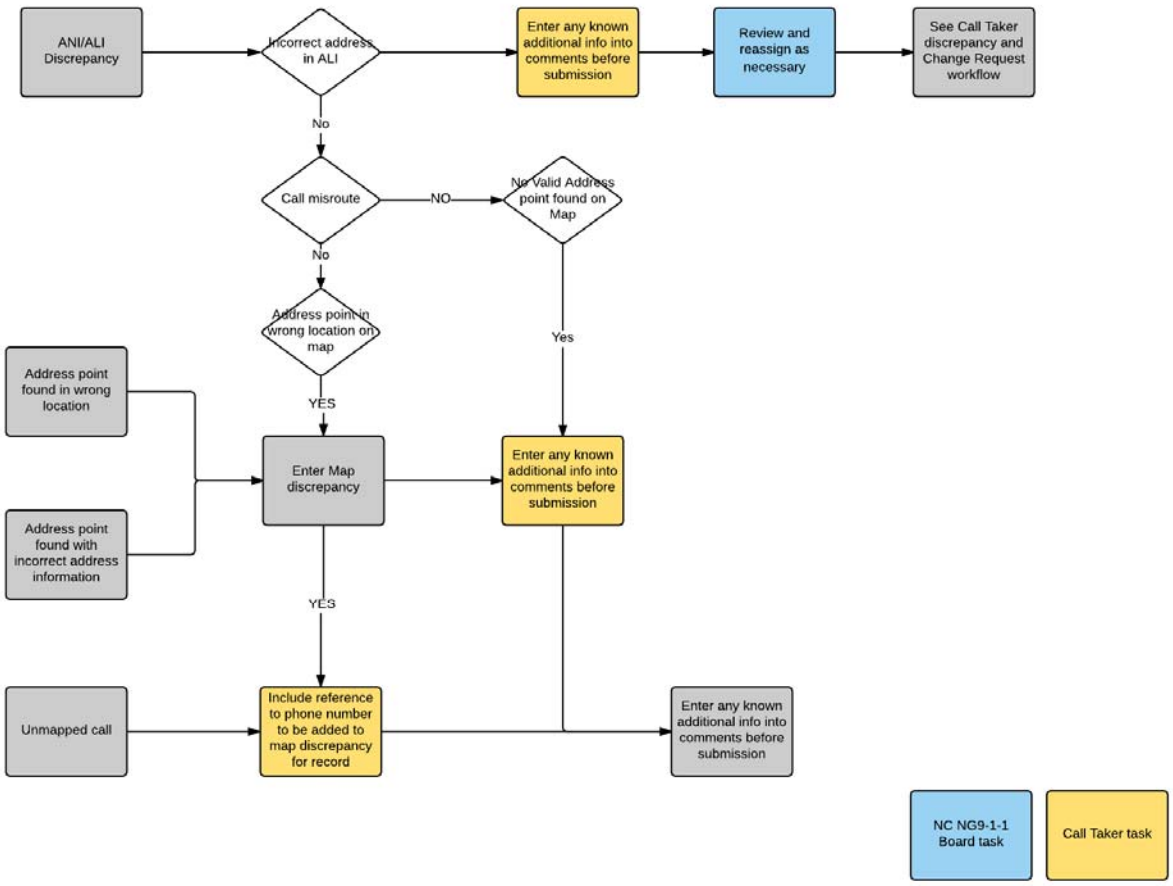

Figure 10: Sample Workflow process diagram for discrepancy resolution step 1

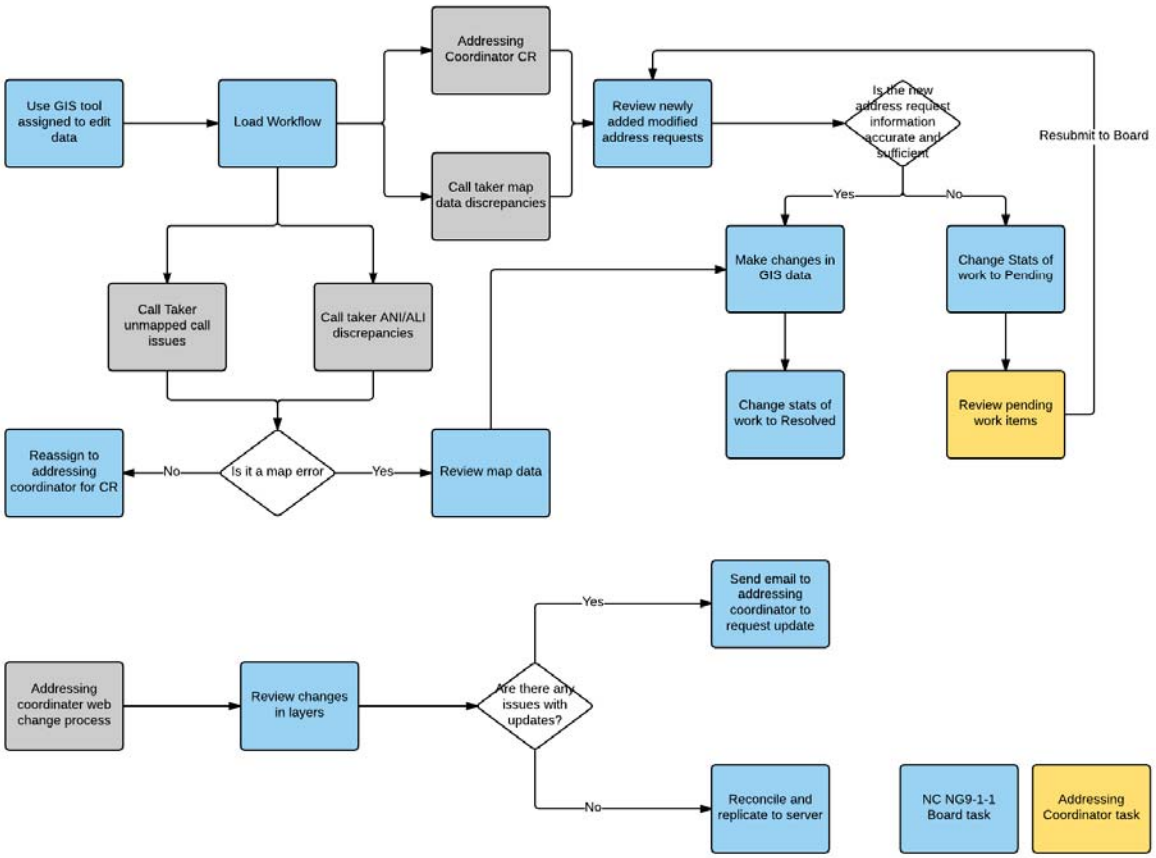

Figure 11: Sample Workflow process diagram for discrepancy resolution step 2

7.0 Appendix A

7.1 Required files

Street Centerlines

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Road Centerline NENA Globally Unique ID	RCL_NGUID	M	A	100
Left Address Number Prefix	AdNumPre_L	C	A	15
Right Address Number Prefix	AdNumPre_R	C	A	15
Left FROM Address	FromAddr_L	M	N	6
Left TO Address	ToAddr_L	M	N	6
Right FROM Address	FromAddr_R	M	N	6
Right TO Address	ToAddr_R	M	N	6
Parity Left	Parity_L	M	A	1
Parity Right	Parity_R	M	A	1
Street Name Pre Modifier	St_PreMod	C	A	15
Street Name Pre Directional	St_PreDir	C	A	9
Street Name Pre Type	St_PreTyp	C	A	25
Street Name Pre Type Separator	St_PreSep	C	A	20
Street Name	StreetName	M	A	60
Street Name Post Type	St_PosTyp	C	A	15
Street Name Post Directional	St_PosDir	C	A	9
Street Name Post Modifier	St_PosMod	C	A	25
Legacy Street Name Pre Directional[1]	LSt_PreDir	C	A	2
Legacy Street Name[1]	LSt_Name	C	A	75
Legacy Street Name Type[1]	LSt_Type	C	A	5
Legacy Street Name Post Directional[1]	LStPosDir	C	A	2
ESN Left[1]	ESN_L	C	A	5
ESN Right[1]	ESN_R	C	A	5
MSAG Community Name Left[1]	MSAGComm_L	C	A	30
MSAG Community Name Right[1]	MSAGComm_R	C	A	30
Country Left	Country_L	M	A	2
Country Right	Country_R	M	A	2

State Left	State_L	M	A	2
State Right	State_R	M	A	2
County Left	County_L	M	A	40
County Right	County_R	M	A	40
Additional Code Left	AddCode_L	C	A	6
Additional Code Right	AddCode_R	C	A	6
Incorporated Municipality Left	IncMuni_L	M	A	100
Incorporated Municipality Right	IncMuni_R	M	A	100
Unincorporated Community Left	UnincCom_L	O	A	100
Unincorporated Community Right	UnincCom_R	O	A	100
Neighborhood Community Left	NbrhdCom_L	O	A	100
Neighborhood Community Right	NbrhdCom_R	O	A	100
Postal Code Left	PostCode_L	C	A	7
Postal Code Right	PostCode_R	C	A	7
Postal Community Name Left	PostComm_L	C	A	40
Postal Community Name Right	PostComm_R	C	A	40
Road Class	RoadClass	O	A	15
One-Way	OneWay	O	A	2
Speed Limit	SpeedLimit	O	N	3

Summary of NG9-1-1 Road Centerline Requirements

- Centerlines shall be continually updated as new roads are constructed or adjustments occur in the existing road network.
- Centerlines shall represent all public and addressed private roads.
- Attributes shall be accurate, complete and standardized (address ranges, ESN's Communities, spelling abbreviations). The abbreviations can be found in USPS Publication 28, Appendix B.
- Road names shall conform to the legal names as assigned by the addressing authority. The abbreviations can be found in USPS Publication 28, Appendix B.
- Centerline segments with no addressing along one or both sides, including small connector pieces shall have zeroes entered into the relevant Address Range fields.
- Roads representing border of maintenance responsibility should contain address ranges for the side of road within the jurisdiction. The ranges for the side of road outside maintenance jurisdiction should contain zeroes to avoid possible overlapping ranges between adjoining jurisdictions. Inter local agreements may be necessary to accommodate special situations.
- Each centerline segment shall share an exact start or end node with another centerline segment, unless it is a dead-end.
- Road centerline segments shall be split at:
    - Intersections with State, County, City, and Emergency Service Boundary (ESB)
    - Intersection with another segment
    - Change in primary road name
- Many mapping systems assume addresses are increasing in the FROM TO Node direction. Some geocoding applications assume addresses are increasing in the

FROM TO Node direction. Many entities are moving to this so they can create one set of base data that can be used for 9-1-1, Engineering, Planning, Taxation, and Transportation Departments.

PSAP Boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Emergency Service Boundary NENA Globally Unique ID	ES_NGUID	M	A	100
State	State	M	A	2
Agency ID	Agency_ID	M	A	100
Service URI	ServiceURI	M	A	254
Service URN	ServiceURN	M	A	50
Service Number	ServiceNum	O	A	15
Agency vCard URI	AVcard_URI	M	A	254
Display Name	DsplayName	M	A	60

Summary of PSAP Boundary Requirements

- PSAP boundary layer shall be continually updated as service areas change.
- PSAP boundary layer shall completely fill the Authoritative Boundary layer (no gaps and overlaps)
- A geographic location (civic address or coordinate) can only have one designated primary PSAP.

Emergency Service Boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Emergency Service Boundary NENA Globally Unique ID	ES_NGUID	M	A	100
State	State	M	A	2
Agency ID	Agency_ID	M	A	100
Service URI	ServiceURI	M	A	254
Service URN	ServiceURN	M	A	50
Service Number	ServiceNum	O	A	15
Agency vCard URI	AVcard_URI	M	A	254
Display Name	DsplayName	M	A	60

Summary of ESB Requirements

- ESB boundary layers shall be continually updated as service areas change.

- ESB boundary layers shall completely fill the PSAP Boundary layer (no gaps and overlaps).
- Multiple ESB polygons representing a specific category of emergency responders such as Fire Response that falls within the PSAP Boundary.
- A geographic location (civic address or coordinate) must only have one designated primary Emergency Service Provider category such as Fire Response.

7.2 Strongly Recommended files

Street Alias

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Alias Street Name NENA Globally Unique ID	ASt_NGUID	M	A	100
Road Centerline NENA Globally Unique ID	RCL_NGUID	M	A	100
Alias Street Name Pre Modifier	ASt_PreMod	C	A	15
Alias Street Name Pre Directional	ASt_PreDir	C	A	9
Alias Street Name Pre Type	AStPreType	C	A	25
Alias Street Name Pre Type Separator	ASt_PreSep	C	A	20
Alias Street Name	ASt_Name	M	A	60
Alias Street Name Post Type	AStPosType	C	A	15
Alias Street Name Post Directional	ASt_PosDir	C	A	9
Alias Street Name Post Modifier	ASt_PosMod	C	A	25
Alias Legacy Street Name Pre Directional[1]	ALStPreDir	C	A	2
Alias Legacy Street Name[1]	ALStName	C	A	75
Alias Legacy Street Name Type[1]	ALStType	C	A	5
Alias Legacy Street Name Post Directional[1]	ALStPosDir	C	A	2

The recorded legal road name as assigned by the local addressing authority should be the name used in the Road Centerlines. However, many roads are known by more than the legal road name, and these are known as alias road names. Regardless of how road name aliases are represented in a local GIS system, it must be convertible to the form used by the SIF in 08-003.

Alias road names are common and must be considered. Examples include when a state route or state highway crosses into a city jurisdiction, when several roads “merge” to traverse the same road pavement, or when honorary names are given to previously named and addressed roads. There are many other instances of alias road names.

Agencies may need to accommodate for alias road names during the location validation and call routing process, call handling, and data sharing. To ensure proper civic location validation by the LVF and proper routing by the ECRF, a standardized method of maintaining alias road names is required. The use of this Road Name Alias Table will facilitate the sharing of data in a consistent manner by various local 9-1-1 Authorities.

See NENA Standard for NG9-1-1 GIS Data Model for further information.

Site Structure / Address Points

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20

Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Site NENA Globally Unique ID	Site_NGUID	M	A	100
Country	Country	M	A	2
State	State	M	A	2
County	County	M	A	40
Additional Code	AddCode	C	A	6
Additional Data URI	AddDataURI	C	A	254
Incorporated Municipality	Inc_Muni	M	A	100
Unincorporated Community	Uninc_Comm	O	A	100
Neighborhood Community	Nbrhd_Comm	O	A	100
Address Number Prefix	AddNum_Pre	C	A	15
Address Number	Add_Number	C	N	6
Address Number Suffix	AddNum_Suf	C	A	15
Street Name Pre Modifier	St_PreMod	C	A	15
Street Name Pre Directional	St_PreDir	C	A	9
Street Name Pre Type	St_PreTyp	C	A	25
Street Name Pre Type Separator	St_PreSep	C	A	20
Street Name	StreetName	C	A	60
Street Name Post Type	St_PosTyp	C	A	15
Street Name Post Directional	St_PosDir	C	A	9
Street Name Post Modifier	St_PosMod	C	A	25
Legacy Street Name Pre Directional[1]	LSt_PreDir	C	A	2
Legacy Street Name[1]	LSt_Name	C	A	75
Legacy Street Name Type[1]	LSt_Type	C	A	5
Legacy Street Name Post Directional[1]	LStPostDir	C	A	2
ESN[1]	ESN	C	A	5
MSAG Community Name[1]	MSAGComm	C	A	30
Postal Community Name	Post_Comm	C	A	40
Postal Code	Post_Code	C	A	7
ZIP Plus 4	Post_Code4	O	A	4
Building	Building	O	A	75
Floor	Floor	O	A	75
Unit	Unit	O	A	75
Room	Room	O	A	75
Seat	Seat	O	A	75
Additional Location Information	Addtl_Loc	O	A	225
Complete Landmark Name	LandmkName	C	A	150

Mile Post	Mile_Post	C	A	150
Place Type	Place_Type	O	A	50
Placement Method	Placement	O	A	25
Longitude	Long	O	F	-
Latitude	Lat	O	F	-
Elevation	Elev	O	N	6

Site/structure address points ideally represent the location of the site or a structure or the location of access to a site or structure. Site/structure address points can also represent landmarks. The *NENA Information Document for Development of Site/ Structure Address Point GIS Data for 9-1-1 (NENA-INF*-014.1-2015) is an informational document to assist in site structure address point placement which should be referenced in the development of a site/structure address point layer.

It is strongly recommended that agencies develop their SSAP for NG9-1-1 functionality.

Summary of SSAP Requirements

- SSAP shall be continually updated.
- SSAP shall, at a minimum, represent all public and private addressable structures.
- SSAP attributes shall be accurate, complete and standardized.
- Abbreviations of all Street Prefixes and Suffixes shall be incorporated according to NENA Standard. The abbreviations can be found in USPS Publication 28, Appendix B.

Landmarks

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Landmark Name Part NENA Globally Unique ID	LMNP_NGUID	C	A	100
Site NENA Globally Unique ID	Site_NGUID	C	A	100
Alias Complete Landmark Name NENA Globally Unique ID	ACLMNNGUID	C	A	100
Landmark Name Part	LMNamePart	M	A	150
Landmark Name Part Order	LMNP_Order	M	N	1

Landmark Alias

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20

Alias Complete Landmark Name Globally Unique ID	ACLMNNGUID	M	A	100
Site NENA Globally Unique ID	Site_NGUID	M	A	100
Alias Complete Landmark Name	ACLandmark	C	A	150

State boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
State NENA Globally Unique ID	StateNGUID	M	A	100
Country	Country	M	A	2
State	State	M	A	2

Summary of NG9-1-1 State Boundaries Requirements

- This layer already has a statewide, authoritative process and does not need to be duplicated. Suggest incorporating this reference as a bullet comment beneath table.

County boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
County NENA Globally Unique ID	CntyNGUID	M	A	100
Country	Country	M	A	2
State	State	M	A	2
County	County	M	A	75

Summary of NG9-1-1 County Boundaries Requirements

- This layer already has a statewide, authoritative process and does not need to be duplicated. Suggest incorporating this reference as a bullet comment beneath table.

Incorporated Municipal boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Incorporated Municipality NENA Globally Unique ID	IncM_NGUID	M	A	100
Country	Country	M	A	2
State	State	M	A	2
County	County	M	A	75
Additional Code	AddCode	C	A	6
Incorporated Municipality	Inc_Muni	M	A	100

Summary of NG9-1-1 Municipal Boundaries Requirements

- This layer already has a statewide, authoritative process and does not need to be duplicated. Suggest incorporating this reference as a bullet comment beneath table.

Unincorporated Municipal boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20
Unincorporated NENA Globally Unique ID	UnincNGUID	M	A	100
Country	Country	M	A	2
State	State	M	A	2
County	County	M	A	75
Additional Code	AddCode	C	A	6
Unincorporated Community	Uninc_Comm	M	A	100

Neighborhood boundaries

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Effective Date	Effective	O	D	20
Expiration Date	Expire	O	D	20

Neighborhood NENA Globally Unique ID	NbrhdNGUID	M	A	100
Country	Country	M	A	2
State	State	M	A	2
County	County	M	A	75
Additional Code	AddCode	C	A	6
Incorporated Municipality	Inc_Muni	M	A	100
Unincorporated Community	Uninc_Comm	C	A	100
Neighborhood Community	Nbrhd_Comm	M	A	100

7.3 Recommended files

Railroad Lines

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Rail Segment NENA Globally Unique ID	RS_NGUID	M	A	100
Rail Line Owner	RLOWN	C	A	100
Rail Line Operator	RLOP	C	A	100
Rail Line Name	RLNAME	O	A	100
Rail Mile Post Low	RMPL	O	F	-
Rail Mile Post High	RMPH	O	F	-

Hydrology lines

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Hydrology Segment NENA Globally Unique ID	HS_NGUID	M	A	100
Hydrology Segment Type	HS_Type	O	A	100
Hydrology Segment Name	HS_Name	O	A	100

Hydrology Polygon

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Hydrology Polygon NENA Globally Unique ID	HP_NGUID	M	A	100
Hydrology Polygon Type	HP_Type	O	A	100
Hydrology Polygon Name	HP_Name	O	A	100

Cell Site points

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Country	Country	M	A	2
State	State	M	A	2
County	County	M	A	75

Cell NENA Globally Unique ID	Cell_NGUID	M	A	100
Site ID	Site_ID	C	A	10
Sector ID	Sector_ID	M	A	4
Switch ID	Switch_ID	C	A	10
Market ID	CMarket_ID	C	A	10
Cell Site ID	CSite_Name	C	A	10
ESRD or First ESRK	ESRD_ESRK	C	N	10
Last ESRK	ESRK_Last	C	N	10
Sector Orientation	CSctr_Ornt	M	A	4
Technology	Technology	M	A	10

Mile markers

Descriptive Name	Field Name	M/C/O	Type	Field Width
Source of Data	Source	M	A	75
Date Updated	DateUpdate	M	D	20
Mile Post NENA Globally Unique ID	MileMNGUID	M	N	100
Mile Post Unit of Measurement	MileM_Unit	C	A	15
Mile Post Measurement Value	MileMValue	M	F	-
Mile Post Route Name	MileM_Rte	M	A	100
Mile Post Type	MileM_Type	C	A	15
Mile Post Indicator	MileM_Ind	M	A	1

8.0 Appendix B

8.1 Standards reference

DATA STRUCTURES DOCUMENTS (including NG9-1-1)		
02-010	Standard Legacy Data Formats For 9-1-1 Data Exchange GIS Mapping	2011/03/28
02-501	Wireless (Pre-XML) Static and Dynamic ALI Data Content Information Document	2006/10/16
02-503	XML Namespaces Information Document	2007/02/23
04-005	ALI Query Service Standard	2006/11/21
71-001	NG9-1-1 Additional Data Standard	2009/09/17
NENA-STA-004.1-2014	NENA Next Generation United States Civic Location Data Exchange Format (CLDXF)	2014/03/23
NENA-STA-008.2-2014 (originally 70-001)	NENA Registry System (NRS) Standard	2014/10/06
NENA/APCO-INF-005	NENA/APCO Emergency Incident Data Document (EIDD) Information Document	2014/02/21
DATA MANAGEMENT DOCUMENT (including NG9-1-1)		
02-011	Data Standards For Local Exchange Carriers, ALI Service Providers & 9-1-1 Jurisdictions	2012/05/12
02-013	Data Standards for the Provisioning and Maintenance of MSAG Files to VDBs and ERDBs	2008/06/07 Reviewed 9/12/2014
02-014	GIS Data Collection and Maintenance Standards	2007/06/17
02-015	Standard for Reporting and Resolving ANI/ALI Discrepancies and No Records Found for Wireline, Wireless and VoIP Technologies	2009/06/06
02-502	NENA Company ID Registration Service Information Document	2008/11/12

06-001	Standards for Local Service Provider Interconnection Information Sharing	2004/08/01
71-501	Synchronizing Geographic Information System Databases with MSAG & ALI Information Document	2009/09/08
71-502	An Overview of Policy Rules for Call Routing and Handling in NG9-1-1 Information Document	2010/08/24
NENA-INF-011.1-2014	NENA NG9-1-1 Policy Routing Rules Operations Guide	2014/10/06
NENA-INF-014.1-2015	NENA Information Document for Development of Site/Structure Address Point GIS Data for 9-1-1	2015/09/18
NENA-STA-003.1.1-2014	NENA Standard for NG9-1-1 Policy Routing Rules	2014/12/01
NENA-REQ-002.1-2016	NENA Next Generation 9-1-1 Data Management Requirements	2016/03/10
NG9-1-1 TRANSITION PLANNING DOCUMENTS		
NENA-INF-008.2-2014 (originally 77-501)	NG9-1-1 Transition Plan Considerations Information Document	2013/11/20
SECURITY DOCUMENTS		
04-503	Network/System Access Security Information Document	2005/12/01
75-001	Security for Next-Generation 9-1-1 Standard	2010/02/06
75-502	Next Generation 9-1-1 Security Audit Checklist Information Document	2011/12/14
VOICE OVER INTERNET PROTOCOL (VoIP) DOCUMENTS		
08-001	Interim VoIP Architecture for Enhanced 9-1-1 Services (i2) Standard	201008/11

08-503	VoIP Characteristics Information Document	2004/06/10
08-504	VoIP Standards Development Organization Information Document	2004/06/08
57-503	Procedures for Notification of ERDB & VPC Operators of ESN Changes by 9-1-1 Administrator Information Document	2008/01/08
58-502	VoIP Funding and Regulatory Issues Information Document	2006/06/06
NEXT GENERATION 9-1-1 (NG9-1-1) DOCUMENTS		
08-002	Functional and Interface Standards for Next Generation 9-1-1 Version	2007/12/18
08-003	Detailed Functional and Interface Standards for the NENA i3 Solution	2011/06/14
08-501	Interface between the E9-1-1 Service Provider Network and the Internet Protocol (IP) PSAP Information Document	2004/06/15
08-505	Methods for Location Determination to Support IP-Based Emergency Services Information Document	2006/12/21
08-506	Emergency Services IP Network Design for NG9-1-1 Information Document	2011/12/14
08-751	NENA i3 Requirements Document	2006/09/28
08-752	Location Information to Support IP-Based Emergency Services Requirements Document	2006/12/21
57-750	NG9-1-1 System and PSAP Operational Features and Capabilities Requirements Document	2011/06/14
NENA-INF-003.1-2013	Potential Points of Demarcation in NG9-1-1 Networks Information Document	2013/03/21
NENA-INF-006.1-2014	NG9-1-1 Planning Guidelines Information Document	2014/01/08
NENA-INF-009.1-2014	Requirements for a National Forest Guide Information Document	2014/08/14
NENA/APCO-REQ-001.1.1-2016	NENA/APCO NG9-1-1 PSAP Requirements Document	2016/01/15

WIRELESS 9-1-1 INTEGRATION DOCUMENTS		
57-001	Wireless E9-1-1 Overflow, Default and Diverse Routing Standard & A PSAP Managers' Guide to GIS & Wireless 9-1-1	2004/11/18
57-002	E9-1-1 Wireless Maintenance Call Routing & Testing Validation Standard including Call Routing & Testing Validation Worksheet & Sample Non-Disclosure Agreement	2007/06/09

Technology (formerly NG911) Committee Report

Jeff Shipp

a) GIS Conceptual Design

(vote required)

Executive Director Report

Richard Taylor

a) Update On Annual FCC Funding Report

EIGHTH ANNUAL REPORT TO CONGRESS

ON STATE COLLECTION AND DISTRIBUTION OF 911 AND ENHANCED 911 FEES AND CHARGES

FOR THE PERIOD JANUARY 1, 2015 TO DECEMBER 31, 2015

Submitted Pursuant to
Public Law No. 110-283

FEDERAL COMMUNICATIONS COMMISSION
Tom Wheeler, Chairman

December 30, 2016

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I. INTRODUCTION

1. The Chairman, Federal Communications Commission (Commission),[1] hereby submits this Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges, as mandated by the New and Emerging Technologies 911 Improvement Act of 2008 (NET 911 Act)[2] and as prepared by the staff in the Public Safety and Homeland Security Bureau (Bureau).[3] This is the eighth annual report on the collection and distribution of 911 and Enhanced 911 (E911) fees and charges by the states, the District of Columbia, U.S. territories, and tribal authorities, and covers the period January 1, 2015 to December 31, 2015. This report also reflects the second annual collection of new data elements relating to the number of 911 call centers and telecommunicators, 911 call volumes, 911 expenditure categories, implementation of Next Generation 911, and cybersecurity for 911 systems.

[1] *See* 47 U.S.C. § 155(a) (stating, *inter alia*, that "[i]t shall be [the Chairman's] duty . . . to represent the Commission in all matters relating to legislation and legislative reports").

[2] New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620 (2008) (NET 911 Act).

[3] *See* 47 C.F.R. § 0.191(k) (providing delegated authority to the Public Safety and Homeland Security Bureau to develop responses to legislative inquiries).

II. KEY FINDINGS

2. Forty-nine states,[4] the District of Columbia, American Samoa, Puerto Rico, and the United States Virgin Islands responded to this year's data request. The following is a compilation of key findings based on the responses:

- In calendar year 2015, states and other reporting jurisdictions collected 911/E911 fees or charges totaling $2,631,705,008.98.

- Fees and charges collected on a per-state basis ranged from a low of $1,297,671.00 by the US Virgin Islands to a high of $239,800,218.00 by Pennsylvania.

- Twenty-seven states, the District of Columbia, Puerto Rico, and the US Virgin Islands reported collecting 911/E911 fees at the state level, six reported collecting fees at the local level, and sixteen states collected fees at both the state and local level.

- The Bureau identified eight states and Puerto Rico as diverting or transferring 911/E911 fees for purposes other than 911/E911.

    - Iowa, New Hampshire, New Jersey, Washington, and West Virginia used a portion of their 911/E911 funds to support non-911 related public safety programs.

    - Illinois, New Hampshire, New York, Rhode Island, and Puerto Rico used a portion of their 911/E911 funds for either non-public safety or unspecified uses.

    - The total amount of 911/E911 funds diverted by all reporting jurisdictions in calendar year 2015 was $220,281,586.82, or approximately 8.4 percent of total 911/E911 fees collected.

- Thirty-six states, the District of Columbia, and Puerto Rico reported spending 911/E911 funds on Next Generation 911 (NG911) programs in calendar year 2015. The total amount of reported NG911 expenditures from 911/E911 fees was $164,817,664.55, or approximately 6.26 percent of total 911/E911 fees collected.

- Thirteen states and Puerto Rico reported having deployed state-wide Emergency Services IP Networks (ESInets). Fifteen states reported having regional ESInets within the state, and ten states reported local-level ESInets.

- Forty states, the District of Columbia, and Puerto Rico reported on deployment of text-to-911. Collectively, respondents reported 553 PSAPs as being text-capable as of the end of 2015, and projected that an additional 844 PSAPs would be text-capable by the end of 2016.

- While almost every state collects 911 fees from in-state subscribers, nineteen states and American Samoa reported that they lack authority to audit service providers to verify that the collected fees accurately reflect the number of in-state subscribers served by the provider. Of the states that have audit authority, eight conducted audits in 2015.

- On the topic of cybersecurity preparedness for Public Safety Answering Points (PSAPs),

[4] Missouri was the only state that did not respond to this year's data request.

thirty-eight states, American Samoa, Puerto Rico, and US Virgin Islands indicated that they spent no 911 funds in 2015 on 911–related cybersecurity programs for PSAPs. Nine states and the District of Columbia stated that they had made cybersecurity-related expenditures.

III. BACKGROUND

3. Section 101 of the NET 911 Act added a new section 6(f)(2) to the Wireless Communications and Public Safety Act of 1999 (Wireless 911 Act), which provides:

> To ensure efficiency, transparency, and accountability in the collection and expenditure of a fee or charge for the support or implementation of 9-1-1 or enhanced 9-1-1 services, the Commission shall submit a report within 1 year after the date of enactment of the New and Emerging Technologies 911 Improvement Act of 2008, and annually thereafter, to the Committee on Commerce, Science and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives detailing the status in each State of the collection and distribution of such fees or charges, and including findings on the amount of revenues obligated or expended by each State or political subdivision thereof for any purpose other than the purpose for which any such fees or charges are specified.

4. *Information Request and Responses*. In April 2016, the Bureau sent questionnaires to the Governor of each state and territory and the Mayor of the District of Columbia requesting information on 911 fee collection and expenditure for calendar year 2015.[5] The Bureau received responsive information from 49 states, the District of Columbia, American Samoa, Puerto Rico, and the US Virgin Islands.[6] The Bureau did not receive responses from Missouri, Guam, and Northern Mariana Islands.

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[5] *See* Appendix C - Annual Collection of Information Related to the Collection and Use of 911 and E911 Fees by States and Other Jurisdictions (FCC Questionnaire). This year's data collection incorporates recommendations made by the Government Accountability Office (GAO) in its April 2013 report on state collection and use of 911 funds. *See* Government Accountability Office, "Most States Used 911 Funds for Intended Purposes, but FCC Could Improve Its Reporting on States' Use of Funds," GAO-13-376 (Apr. 2013) (GAO Report). GAO prepared this report pursuant to a directive in the Next Generation 911 Advancement Act of 2012. *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 158 (2012). Consistent with GAO's recommendation, and in order to improve the collection and analysis of data in its annual reports, the Bureau modified its information collection authorization under the Paperwork Reduction Act to include closed-ended questions in the annual information request. Additionally, the Bureau provided responders with electronic forms that can be filled out and returned by e-mail to ease the information collection burden. The expanded information collection was approved by the Office of Management and Budget in April 2015. *See* Letter from Dominic J. Mancini, Acting Deputy Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget, to Walter Boswell, Certifying Official, FCC, OMB Control Number 201501-3060-021 (Mar. 25, 2015). In previous years, the Bureau has sent questionnaires to the regional offices of the Bureau of Indian Affairs (BIA), but these offices have either failed to respond, indicated they have no responsive information, or requested that they not be contacted. Accordingly, the Bureau did not include the BIA regional offices in this year's data collection.

[6] Copies of reports from all responding jurisdictions are available on the FCC web site at https://www.fcc.gov/fcc.gov/general/8th-annual-911-fee-report-state-filings. Of the 49 responding states, Nevada and Ohio did not collect the information at the state level but coordinated a response by select Nevada and Ohio counties. Rhode Island, New York, and Wyoming responded to the data request but did not use the supplied questionnaire, instead providing their own response format. Missouri did not respond to the request. American Samoa, the District of Columbia, Puerto Rico and the US Virgin Islands used the supplied questionnaire. The Commission did not receive responses from Guam or Northern Mariana Islands.

IV. DISCUSSION

5. This Report describes how states and other entities collected 911/E911 funds in calendar year 2015, how much they collected, and how they oversaw the expenditure of these funds.[7] The Report describes the extent to which states diverted or transferred collected 911/E911 funds to funds or programs other than those that support or implement 911/E911 services. The report also examines the collection and expenditure of funds on NG911 and cybersecurity programs.

A. Summary of Reporting Methodology

6. Section 6(f)(1) of the Act affirms the ability of "[a] State, political subdivision thereof, Indian tribe, or village or regional corporation serving a region established pursuant to the Alaska Native Claims Settlement Act, as amended ..." to collect fees or charges "[applicable] to commercial mobile services or IP-enabled voice services ... for the support or implementation of 9-1-1 or enhanced 9-1-1 services, provided that the fee or charge is obligated or expended only in support of 9-1-1 and enhanced 9-1-1 services, or enhancements of such services, *as specified in the provision of State or local law adopting the fee or charge*."[8] Section 6(f)(2) further requires the Commission to obtain information "detailing the status in each State of the collection and distribution of such fees or charges, and including findings on the amount of revenues obligated or expended by each State or political subdivision thereof *for any purpose other than the purpose for which any such fees or charges are specified.*"[9]

7. Given the NET 911 Act's reference to state and local 911 fee statutes, our state-by-state analysis of 911/E911 fee expenditures in this report is determined by the applicable statute governing the collection and expenditure of 911/E911 fees within each state. States determine how 911/E911 fee revenues are to be spent, therefore, individual state definitions of what constitute permissible expenditures may vary. The Bureau's information collection questionnaire asks each state to confirm whether it has spent 911/E911 funds solely for purposes permitted under the particular state's 911 funding statute, and also requests information on what uses are deemed permissible under the state's statute and how such uses support 911 or E911 service. Although some state statutes expressly authorize the diversion or transfer of collected 911/E911 fees, the Bureau reviews the reported expenditures to determine whether such diversions or transfers are not "in support of 9-1-1 and enhanced 9-1-1 services, or enhancements of such services" within the meaning of the NET 911 Act. The report on 911/E911 fee diversion in Section G below is consistent with this interpretation.

B. Overview of State 911 Systems

8. To provide a broader context for the information provided on collection and use of 911 fees, the data collection sought information about the total number of Public Safety Answering Points (PSAPs) that receive funding derived from the collection of 911 fees, the number of active telecommunicators funded through the collection of 911 fees, the total number and type of 911 calls the state or jurisdiction received, and an estimate of the total cost to provide 911/E911 service.[10]

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[7] Our analysis includes states that collect and distribute fees over the course of a fiscal year as opposed to the calendar year covered by our reports.

[8] NET 911 Act at §6(f)(1).

[9] *Id.* at §6(f)(2). Emphasis added.

[10] FCC Questionnaire at 2-3.

9. **Number and Type of PSAPs.** The questionnaire requested that states "provide the total number of active [Primary and Secondary PSAPs][11] in your state or jurisdiction that receive funding derived from the collection of 911/E911 fees during the annual period ending December 31, 2015." Table 1 shows that 47 states, American Samoa, the District of Columbia, Puerto Rico, and the US Virgin Islands responded to this request, reporting a total of 4,671 Primary PSAPs and 778 Secondary PSAPs, for a total of 5,449 PSAPs dependent on funding derived from the collection of 911 fees.[12] We note that because the Bureau's data request focused on PSAPs that receive funding from 911 fees, the reported data does not necessarily include PSAPs that are funded through sources other than 911 fees. American Samoa reports that there is a single primary PSAP in the territory housed in the Department of Public Safety, but that it is not funded through the collection of 911 fees.[13] Michigan states that there are five secondary PSAPs in the state, but that they are all operated by private EMS services and receive no direct funding through the fees and surcharges described in its filing.[14]

Table 1 - Number and Types of PSAPS of Reporting Jurisdictions

State	Number of PSAPs				
	Total Primary	Total Secondary	Total	Unknown	No Response
AK	38	5	43		
AL	118	0	118		
AR	102	29	131		
AZ	76	10	86		
CA	399	51	450		
CO	91	8	99		
CT	110	0	110		
DE	8	1	9		
FL	154	52	206		
GA	135	23	158		
HI	5	3	8		
IA	114	0	114		
ID	46	2	48		
IL	253	25	278		
IN	91	28	119		
KS	117	0	117		
KY	115	40	155		

[11] A Primary PSAP is one to which 911 calls are routed directly from the 911 Control Office. A Secondary PSAP is one to which 911 calls are transferred from a Primary PSAP. *See* National Emergency Number Association, Master Glossary of 9-1-1 Terminology (NENA Master Glossary), July 29, 2014, at 118, 126, available at https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/Standards/NENA-ADM-000.18-2014_2014072.pdf .

[12] New Jersey did not respond to this portion of the questionnaire.

[13] American Samoa Response at 3. The PSAP is operated as a unit of the Department of Public Safety Police Services Bureau and funded under the DPS annual operations budget.

[14] Michigan Response at 2.

State	Number of PSAPs				
	Total Primary	Total Secondary	Total	Unknown	No Response
LA	57	50	107		
MA	249	81	330		
MD	24	52	76		
ME	26	0	26		
MI	145	0	145		
MN	99	5	104		
MS	103	30	133		
MT	53	0	53		
NC	119	6	125		
ND	22	0	22		
NE	71	0	71		
NH	2	0	2		
NJ				X	
NM	45	2	47		
NV	12	3	15		
NY	134	50	184		
OH	143	60	203		
OK	133		133		
OR	43	14	57		
PA	69	0	69		
RI	1	1	2		
SC	80	0	80		
SD	29	0	29		
TN	140	30	170		
TX	490	64	554		
UT	32	4	36		
VA	121	40	161		
VT	6	0	6		
WA	54	9	63		
WI	139	0	139		
WV	52	0	52		
WY					X
Other Jurisdictions					
AS	1	0	1		
DC	1	0	1		
PR	2	0	2		
USVI	2	0	2		
Total	**4,671**	**778**	**5,449**	**1**	**1**

10. **Number of Telecommunicators**. Respondents were asked to provide the total number of active telecommunicators[15] in each state or territory that were funded through the collection of 911/E911 fees during the annual period ending December 31, 2015. As detailed in Table 2, forty-six states, the District of Columbia, American Samoa, Puerto Rico and the US Virgin Islands responded to this data request. Twenty-seven states, Puerto Rico, and US Virgin Islands reported a total of 30,664 full time telecommunicators and 2,360 part-time telecommunicators that are funded through the collection of 911 fees. Eleven states reported they do not know how telecommunicators are funded, seven states and the District of Columbia reported they are not funded by 911 fees, and three states did not respond to the question. American Samoa reported eight telecommunicators, but they are not funded by 911 fees.

Table 2 – Total Telecommunicators Funded by 911 Fees

State	Number of Telecommunicators Funded by 911 Fees				
	Full Time	Part Time	Unknown	Not Funded	NR
AK	270	10			
AL			X		
AR	1,018	187			
AZ				X	
CA				X	
CO	481	11			
CT					X
DE	253	3			
FL	2,260	271			
GA			X		
HI	236				
IA			X		
ID			X		
IL	3,428	N/A			
IN	1,401	257			
KS	1,071	125			
KY	1,238	270			
LA			X		
MA	5,000				

[15] A telecommunicator, also known as a call taker or a dispatcher, is a person employed by a PSAP who is qualified to answer incoming emergency telephone calls and/or who provides for the appropriate emergency response either directly or through communication with the appropriate PSAP. *See* NENA Master Glossary at 137.

State	Number of Telecommunicators Funded by 911 Fees				
	Full Time	Part Time	Unknown	Not Funded	NR
MD	1,417	94			
ME				X	
MI	1,978	282			
MN			X		
MS	1,365				
MT			X		
NC				X	
ND	230				
NE	590	101			
NH	74	12			
NJ				X	
NM				X	
NV	71	4			
NY					X
OH	661	108			
OK			X		
OR	854				
PA	2,097	267			
RI	30				
SC					X
SD	282	30			
TN			X		
TX	880	19			
UT	790	80			
VA	1,043				
VT	76	31			
WA	1,052	94			
WI			X		
WV	566	107			
WY			X		
Other Jurisdictions					
AS	8				
DC				X	
PR	162				
USVI	35				
Total	**30,917**	**2,363**	**11**	**7**	**3**

11. **Number of 911/E911 Calls.** The questionnaire asked respondents to provide an estimate of the total number of 911 calls the state or jurisdiction received for the annual period ending December 31, 2015. Forty-four states, the District of Columbia, American Samoa, Puerto Rico, and the US Virgin Islands reported a cumulative total of 253,844,538 calls of all types during 2015.[16] This represents an increase of 29.4 percent in reported call volume over 2014, although this difference is largely attributable to the increased number of states and territories that reported data this year compared to last year.[17] Of the total reported calls, 156,031,576 calls came from wireless phones, representing approximately 61.5 percent of the total reported call volume, as compared to 2014, when wireless calls comprised approximately 69.2 percent of reported call volume. However, this likely understates the percentage of wireless 911 calls because a number of states reported total 911 calls but did not break out service categories separately.[18] Table 3 provides specific call volume information provided by each state or other jurisdiction for each service type. In addition, the Bureau has included an estimate of annual 911 calls on a per capita basis in each reporting state and jurisdiction.

Table 3 – Total 911 Calls by Service Type

State	Type of Service							Estimated Annual 911 Calls Per Capita[19]
	Wireline	Wireless	VoIP	Other	Total	Unknown	No Response	
AK	66,917	337,349	Unknown	Unknown	404,266			.57
AL[20]	Unknown	1,387,805	Unknown	Unknown	1,387,805			.29
AR[21]	276,035	2,038,786	Unknown	Unknown	2,314,821			.79
AZ	945,863 (includes VoIP)	4,235,749	--	No Response	5,181,612			.81
CA	4,254,595	22,741,803	948,995	1,167,832 (Types Not Specified)	29,113,225			.78
CO	475,394	5,895,735	171,642	--	6,542,771			1.30

[16] Five states stated they did not have access to this information.

[17] In the 2015 Report, 911 call volume data was provided by 38 states, the District of Columbia, American Samoa, and the Navajo Nation.

[18] Idaho, Louisiana, Mississippi, New York, New Jersey, Rhode Island, Puerto Rico, and the US Virgin Islands reported total 911 call volumes but did not provide service category subtotals.

[19] Bureau estimate based on United States 2010 Census data for each jurisdiction.

[20] According to Alabama, with respect to wireline, VoIP, and "Other" call types, "[t]hese statistics are maintained at the local emergency communications districts and are not readily available to the state office. Alabama completed their wireless aggregation project in December 2014, which allows for all wireless calls in the state to be routed through the Alabama Next Generation Emergency Network (ANGEN); therefore, we are only able to provide wireless statistics for our state. Based on incomplete reporting from local districts, wireless calls account for approximately 80% to 85% of the 911 calls in the State of Alabama." Alabama Response at 3.

[21] Arkansas reported that prior to 2016 (for calendar year 2015), "AT&T provided call studies to the PSAPs. Because many of the PSAPs were not pulling call studies from their 911 systems regularly, they were unaware that their systems were not working. As a result some of the reported stats were estimated based on the surrounding month's data and the previous year's data for the same reporting period." Arkansas Response at 3.

State	Type of Service							Estimated Annual 911 Calls Per Capita[19]
	Wireline	Wireless	VoIP	Other	Total	Unknown	No Response	
CT	358,275	1,873,491	126,105	--	2,357,871			.66
DE	729,780	553,367	--	--	1,283,156			1.43
FL	2,446,096	19,070,052	461,144	230,873	22,208,165			1.18
GA	--	--	--	--	--	X		--
HI	320,449	1,020,565	49,429	--	1,390,443			1.02
IA	Unknown	827,205	Unknown	--	827,205			.27
ID[22]	Not Specified				662,938			.42
IL	7,551,211	7,117,806	N/A	--	14,669,017			1.14
IN	1,219,984	3,787,054	89,691	148,555	5,245,284			.81
KS	727,672	1,498,473	27,831	142,467	2,396,443			.84
KY	656,664	2,831,848	--	--	3,488,512			.80
LA	▪ Types not specified ▪ 45 of 64 parishes reporting				4,633,500			1.02
MA	864,767 (includes VoIP)	3,032,090	--	--	3,896,857			.60
MD	1,429,626 (includes VoIP)	3,728,697	--	--	5,158,323			.89
ME	138,583	396,511	49,734	--	584,828			.44
MI	1,403,077	5,248,738	342,312	2,814[23]	6,996,941			.71
MN	703,295	2,143,558	52,074	80,676	2,979,603			.56
MS	Not Specified				2,792,209			.94
MT	--	--	--	--	--	X		--
NC	1,425,695	5,730,754	558,161	--	7,714,610			.81
ND	69,190	255,386	1,618	--	326,194			.48
NE	241,207	839,010	--	--	1,080,217[24]			.59
NH	72,885	354,330	48,627	15,600[25]	491,442			.37
NJ	Not Specified				7,850,000			.89
NM	285,751	1,187,718	21,604	3,976	1,499,049[26]			.73

[22] Reported that "30 of 46 PSAPs Responded and not all PSAPs are tracking or were able to pull the requested data for the state report. 662,938 total number of 911 calls delivered for 30 responding PSAPs. Not all could break out the different types. Consequently, those reported a total number." Idaho Response at 3.

[23] Michigan reported that 98 percent of PSAPs reported call volumes and included in "Other" are text-to-911 calls. Michigan Response at 4.

[24] Nebraska entered 1,080,297 for its total. Nebraska Response at 2.

[25] "Other" includes 15,261 Administrative Line calls and 339 texts-to-911. New Hampshire Response at 3.

[26] New Mexico entered 1,495,107 for its total. New Mexico Response at 3.

State	Type of Service							Estimated Annual 911 Calls Per Capita[19]
	Wireline	Wireless	VoIP	Other	Total	Unknown	No Response	
NV[27]	540,676	1,159,970	10,541	1,961,285	3,766,680			1.39
NY	Not Specified				29,417,934			1.52
OH	1,015,705	5,563,016	260,039	191,772	7,030,532			.61
OK	--	--	--	--	--	X		--
OR	319,200	1,315,320	82,189	30,570	1,747,279			.46
PA	2,480,207	6,495,406	418,886	--	9,394,499			.74
RI	Not Specified[28]				514,926			.49
SC	1,430,675 (includes VoIP)	4,292,025	--	--	5,722,700			1.24
SD	Unknown	Unknown	Unknown	--	332,645[29]			.41
TN	Unknown	3,120,000	Unknown	Unknown	3,120,000			.49
TX	2,980,196	24,917,198	878,125	229,581[30]	29,005,100			1.15
UT	98,500	904,773	31,483	19,312	1,054,068			.38
VA	1,146,214	3,341,374	--	--	4,487,588			.56
VT	41,826	139,926	18,366	6,283	206,401			.33
WA	999,536	4,906,647	360,298	--	6,266,481			.93
WI[31]	--	--	--	--	--	X		--
WV	988,876	667,704	76,430	259,201	1,992,211			1.08
WY	--	--	--	--	--	X		--
Other Jurisdictions								
AS	6,000	52,320	--	--	58,320			1.05

[27] Cumulative numbers for each call type include totals provided by Boulder City, Carson City, Las Vegas Fire & Rescue, Las Vegas Metro Police Department, and the counties of Douglas, Elko, Esmeralda, Lander, Nye, Sparks, Storey and Washoe.

[28] Rhode Island reported that of the "514,926 incoming 911 calls at its Primary (manned) PSAP, 75 percent were wireless."

[29] South Dakota stated that "total 911 calls is the only information we are able to collect from our PSAPs at this time, because every PSAP has a different CPE and some of their systems do not allow them to pull call counts by service type. However as part of the statewide NG911 project, we are deploying a statewide hosted CPE. Once the CPE is deployed in all the PSAPs the state will have access to all of the call data. This is expected to take until March of 2017. Calendar year 2018 is expected to be the first full year with all PSAPs on the hosted CPE and therefore the call counts will be available by service type." South Dakota Response at 3.

[30] "Other" total includes Multi-line Telephone Systems, telematics, and text to 911 calls. Texas Response at 3.

[31] Wisconsin reported that its "county and municipal governments operate and administer the 911 system and all public safety answering points (PSAPs). County and municipal governments do not report to any state agency the number of staff employed, the total cost to provide 911 service, or a statistical summary of the 911 service provided." Wisconsin Response at 4.

State	Type of Service							Estimated Annual 911 Calls Per Capita[19]
	Wireline	Wireless	VoIP	Other	Total	Unknown	No Response	
DC	442,917	1,022,017	--	--	1,464,934			2.42
PR	Not Specified				2,571,660			.69
USVI	Not Specified				213,282			2
Totals	**39,153,539**	**156,031,576**	**5,085,324**	**4,876,992**	**253,844,538**	**5**	**0**	

12. **Cost to Provide 911/E911 Service in Jurisdiction.** The questionnaire asked respondents to provide an estimate of the total cost to provide 911 service during the annual period ending December 31, 2015, regardless of whether such costs are supported by 911 fees or other funding sources. As detailed in Table 4, forty states, the District of Columbia, Puerto Rico, and the US Virgin Islands provided cost estimates totaling $3,368,446,067.70. Table 4 also includes the Bureau's estimate of reported costs on a per capita basis for each reporting state and jurisdiction. Nine states and American Samoa did not provide cost estimates, with many of the respondents noting that they lacked authority to collect 911 cost data from local jurisdictions. Some states that did submit estimates qualified their cost figures by noting that they had only partial information regarding the total cost to provide 911 service.[32]

Table 4 – Estimated Cost to Provide 911 Service

State	Total Estimated Cost to Provide 911 Service	Explanation, if any, About Figure Provided or Why Estimation Could not be Provided	Estimated Annual Per Capita 911 Cost[33]
AK	$12,837,113.68		$18.07
AL	$112,163,211.00	"This figure is for total expenditures as provided by an independent auditors' report for fiscal period October 1, 2014 through September 30, 2015."	$23.47
AR	$55,055,078.00		$17.17
AZ	$17,630,018.90		$2.76
CA	$87,954,600.00		$2.36
CO	$102,256,610.00	Amount is "(extrapolated based on partial survey responses from local 911 Authorities). We believe this number is an under-estimate due to some 911 Authorities reporting only the portion of costs paid for by 911 surcharge revenues, not total costs."	$20.33
CT	$28,625,819.44		$8.01

[32] States lacking complete information include Arkansas, Colorado, Illinois, Kansas, Kentucky, Maine, Michigan, Montana, Nevada, New Jersey, Ohio, Oregon, South Carolina, and West Virginia.

[33] Bureau estimate based on United States 2010 Census data for each jurisdiction.

State	Total Estimated Cost to Provide 911 Service	Explanation, if any, About Figure Provided or Why Estimation Could not be Provided	Estimated Annual Per Capita 911 Cost[33]
DE	$100,000,000.00		$111.37
FL	$210,240,763.10		$11.18
GA	Unknown	"There is no 9-1-1 authority established in the State of Georgia. There is also no central tracking mechanism in place to compile a total of fees imposed or collected by local government. "	--
HI	Unknown	"Each county has their own cost accounting system which the E911 Board has no authority over. Their system is not set up to capture expenses associated with 911/E911 service only. As a result, the counties must perform this task manually which creates other problems such as accuracy and time constraints. We will undergo an effort to work with the PSAPs to assist in accomplishing the task through modifications of their cost accounting system. Hopefully the matter will be resolved by this time next year."	--
IA	$143,193,597.97		$47.00
ID	Unknown	"Unknown at aggregated State Level; The cost of providing 911 services is kept at each of the jurisdictional levels and requests can be made for that data; however it is incomplete. The cost responses were not broken out sufficiently to give a solid number and only 30 of 46 PSAPs responded to the request with some responses as "unknown". Due to some responses being intermingled with 911 costs paid by the 911 fees and personnel costs that were paid for by General Funds, not all responses could be calculated and not all jurisdictions reported on the survey that was sent out to gather the information."	--
IL	$140,583,131.00	"Last year we were able to include the City of Chicago at a total of $263,503,493.00. The City's 2015 Audit has not been finalized and they were not able to provide this information. So the number above is for the entire State excluding Chicago."	$10.96
IN	$164,000,000.00		$25.29
KS	$69,487,521.92	"The amount provided in question 3 above contains estimates of personnel costs only for some PSAPs who did not provide this data upon request. The estimated amounts contained within the total are low, so actual cost of 911 is higher than shown."	$24.35

State	Total Estimated Cost to Provide 911 Service	Explanation, if any, About Figure Provided or Why Estimation Could not be Provided	Estimated Annual Per Capita 911 Cost[33]
KY	$91,576,465.00	"Centralized data collection is new to the CMRS Board so data collection in incomplete and is not always reliable. The total does not include state general funds dollars budgeted to the Kentucky State Police (KSP). KSP budgets are not designed to break out '911 costs' which we estimate to be $8 million in state general fund dollars."	$21.10
LA	Unknown	"Currently Louisiana does not have a body that receives a centralized report. This was changed in Act 665 of 2016 Regular Session of the Louisiana Legislature."	--
MA	$28,184,862.00	"The estimated amount (based upon the amount contracted for Fiscal Year 2016) to provide E911 service is: $28,184,862. This estimated amount includes the costs associated with the legacy E911 service provider contracts, MassGIS, and the mobile PSAP. This estimated amount does not include costs associated with Next Generation 911, grant programs, training programs, disability access programs, public education, administrative costs, or other costs for the administration and programs of the State 911 Department."	$4.30
MD	$93,091,148.75	"FY 2015 (July 1, 2014 to June 30, 2015) as reported by annual county audits."	$16.12
ME	$6,311,588.00	"State Share Only; the State of Maine provides for a statewide 911 system. The cost above is limited to the services we provide. We do not collect information on the local costs of PSAPs not funded through the E911 surcharge."	$4.75
MI	$249,337,283.18	"1) Expenses reported by PSAPs: $240,529,770.46. 2) The total reported technical costs for network collections by landline telephone companies for 911 network and delivery costs in 2015: $7,028,674 (figure does not include Baraga County). 3) $1,778,838.72 for calendar year 2015 for the cost of wireless 911 delivery was reimbursed to landline service providers (AT&T, Frontier, and Peninsula Fiber Network) under the Michigan Public Service Commission's Docket U-14000."	$25.23
MN	$26,190,951.58	"This includes NG911 specific expenditures, and the allocation provided to the PSAPs towards their eligible use expenses."	$4.94
MS	$35,494,712.00		$11.96
MT	$13,000,000.00	"The State of Montana distributes approximately $13 million total annually to wireless telecommunications providers, local and tribal governments for support of 911/E911 services. These funds do not cover all of the costs of providing 911/E911 services. Additional costs	$13.14

State	Total Estimated Cost to Provide 911 Service	Explanation, if any, About Figure Provided or Why Estimation Could not be Provided	Estimated Annual Per Capita 911 Cost[33]
		are incurred by providers, local and tribal governments and these costs are not reported to the State of Montana."	
NC	$109,413,320.00		$11.47
ND	$16,029,376.00		$23.83
NE	Unknown	"The Nebraska Public Service Commission (NPSC) has oversight over Wireless 911 only. An annual allocation of wireless 911 surcharge revenue is distributed to the PSAPs. The PSC does not have information regarding the costs to run the PSAPs at this time."	--
NH	$15,503,339.03		$11.78
NJ	$14,000,000.00	"The State of New Jersey funds the statewide enhanced 9-1-1 infrastructure at an annual cost of approximately $14M, the operational, equipment and personnel costs are the responsibility of the PSAP and not reported to the State 9-1-1 Office."	$1.59
NM	$12,871,714.00		$6.25
NV	$15,431,414.00	Number is based on individual responses of Boulder City, Carson City, Las Vegas Fire & Rescue, Las Vegas Metro Police Department, and the counties of Douglas, Elko, Esmeralda, Lander, Nye, Sparks, Storey and Washoe.	$5.71
NY	No Response		--
OH	$147,579,296.16	"This is based on responses from 80 of Ohio's 88 counties."	$12.79
OK	Unknown		--
OR	$126,781,435.00	"42 of 43 PSAPs reporting."	$33.09
PA	$333,226,588.00		$26.23
RI	$5,160,147.59	Amount based on FY 2015 Operating Budget	$4.90
SC	$65,000,000.00	"Estimated"	$14.05
SD	$24,292,661.00		$29.84
TN	$85,000,000.00		$13.39
TX	$232,792,528.76	"Amount equals total 772 ECD wireline/wireless/prepaid wireless revenues collected; for the state 9-1-1 program appropriated wireline/wireless/prepaid wireless and (9-1-1 only) equalization surcharge, and for the municipal ECDs a total cost estimate."	$9.26
UT	$50,000,000.00		$18.09

State	Total Estimated Cost to Provide 911 Service	Explanation, if any, About Figure Provided or Why Estimation Could not be Provided	Estimated Annual Per Capita 911 Cost[33]
VA	$111,600,179.00	"The only costs that we track directly at the state level are local PSAP personnel costs and payments made on behalf of the localities for wireless trunks and services. The total amount for these items is $111,600,179."	$13.95
VT	$4,604,830.00		$7.36
WA	$108,612,280.00	"Based on 115% of statewide total E911 excise taxes collected."	$16.15
WI	Unknown	"In Wisconsin, county and municipal governments operate and administer the 911 system and all public safety answering points (PSAPs). County and municipal governments do not report to any state agency the number of staff employed, the total cost to provide 911 service, or a statistical summary of the 911 service provided."	--
WV	$53,261,290.00	"11 out of 52 PSAPs did not provide data."	$28.74
WY	Unknown	"According to Title 16, Chapter 9 of the Wyoming State Statutes for the Emergency Telephone Service Act, Wyoming does not assign over-sight responsibility to a state-level agency for 911 services."	--
Other Jurisdictions			
AS	Not Specified	"The PSAP is operated as a unit of DPS Police Services Bureau and funded under the DPS annual operations budget." American Samoa did not provide a dollar figure.	--
DC	$41,607,447.00		$69.15
PR	$9,947,332.64		$2.67
USVI	$3,516,414.00		$33.05
Total	**$3,368,446,067.70**	**Average State Per Capita Expenditure**	**$18.57**
		National Per Capita Expenditure[34]	**$10.97**

C. Description of Authority Enabling Establishment of 911/E911 Funding Mechanism

13. Forty-six states, the District of Columbia, Puerto Rico, and the US Virgin Islands affirmed that their state or jurisdiction has established a funding mechanism designated for or imposed for the purposes of 911 or E911 support or implementation.[35] Oklahoma and American Samoa reported

[34] Does not include Missouri, Guam, or Northern Marianas Islands.

[35] Nevada and Wyoming did not respond to the question.

that they have not established a funding mechanism.

14. Of those states that have an established funding mechanism, Table 5 identifies twelve states that enlarged or altered their funding mechanism during calendar year 2015. Arkansas amended the amount apportioned to PSAPs.[36] Six of them – Illinois, Kansas, Kentucky, New Hampshire, Pennsylvania, and Tennessee - altered the amount of the fee they collect. North Dakota and Oregon added pre-paid wireless service to the categories of services required to contribute.[37] North Carolina amended its state statute to require the state 911 Board to allocate 10 percent of total service charges to the state's Next Generation 911 Reserve Fund.[38]

Table 5 – States That Amended or Enlarged 911 Funding Mechanism

State	Description
AR	"Yes. During the 2015 Legislative session, ACT919 was passed increasing the amount to be used exclusively for training and all related costs under A.C.A. § 12-10-325. The amount was increased from $120,000 to $200,000 thus reducing the quarterly distribution amount to the PSAPs by $80,000. There were no other alterations to the funding mechanism."
IL	"Senate Bill 96 amended the Emergency Telephone Safety Act and the Wireless Emergency Telephone Safety Act merging the requirements of both Acts into the Emergency Telephone System Act in July 2015. It also amended the Pre-paid Wireless Act. Summary of amendments to the Emergency Telephone System Act: ▪ Transferred the oversight of local 9-1-1 systems from the Illinois Commerce Commission to the Illinois State Police effective January 1, 2016. ▪ Established the Office of Statewide 911 Administrator as a division of the Department of State Police (ISP) effective January 1, 2016. The Administrator is responsible for developing, implementing, and overseeing a uniform statewide 911 system for all areas of the State outside the City of Chicago. The Administrator will be appointed by the Governor with the advice and consent of the Senate. First term expires January 1, 2017 and then on a two year cycle thereafter. ▪ Created a 9-1-1 Advisory Board effective on July 1, 2015 with 2 and 3 year terms. ▪ Established a uniform monthly surcharge of $.87 effective January 1, 2016 for wireline, VoIP and wireless connections; this surcharge is collected and disbursed by the State. Where multi voice grade communication channels are connected through a PBX or Centrex service, a 5 [sic] surcharge per network connection will apply. (Same as today.) ▪ Wireline and VoIP 9-1-1 surcharges which were managed and set by the local governments were eliminated. ▪ Established the distribution formula for the $.87 surcharge effective January 1, 2016: o $0.013 to counties under 100,000 population o $0.033 transferred to Wireless Carrier Reimbursement Fund until June 30, 2017. Thereafter, the amount transferred to the Wireless Carrier Reimbursement Fund is

[36] Arkansas Response at 8.

[37] North Dakota Response at 4; Oregon Response at 4.

[38] North Carolina Response at 4.

State	Description
	reduced each year until June 30, 2021, when transfers to that fund end. o $0.007 cover ISP administrative costs o After the disbursements listed above, all remaining funds in the Statewide 911 Fund shall be disbursed in the following priority order: o Monthly payment to 9-1-1 authorities that imposed surcharges under section 15.3 on October 1, 2014 of an amount equal to the average monthly wireline and VOIP surcharge revenue for the most recent 12-month reported to the Department for October 1, 2014 filing. o Monthly payment to counties that did not collect a wireline surcharge of an amount equal to population multiplied by .37 multiplied by the rate of $0.69. Counties that do not provide E911 will not receive funds until the service is provided. o Monthly payment to counties without E911 service but have a 911 surcharge as of December 31, 2015 in an amount equal to their population multiplied by .37 by their surcharge rate established by referendum. o All 911 network costs for systems outside of the City of Chicago, to be paid directly to vendors. o All expenses incurred by Administrator and Advisory Board associated with the NG 911 RFP and contract. o Disbursement of Annual Grants for consolidations under section 15.4a, 15.4b and for NG9-1-1 expenses up to: ▪ 2016 = $12.5 million ▪ 2017 = $12.5 million ▪ 2018 = $13.5 million ▪ 2019 = $14.5 million ▪ 2020 = $15.5 million ▪ 2021 = $16.2 million ▪ 2022 = $23.1 million o 2023 and each year thereafter $ 17 million. o All remaining funds shall be distributed to appropriate 911 authority taking wireless 911 based on the postal zip code of billing addresses of subscribers of wireless carriers. ▪ Extended Chicago's authority to impose a local surcharge of $3.90 until July 1, 2017. • Provided that the 911 surcharge shall not be applied to the lifeline subsidized portion of the service. ▪ Allows each telecommunication carrier (non-wireless) to deduct 3% of gross amount of surcharge collected to reimburse for expense of accounting and collecting surcharge. Wireless carriers will be allowed to do the same beginning July 1, 2022. ▪ Remittance of surcharge within 30 days of collection for deposit into the Statewide 911 Fund. ▪ Wireless carriers may still recover 911 service costs that are not reimbursed through the Wireless Carrier Reimbursement Fund through a direct charge to their respective customers. ▪ Required 9-1-1 systems who must consolidate to file a consolidation plan or waiver to consolidation by July 1, 2016 with the ISP. ▪ Required 9-1-1 systems to have the consolidation plan implemented by July 1, 2017. ▪ The Emergency Telephone Systems Act sunsets on June 30, 2017 Summary of amendments to the Pre-Paid Wireless Act: ▪ Increased the 911 pre-paid wireless surcharge to 3% for the State and 9% for Chicago,

State	Description
	effective on October 1, 2015. Chicago's rate will then drop to 7% effective July 1, 2017.
KS	"The 911 Coordinating Council was empowered, under the initial legislation to increase the 911 fee up to $0.60 per device. The Council exercised this authority in 2015, with the increase taking effect on October 1, 2015."
KY	"Not at the state level (major changes coming in 2016/2017); at the local level Kenton, Campbell and Garrard/Lincoln attempted to amend their local funding mechanism, repealing traditional landline fees and enacting ordinances that asses and collect an annual 911 fee on property (Kenton, Campbell) and on the monthly water utility bills (Garrard/Lincoln). Kentucky Supreme Court has now upheld the constitutionality of these ordinances. Kenton and Campbell are in effect, the Garrard and Lincoln ordinance is not yet in effect, awaiting final lower court action."
NC	"N.C.G.S. 143B-1404 was amended by SL 2015-261 requiring the 911 Board to allocate ten percent (10%) of the total service charges to the Next Generation 911 Reserve Fund. That reserve fund is administered as provided in N.C.G.S. 143B-1407(e). The allocation required by the new law became effective January 1, 2016."
ND	"Yes, Chapter 57-40.6 of the North Dakota Century Code was amended during the 63rd Legislative Assembly (2013-2014) to include a funding mechanism for fee collection of pre-paid wireless service at the "point of sale" (57-40.6-14). This legislation became effective January 1, 2014."
NH	"Effective October 2015 the Enhanced 9-1-1 surcharge was increased to $0.75 per month"
OR	"Amended statute to allow Prepaid Wireless to be collected from a retail Point of Sale."
PA	"Pennsylvania Act 12 of 2015 (Act 12) amended Chapter 53, Emergency Telephone Service, of Title 35 of the Pennsylvania Consolidated Statutes (Chapter 53) by establishing a new funding program for public safety answering points (PSAPs) across the Commonwealth, effective August 1, 2015. The new funding program includes a uniform 911 surcharge fee of $1.65, a uniform 911 Fund for collecting surcharges, and updated procedures related to remitting and distributing surcharge revenues. Act 12 was signed into law on June 29, 2015 and took effect August 1, 2015."
TN	"The 911 Funding Modernization and IP Transition Act, which created a new funding mechanism for 911 in Tennessee, took effect January 1, 2015. It provides a uniform 911surcharge of $1.16 on all telecommunications devices in the state that are capable of reaching a PSAP by dialing 9-1-1."

15. The questionnaire asked states to describe the type of authority arrangement for the

collection of 911 fees, specifically whether 911/E911 funds are collected by the state (or equivalent jurisdiction), by local jurisdictions, or by a combination of the two. As described in Table 6 below, 27 states, the District of Columbia, Puerto Rico, and the US Virgin Islands reported that they collect all 911 fees on a statewide basis, with the collected funds administered by the state.[39]

Table 6 – Authority to Collect 911/E911 Fees

Type of Collection	Number of States/Jurisdictions
State Collection	30
Local Authority	6
Hybrid	16

16. Six states - Alaska, Georgia, Mississippi, Nevada, Wisconsin, and Wyoming - reported that 911 fee collection occurs exclusively at the local level, although in some cases such local collection is authorized by state statute. Georgia states that "landline and post-paid wireless 9-1-1 fees are remitted directly to local governments by the service providers.[40] Similarly, Mississippi stated that "all funds collected by service providers are awarded directly to the counties."[41]

17. Sixteen states reported using a hybrid approach to 911 fee collection, in which state and local governing bodies share authority over fee collection from customers.[42] For example, South Carolina reported that "46 counties and 4 municipalities receive a quarterly distribution of a portion of the wireless surcharge based on total wireless call volume for that time period, which must be used specifically for 911 or E911 purposes. An additional amount of the wireless surcharge is available for reimbursement to these counties and municipalities for upgrading, acquiring, maintaining, programming, and installing necessary data, hardware and software to comply with certain FCC requirements."[43] Ohio stated that "state funding is collected by the Ohio Department of Taxation and disbursed to the 88 counties."[44]

D. Description of State Authority that Determines How 911/E911 Fees are Spent

18. The Bureau requested that states and jurisdictions identify the entity that has authority to approve the expenditure of funds collected for 911 purposes. As detailed in Table 7, fourteen states, the

[39] States include Alabama, Arizona, California, Connecticut, Delaware, Florida, Hawaii, Indiana, Kansas, Maine, Maryland, Massachusetts, Minnesota, Montana, New Hampshire, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Utah, Vermont, and Virginia.

[40] Georgia Response at 4.

[41] Mississippi Response at 4.

[42] This category includes Arkansas, Colorado, Idaho, Illinois, Iowa, Kentucky, Louisiana, Michigan, Nebraska, New York, North Dakota, Ohio, South Carolina, Texas, Washington, and West Virginia.

[43] South Carolina Response at 4-5.

[44] Ohio Response at 4.

District of Columbia, Puerto Rico, and the US Virgin Islands indicated that a state entity has authority to approve expenditure of 911 fees. Nine states described authority resting exclusively with local entities. The majority of responding states – twenty-three - indicated the authority is shared between state and local authorities.

19. The Bureau also sought information on whether states have established a funding mechanism that mandates how collected funds may be used. As indicated in Table 7, states that responded 'no' to this question typically cede control of how 911 funds are spent to local jurisdictions. Forty-two states, the District of Columbia, Puerto Rico, and the US Virgin Islands responded that they have a mechanism mandating how 911 fees may be spent, whereas seven states and American Samoa indicated they have no such mechanism.

Table 7 – State Authority for Approval of 911 Fee Expenditures

State	State, Local, or Combined Authority to Approve Expenditures			State Funding Mechanism Mandating *How* Funds Can be Used
	State	Local	Both	
AK		X		No
AL			X	Yes
AR			X	Yes
AZ	X			Yes
CA	X			Yes
CO		X		Yes
CT	X			Yes
DE			X	Yes
FL			X	Yes
GA		X		No
HI	X			Yes
IA			X	Yes
ID		X		No
IL		X		Yes
IN			X	Yes
KS			X	Yes
KY			X	Yes
LA		X		Yes
MA	X			Yes
MD	X			Yes
ME	X			Yes
MI			X	Yes
MN	X			Yes
MS		X		No

State	State, Local, or Combined Authority to Approve Expenditures			State Funding Mechanism Mandating *How* Funds Can be Used	
	State	Local	Both		
MT			X	Yes	
NC	X			Yes	
ND		X		Yes	
NE			X	Yes	
NH	X			Yes	
NJ	X			Yes	
NM	X			Yes	
NV		X		No	
NY			X	Yes	
OH			X	Yes	
OK		X		No	
OR			X	Yes	
PA			X	Yes	
RI	X			Yes	
SC			X	Yes	
SD			X	Yes	
TN			X	Yes	
TX			X	Yes	
UT			X	Yes	
VA			X	Yes	
VT	X			Yes	
WA			X	Yes	
WI	Not Applicable - LECs Bill and Keep			Yes	
WV			X	Yes	
WY		X		No	
Other Jurisdictions					
AS	911 Fees Not Collected			No	
DC	X			Yes	
PR	X			Yes	
USVI	X			Yes	
Totals	**State**	**Local**	**Both**	**Yes**	**No**
	17	**9**	**23**	**45**	**8**

E. Description of Uses of State 911 Fees

20. The Bureau asked responding states to provide a statement identifying with specificity "all activities, programs, and organizations for whose benefit your state, or political subdivision thereof, has obligated or expended funds collected for 911 or E911 purposes and how these activities, programs, and organizations support 911 and E911 services or enhancements of such services." Forty six states, the District of Columbia, Puerto Rico, and the US Virgin Islands provided a description as requested.[45]

21. Alabama stated that all "funds collected for 911 or E911 have been received by the 88 Emergency Communications Districts (ECDs) in the State of Alabama and have been used to support the activities of those 911 districts by providing funding to maintain, and in some cases enhance, the 911 service provided to their populous."[46] According to Michigan, state 911 fee are distributed to multiple entities, including $150,000 annually to the Treasury for its administration of the fund; 82.5 percent to the counties to fund 911 operations; 7.75 percent to pay the 911 service providers for the delivery of wireless calls to the PSAPs; 6 percent for PSAP training funds; 1.88 percent to the Michigan State Police PSAPs; and 1.87 percent to fund the State 911 Office.[47] Some states pointed out that funds are managed solely at the local level. Colorado stated that "a comprehensive list [of activities] cannot be provided by the state, as spending authority rests in the hands of 58 separate local 911 Authorities, and each may spend funds as they see fit within the authority of CRS § 29-11-104."[48]

22. The Bureau also requested that states identify whether their 911 fee collections were authorized to be used for specific expenditure categories, including (1) operating costs for customer premises equipment (CPE), computer aided dispatch (CAD) equipment and building and facilities; (2) personnel costs (telecommunicator salaries and training); (3) administrative costs associated with program administration and travel expenses; and (4) dispatch costs, including reimbursements to other law enforcement entities providing dispatch services and lease, purchase, and maintenance of radio dispatch networks. State responses to this data request are compiled in Table 8.

- Most responding states indicated that 911 funds could be used to cover operating expenses for CPE (46 states), CAD (36 states), and buildings and facilities (29 states).
- With respect to personnel costs, thirty-one states reported applying 911 funds to salaries and forty-two states reported applying funds to training.
- Most states also applied 911 funds to administrative costs, with forty-one covering program administration and thirty-nine applying funds to travel expenses.
- As reported last year, fewer states reported applying 911 fees to dispatch-related costs. Nineteen states reported using 911 fees to reimburse other law enforcement entities providing dispatch service, while twenty-eight states reported that they used 911 funds to lease, purchase, or otherwise maintain radio dispatch networks.

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[45] Nevada did not respond to this question.

[46] Alabama Response at 7.

[47] Michigan Response at 7.

[48] Colorado Response at 7. *See also* Idaho Response at 6; Louisiana Response at 6; Mississippi Response at 7.

Table 8 – Allowed Uses of Collected Fees

	Operating Costs			Personnel Costs		Administrative Costs		Dispatch Costs	
State	Lease, Purchase, Maintenance of CPE (hardware and software)	Lease, Purchase, Maintenance of CAD (hardware and software)	Lease, Purchase, Maintenance of Building and Facilities	Salaries	Training	Program Administration	Travel Expenses	Reimbursement to Other Law Enforcement Providing Dispatch	Lease, Purchase, Maintenance of Radio Dispatch Networks
AK	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
AL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
AZ	Yes	No	No	No	No	Yes	Yes	No	No
CA	Yes	No	No	No	Yes	Yes	Yes	No	No
CO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CT	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
DE	Yes	Yes	No	No	No	Yes	Yes	No	No
FL	Yes	No	No	Yes	Yes	Yes	Yes	No	No
GA	Yes	Yes	Yes	Yes	Yes	Unknown	Unknown	Unknown	Yes
HI	Yes	Yes	No	No	Yes	No	Yes	No	Yes
IA	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
ID	Yes	No	Yes	No	Yes	No	No	No	No
IL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IN	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
KS	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
KY	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LA	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
MA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MD	Yes	No	No	Yes	Yes	Yes	Yes	No	No
ME	Yes	No	No	No	Yes	Yes	Yes	No	No
MI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MN	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes
MS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NC	Yes	Yes	No	No	Yes	Yes	Yes	No	No
ND	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NE	Yes	Yes	No	No	Yes	Yes	Yes	No	No
NH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
NJ	No	No	No	No	No	Yes	No	No	No
NM	Yes	No	No	No	No	Yes	Yes	No	No
NV	Varies by County								
NY	Did Not Respond to Question								

	Operating Costs			Personnel Costs		Administrative Costs		Dispatch Costs	
State	**Lease, Purchase, Maintenance of CPE (hardware and software)**	**Lease, Purchase, Maintenance of CAD (hardware and software)**	**Lease, Purchase, Maintenance of Building and Facilities**	**Salaries**	**Training**	**Program Administration**	**Travel Expenses**	**Reimbursement to Other Law Enforcement Providing Dispatch**	**Lease, Purchase, Maintenance of Radio Dispatch Networks**
OH	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
OK	Yes	Yes	No	Yes	No	No	No	Yes	No
OR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
PA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
RI	Did Not Respond to Question								
SC	Yes	Yes	No	No	Yes	Yes	Yes	No	No
SD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TX	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
UT	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
VA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VT	Yes	No	No	No	Yes	Yes	Yes	No	No
WA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
WI	No	No	No	No	No	No	No	No	No
WV	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
WY	Did Not Respond to Question								
Other Jurisdictions									
AS	Did Not Respond to Question								
DC	Yes	Yes	Yes	No	No	No	No	No	Yes
PR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USVI	Yes	Yes	Yes	No	Yes	No	No	No	Yes

23. The Bureau requested information related to the use of 911 funds to support state grant programs. Nineteen states reported that they paid for grants through the use of collected 911 fees, and twenty-eight said they did not.[49] Table 9 provides responding states' descriptions of their grant programs.

[49] Mississippi, Nevada, New York, Oklahoma, Rhode Island, Wyoming, and American Samoa did not respond to this question.

Table 9 – State Grants or Grant Programs

State	Describe the grants that your state paid for through the use of collected 911/E911 fees and the purpose of grant
AL	"A total of $110,800.00 was granted to an individual district based on the demonstration of need for purchase of GIS data management and map based computer aided dispatch systems. Grant funds are only available from the state office's administrative 1% and during this time frame only $150,000.00 was available."
CT	"Capital expense grants and transition grants for the purpose of consolidation PSAPs."
IA	"The State did not have any external grants available during this time frame. The state operated an E911 Carryover Grant as detailed in Code of Iowa 34A. From January 1, 2015-December 31, 2015, $100,000 was available per PSAP to local county service boards and no match was required. For the entire year, approval of the grant money was made by the E911 Program Manager and the E911 Communications Council for PSAP improvements."
ID	"Pursuant to Idaho Code §31-4803, a county must get voter approval to institute an emergency communications fee in an amount no greater than one dollar ($1.00) per month per "telephone line". The Act has been amended in recent years to include assessing the fee on both wireless and Voice over Internet Protocol (VoIP) service and now uses the term "access line" to indicate that all technology that is able to provide dial tone to access 9-1-1 is mandated to collect the fee. In 2008, the Idaho Legislature promulgated the implementation of an Enhanced Emergency Communications Grant Fee that was signed into law by the Governor and became Idaho Code §31-4819. This additional fee can be imposed by the boards of commissioners of Idaho counties in the amount of $0.25 per month per access line to be contributed to the Enhanced Emergency Communications Grant Fund. The funds are distributed via a grant process governed by the IECC. Thirty-eight Idaho counties have begun assessing the enhanced fee."
KS	"The Council has used the grant funds, which are derived from the 1.20% fee placed on prepaid wireless sales, to fund projects that are of statewide benefit, rather than making individual PSAP grants. These projects to date are the statewide GIS Enhancement Project, Statewide digital orthoimagery, consulting services for NG911, planning and implementation, and statewide NG911 program management. Council operating expenses are also paid from the state grant fund. The grant funds are also utilized to pay nonrecurring costs for the statewide ESInet and call handling system and for recurring costs for the ESInet."

State	Describe the grants that your state paid for through the use of collected 911/E911 fees and the purpose of grant
MA	"The State 911 Department has developed and administers grant programs to assist PSAPs and regional emergency communication centers, or RECCs, in providing enhanced 911 service and to foster the development of regional PSAPs, regional secondary PSAPs, and RECCs. M.G.L. Chapter 6A, Section 18B(i) requires that the State 911 Department fund the following grant programs: the PSAP and Regional Emergency Communications Center Training Grant ("Training Grant"); the PSAP and Regional Emergency Communication Center Support Grant ("Support Grant"); the Regional PSAP and Regional Emergency Communication Center Incentive Grant ("Incentive Grant"); the Wireless State Police PSAP Grant; and the Regional and Regional Secondary PSAP and Regional Emergency Communications Center Development Grant ("Development Grant"). See MG.L. Chapter 6A, Sections 18B(i)(1)-(5). The statute also permits the State 911 Department to introduce new grants associated with providing enhanced 911 service in the Commonwealth. See MG.L. Chapter 6A, Section 18B(f). As permitted by the statute, in 2011, the State 911 Department introduced a new grant, the Emergency Medical Dispatch ("EMD") Grant. The statute provides that the State 911 Commission shall approve all formulas, percentages, guidelines, or other mechanisms used to distribute these grants. See M.G.L. Chapter 6A, Section 18B(a). The eligibility requirements, purpose, use of funding, including categories of use of funds, application process, grant review and selection process, and grant reimbursement process for each of these grants are set forth in the Grant Guidelines that are approved by the State 911 Commission. These Grant Guidelines are available on the State 911 Department website at www.mass.gov/e911."
MD	"9-1-1 Trust Fund monies are distributed for enhancements to county 9-1-1 service."
MN	"According to Minn. Stat. §403.113, a portion of the fee collected must be used to fund implementation, operation, maintenance, enhancement, and expansion of enhanced 911 service, including acquisition of necessary equipment and the costs of the commissioner to administer the program. In CY2015 a total of $13,664,000 in funding was allocated to MN PSAPs using the funding mechanism described above."

State	Describe the grants that your state paid for through the use of collected 911/E911 fees and the purpose of grant
NC	"Burke County: PSAP Consolidation with Sheriff's Dept., Morganton Police, Valdese Fire Stanley County: Install a 911 Network with Brunswick and Haywood County Rockingham County: PSAP Consolidation Rockingham Sheriff, Eden Police, Reidsville Police, Madison PD, Mayodan Police, Stoneville Police, Rockingham Fire, Rockingham EMS, Rockingham Co Rescue Squad Brunswick County: PSAP Consolidation Brunswick and Oak Island Lenoir County: PSAP Consolidation Lenoir Co and Jones Co for all law enforcement, EMS and fire depts within each county Gates County: PSAP Equipment Upgrade Henderson County: PSAP Relocation Hertford County: PSAP Consolidation Hertford Co, Murfreesboro PD & Ahoskie PD Orange County: PSAP Equipment Upgrade Swain County: 911 Equipment Enhancement/Replacement Program Caldwell County: PSAP Upgrade and create a backup PSAP Dare County: PSAP Consolidation with Tyrell County Haywood County: PSAP Consolidation with Sheriff's Dept. and upgrade PSAP Equipment Swain-Jackson County: Create Regional PSAP Connectivity E-CATS: Emergency Call Tracking System (call answering statistics) Ortho Project Image 14: Image 14 Northern Piedmont 26 Counties (Orthoimagery Mapping) Ortho Project Image 15 Image 15 Southern Piedmont 24 Counties (Orthoimagery Mapping)"
NE	"Within the 911-SAM cost model for wireless funds, the PSC established a WSP grant fund. The details of which can be found on pages 11 and 12 of the following linked order. This grant fund is being phased out and will no longer be available in the 2017-2018 fiscal year. http://psc.nebraska.gov/orders/ntips/911-019.PI-118.14.pdf."
NM	"Grants to local government pay for E-911 equipment and maintenance, generators, dispatch consoles, recorders, dispatch software, GIS equipment and training, 911 training, 911 and Data Networks, Network termination equipment, such as routers, firewalls and switches."
NY	"The Division of Homeland Security and Emergency Services (DHSES) supports the following grant programs through the $75 million appropriation: 1. $45 million for Round V of the State Interoperable Communications grant program; 2. $10 million for the PSAP grant program 3. $20 million in capital and targeted grants."

State	Describe the grants that your state paid for through the use of collected 911/E911 fees and the purpose of grant
TN	"The TECB offered ECDs non-recurring (one-time) funding and reimbursements for the purchase of essential equipment and other items up to the following amounts: • $50,000 for Geographic Information System ("GIS") Mapping Systems • $40,000 for Controllers • $450,000 for Essential Equipment • $5,000 for Master Clocks • $150,000 to each ECD that Consolidates (to a maximum of 3 ECDs) • $1,000 to Train Dispatcher Trainers • $100,000 to Cover Uninsured Catastrophic Event Losses The TECB also made $25 million available to ECDs for CPE equipment used to connect them to the state-wide NG911 platform the state is deploying to modernize Tennessee's 911 infrastructure. The funding plan provided each ECD with a base amount of $120,000 plus an additional amount determined by the district's population. As of January, 2015, the TECB ceased these funding programs due to the new funding law. However, the TECB is still distributing funds from the essential and necessary equipment fund until the funding is exhausted."
TX	"The state 9-1-1 program administered by CSEC provides grants of legislatively appropriated 9-1-1 and equalization surcharge funds to 23 RPCs for the specific purpose of providing 9-1-1 service in each RPC's region. CSEC provides grants of appropriated surcharge revenues to six Regional Poison Control Center host hospitals to partially fund the state Poison Control Program. (Equalization surcharge revenue is also appropriated to UTMB-Galveston, the Department of State Health Services, and TTUHSC to fund emergency medical dispatch services, county and regional emergency medical services and trauma care, and a telemedicine medical services pilot program, respectively.)"
UT	"Grants for CPE equipment were paid through the use of collected 911/E911 fees from the statewide $0.09 fee (9 cent fund) directed to the Utah 911 Advisory Committee. Grants for consulting services regarding a CAD study were paid from the statewide Computer Aided Dispatch $0.06 fee (6 cent fund). Grants for CAD functional elements were paid from the statewide Computer Aided Dispatch $0.06 fee (6 cent fund)."
VA	"The PSAP Grant Program is a multi-million dollar grant program administered by the Virginia E-911 Services Board. The primary purpose of this program is to financially assist Virginia primary PSAPs with the purchase of equipment and services that support Next Generation 9-1-1 (NG-91-1) and Enhanced (E)-911. Any Virginia primary PSAP that supports wireless E-911 is eligible to apply for and receive these funds either as an individual applicant or as part of a shared services project."

State	Describe the grants that your state paid for through the use of collected 911/E911 fees and the purpose of grant
WA	"The state provides operational funding grants to smaller counties that do not collect sufficient local 911 excise tax revenues to support a basic level 911 program. These grants provide for salaries, equipment, maintenance, and training funds."
WV	"One million ($1,000,000.00) dollars per year is awarded by the Public Service Commission of West Virginia as grants for the construction of cell towers, pursuant to WV Code §24-6-6b"

F. Description of 911/E911 Fees Collected

24. In order to provide an overview of the sources of 911 fees, the questionnaire directed respondents to describe the amount of fees or charges imposed for the implementation and support of 911 and E911 services and to distinguish between state and local fees for each service type (wireline, wireless, prepaid wireless, VoIP, and other services). Table 10 provides an overview of the number of states and localities that levy a fee on each service type.

Table 10 – Summary of State and Local Authorities That Levy 911 Fees

Service Type	State	Local	Both	No Response or No Fee
Wireline	26	16	5	5
Wireless	36	5	5	3
Prepaid	36	1	3	7
VoIP	25	10	6	6
Other	6	1	0	29

25. Table 11 details the fees that each reporting state and jurisdiction levied on wireline, wireless, prepaid, VoIP and other services during calendar year 2015.

Table 11 – State Description of Service Type and Associated Fees

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
AK	Wireline	Up to 2.00 per phone		X		
	Wireless	Up to 2.00 per phone	X			
	Prepaid	N/A				
	VoIP	N/A				
	Other					X
AL	Wireline	$1.75	X			
	Wireless	$1.75	X			
	Prepaid	$1.75	X			
	VoIP	$1.75	X			
	Other	$1.75	X			
AR	Wireline	Amount up to five percent (5%) or for any counties with a population fewer than 27,500 the amount may be up to twelve percent (12%) of the tariff rate (Note: Four Arkansas Counties have not levied the wireline surcharge.)		X		
	Wireless	$0.65	X			
	Prepaid	$0.65 per transaction	X			
	VoIP	$0.65	X			
	Other					X
AZ	Wireline	$0.20 per month each activated wire service account	X			
	Wireless	$0.20 per month each activated wireless service account	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	Prepaid	.80 of one percent from the retail sale of wireless services. Retailer can retain 3% prior to submittal	X			
	VoIP	$0.20 per month each activated wire service account	X			
	Other	None				X
CA	Wireline	$0.75 of 1%	X			
	Wireless	$0.75 of 1%	X			
	Prepaid	$0.75 of 1%	X			
	VoIP	$0.75 of 1%	X			
	Other	N/A				X
CO	Wireline	$0.43 to $1.75		X		
	Wireless	$0.43 to $1.75		X		
	Prepaid	1.4% of retail sales of minutes	X			
	VoIP	$0.43 to $1.75		X		
	Other	None				X
CT	Wireline	$0.51 per access line	X			
	Wireless	$0.51 per access line	X			
	Prepaid	$0.51 per access line	X			
	VoIP	$0.51 per access line	X			
	Other					X
DE	Wireline	$0.60 per line	X			
	Wireless	$0.60 per line	X			
	Prepaid	$0.60 per line	X			
	VoIP	$0.60 per line	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	Other					X
FL	Wireline	$0.40 cents per month The fee applies uniformly and is imposed throughout the state, except for three counties that, before July 1, 2007, had adopted an ordinance or resolution establishing a fee less than the previous fee of $0.50 per month, per access line.	X			
	Wireless	$0.40 per month	X			
	Prepaid	$0.40 per month	X			
	VoIP	$0.40 per month	X			
	Other					X
GA	Wireline	$1.50 per month		X		
	Wireless	$1.00 per month		X		
	Prepaid	$0.75 per transaction		X		
	VoIP	$1.50 per month		X		
	Other					X
HI	Wireline	$0.27 per user per month			Hawaiian Telcom Bill and Keep	
	Wireless	$0.66 per user month	X			
	Prepaid	None				X
	VoIP	$0.66 per user month	X			
	Other					X
IA	Wireline	$1.00 per line per month				
	Wireless	$1.00 per line per month				
	Prepaid	$0.51 per transaction				

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP	$1.00 per line per month	Nomadic VoIP	Static VoIP		
	Other					X
ID	Wireline	$1.00 or $1.25	If collecting $1.00, $0.99 to local, $0.01 to ECC Operations If collecting $1.25, $0.99 to local, $0.01 to ECC Operations and $0.25 to Grant Fund			
	Wireless	$1.00 or $1.25	If collecting $1.00, $0.99 to local, $0.01 to ECC Operations If collecting $1.25, $0.99 to local, $0.01 to ECC Operations and $0.25 to Grant Fund			
	Prepaid	2.5% at point of sale	99% to local 1% to ECC Operations			
	VoIP	$1.00 or $1.25	If collecting $1.00, $0.99 to local, $0.01 to ECC Operations If collecting $1.25, $0.99 to local, $0.01 to ECC Operations and $0.25 to Grant Fund			
	Other					X
IL	Wireline	Fee ranges from $0.30 to $5.00		X		
	Wireless	$0.73	X			
	Prepaid	1.5% per retail transaction	X			
	VoIP	Fee ranges from $0.30 to $5.00		X		
	Other					X
IN	Wireline	$1.00	X			
	Wireless	$1.00	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	Prepaid	$1.00 per transaction	X			
	VoIP	$1.00	X			
	Other					X
KS	Wireline	$0.60 per subscriber account	X			
	Wireless	$0.60 per subscriber account	X			
	Prepaid	$0.60 per subscriber account	X			
	VoIP	$0.60 per subscriber account	X			
	Other	$0.60 per subscriber account	X			
KY	Wireline	$0.32 to $4.00 (varies by county)		X		
	Wireless	$0.70	X			
	Prepaid	Impose $0.70 per transaction, but collect $0.30 per transaction	X			
	VoIP	$0.32 to $4.00 (varies by county)		X		
	Other	Campbell County: $45 annual fee per occupied residence or business Kenton County: $60 annual fee per real-estate parcel		X		
LA	Wireline	Up to 5% of Tariff Rate on Exchange Service		X		
	Wireless	$0.85 for all Parishes except for Caddo County is $1.00 and Jefferson/St. Bernard is $1.26		X		
	Prepaid	2% at point of sale	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP	NR		X		
	Other					X
MA	Wireline	$0.75 cents per month through 6/30/15 $1.25 per month effective 7/1/15	X			
	Wireless	$0.75 cents per month through 6/30/15 $1.25 per month effective 7/1/16	X			
	Prepaid	$0.75 cents per month through 6/30/15 $1.25 per month effective 7/1/17	X			
	VoIP	$0.75 cents per month through 6/30/15 $1.25 per month effective 7/1/18	X			
	Other					X
MD	Wireline	$1.00			$0.25 to State Trust Fund $0.75 to county	
	Wireless	$1.00			$0.25 to State Trust Fund $0.75 to county	
	Prepaid	$1.00			$0.25 to State Trust Fund $0.75 to county	
	VoIP	$1.00			$0.25 to State Trust Fund $0.75 to county	
	Other					X
ME	Wireline	$0.45	X			
	Wireless	$0.45	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	Prepaid	$0.45	X			
	VoIP	$0.45	X			
	Other					X
MI	Wireline	$0.19 (state) $0.20 to $3.00 (local)	X	X		
	Wireless	$0.19 (state) $0.20 to $3.00 (local)	X	X		
	Prepaid	1.92% per transaction				
	VoIP	$0.19 (state) $0.20 to $3.00 (local)	X	X		
	Other					X
MN	Wireline	$0.78	X			
	Wireless	$0.78	X			
	Prepaid	$0.78	X			
	VoIP	$0.78	X			
	Other					X
MS	Wireline	$1.00 per residential line $2.00 per commercial line		X		
	Wireless	N/A				X
	Prepaid	N/A				X
	VoIP	$1.00 per line		X		
	Other					X
MT	Wireline	$1.00	X			
	Wireless	$1.00	X			
	Prepaid	None				X

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP	None				X
	Other					X
NC	Wireline	$0.60	X			
	Wireless	$0.60	X			
	Prepaid	$0.60	X			
	VoIP	$0.60	X			
	Other					X
ND	Wireline	$1.00-$1.50		X		
	Wireless	$1.00-$1.50		X		
	Prepaid	2% of gross receipts at point of sale	X			
	VoIP	$1.00-$1.50		X		
	Other					X
NE	Wireline	$0.50 to $1.00 per line		X		
	Wireless	$0.45	X			
	Prepaid	1% of transaction	X			
	VoIP	$0.50 to $1.00 per line		X		
	Other					X
NH	Wireline	$0.75	X			
	Wireless	$0.75	X			
	Prepaid	$0.75	X			
	VoIP	$0.75	X			
	Other					X
NJ	Wireline	$0.90 per month	X			
	Wireless	$0.90 per month	X			
	Prepaid	None				X

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP	$0.90 per month	X			
	Other					X
NM	Wireline	$0.51 per line per month	X			
	Wireless	$0.51 per line per month	X			
	Prepaid	None				
	VoIP	None				
	Other					X
NV	Wireline	$0.25 or greater per line (varies by county)		X		
	Wireless	$0.25 or greater per line (varies by county)		X		
	Prepaid	None				X
	VoIP	$0.25 or greater per line (varies by county)				
	Other					X
NY	Wireline	$0.35 to $1.00 per month per access line			X	
	Wireless	State: $1.20 per month per device Local: $0.30 per month per device			X	
	Prepaid	None				X
	VoIP	$0.25 or greater per line (varies by county)		X		
	Other					X
OH	Wireline					
	Wireless	$0.25 per month	X			
	Prepaid	.05% at point of sale	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP					
	Other					
OK	Wireline	Percentage of bill [Not Specified]		X		
	Wireless	$0.50	X			
	Prepaid	$0.50		X		
	VoIP					X
	Other					X
OR	Wireline	$0.75	X			
	Wireless	$0.75	X			
	Prepaid	$0.75	X			
	VoIP	$0.75	X			
	Other					X
PA	Wireline	$1.00 - $1.50 through 7/31/2015 $1.65 effective 8/1/2015			"67 counties and 2 cities (Allentown and Bethlehem) All funds are remitted to the Commonwealth effective 8/1/2015."	
	Wireless	$1.00 through 7/31/2015 $1.65 effective 8/1/2015	X			
	Prepaid	$1.00 through 7/31/2015 $1.65 effective 8/1/2015	X			
	VoIP	$1.00 - $1.50 through 7/31/2015 $1.65 effective 8/1/2015			"Funds are remitted to either the State Treasurer or the 67 Counties and 2 cities (Allentown &	

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
					Bethlehem). All funds are remitted to the Commonwealth effective 8/1/2015."	
	Other					X
RI	Wireline	$1.00 per access line	X			
	Wireless	$1.26 per line	X			
	Prepaid	2.5% per retail transaction	X			
	VoIP	$1.26 per line	X			
	Other					X
SC	Wireline	$0.45 - $1.00		X		
	Wireless	$0.62	X			
	Prepaid	$0.62	X			
	VoIP	$0.45 - $1.00		X		
	Other					X
SD	Wireline	$1.25 per line	X			
	Wireless	$1.25 per line	X			
	Prepaid	2% at point of sale	X			
	VoIP	$1.25 per line	X			
	Other					X
TN	Wireline	$1.16 per line	X			
	Wireless	$1.16 per line	X			
	Prepaid	$1.16 per line	X			
	VoIP	$1.16 per line	X			
	Other	$1.16 per line	X			X

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
TX	Wireline	State 9-1-1 Program (CSEC/RPC): The wireline fee is set by CSEC at $0.50 per access line/per month (the rate is capped by statute at $0.50). Emergency Communications Districts: Residential: $0.20 - $1.44 per local exchange access line/month. Business: $0.46 - $5.40 per access line/month, up to a 100 line maximum in most ECD service areas. Business Trunk: $0.74 to $5.40."	"In the state 9-1-1 program area (CSEC/RPCs), wireline fees are collected and remitted to the Texas Comptroller of Public Accounts (Texas Comptroller) and deposited into a general revenue dedicated account (GRD). Funds in the GRD are appropriated by the Texas Legislature to CSEC on a biennial basis to fund 9-1-1 service in the state 9-1-1 program. In ECD (statutory and municipal) service areas, wireline fees are set by each ECD; and collected and remitted directly to the ECD."			
	Wireless	$0.50 per line	X			
	Prepaid	2% of purchase price	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP	State 9-1-1 Program (CSEC/RPC): The wireline fee is set by CSEC at $0.50 per access line/per month (the rate is capped by statute at $0.50). Emergency Communications Districts: Residential: $0.20 - $1.44 per local exchange access line/month. Business: $0.46 - $5.40 per access line/month, up to a 100 line maximum in most ECD service areas. Business Trunk: $0.74 to $5.40."	"In the state 9-1-1 program area (CSEC/RPCs), wireline fees are collected and remitted to the Texas Comptroller of Public Accounts (Texas Comptroller) and deposited into a general revenue dedicated account (GRD). Funds in the GRD are appropriated by the Texas Legislature to CSEC on a biennial basis to fund 9-1-1 service in the state 9-1-1 program. In ECD (statutory and municipal) service areas, wireline fees are set by each ECD; and collected and remitted directly to the ECD."			
	Other	State equalization surcharge: $0.06/month per local exchange access line access line or wireless telecommunications connection (excluding connections that constitute prepaid wireless telecommunications service).	X			
UT	Wireline	$0.76	X			
	Wireless	$0.76	X			
	Prepaid	1.9% at point of sale	X			
	VoIP	$0.76	X			
	Other	$0.76	X			
VA	Wireline	$0.75	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	Wireless	$0.75	X			
	Prepaid	$0.50	X			
	VoIP	$0.75	X			
	Other					X
VT	Wireline	2% customer telecommunications charges	X			
	Wireless	2% customer telecommunications charges	X			
	Prepaid	2% customer telecommunications charges	X			
	VoIP	Voluntary	X			
	Other					X
WA	Wireline	State: $0.25 per line County: $0.70 per line			X	
	Wireless	State: $0.25 per line County: $0.70 per line			X	
	Prepaid	State: $0.25 per line County: $0.70 per line			X	
	VoIP	State: $0.25 per line County: $0.70 per line			X	
	Other					X

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
WI	Wireline	Varies by county	Participating local exchange carriers			
	Wireless	None				X
	Prepaid	None				X
	VoIP	None				X
	Other					X
WV	Wireline	Varies by county		X		
	Wireless	$3.00 per line	X			
	Prepaid	6% at point of sale	X			
	VoIP	Varies by county		X		
	Other					X
WY	Wireline	Did Not Respond to the Question				
	Wireless					
	Prepaid					
	VoIP					
	Other					
Other Jurisdictions						
AS	Wireline	"N/A"				
	Wireless	"N/A"				
	Prepaid	"N/A"				
	VoIP	"N/A"				
	Other	"N/A"				
DC	Wireline	$0.76 per line	X			
	Wireless	$0.76 per line	X			
	Prepaid	2% at the retail point of sale and sales made over Internet	X			

State	Service Type and Fee		Jurisdiction Receiving Remittance			
	Type	Fee	State	Local	Combo or Other	None
	VoIP	$0.76 per line	X			
	Other	Centrex $0.62 PBX Trunks $4.96 per Trunk	X			
PR	Wireline	$0.50 per residential line $1.00 per commercial line	X			
	Wireless	$0.50 per residential line $1.00 per commercial line	X			
	Prepaid	$0.50	X			
	VoIP	None				X
	Other					X
USVI	Wireline	$1.00	X			
	Wireless	$1.00	X			
	Prepaid	$1.00	X			
	VoIP	$1.00	X			
	Other					X

26. The questionnaire asked states to report the total amount collected pursuant to the assessed fees or charges by service type, including wireline, wireless, VoIP, prepaid wireless, and any other service-based fees. Table 12 shows that, in total, states and other jurisdictions reported collecting approximately $2,631,705,008.98 in 911 fees or related charges for calendar year 2015. Table 12 also includes the Bureau's estimate of annual fee collections on a per capita basis for each reporting state and jurisdiction. Although 911 fees are typically collected on a per customer basis rather than a per capita basis, the per capita estimate nonetheless provides a useful benchmark for comparing fee collections and expenditures across states and other jurisdictions.

Table 12– Total Amount Collected in 911 Fees by Service Type

State	Wireline	Wireless	VoIP	Prepaid	Other	Total	Estimated Amount Collected Annually Per Capita[50]
AK	$4,194,179.23	$8,642,934.45	--	--	--	$12,837,113.68	$18.07
AL	$19,019,481.88	$64,603,268.94	--	$32,817,352.51	--	$116,440,103.36	$24.36
AR	$7,390,852.50	$15,564,456.33	Included in Wireline and Wireless	$4,030,246.16	--	$26,985,554.99	$9.25
AZ	$17,035,154.00			$2,152,519.00	$39,549.00	$19,227,222.00	$3.01
CA	Not Specified					$87,838,234.00	$2.36
CO[51]	$11,217,995.00	$32,949,356.00	$5,495,091.00	$3,070,289.00	--	$52,732,731.00	$10.49
CT	Not Specified					$32,564,308.00	$9.11
DE	Not Specified					$8,159,730.03[52]	$9.09
FL	$19,945,141.00	$63,967,822.00	$17,763,020.00	$6,550,974.00	--	$108,226,957.00	$5.76
GA	Unknown	Unknown	Unknown	$17,659,037.41 (GA Fiscal Year 7/1/14-6/30/15)	--	$17,659,037.41	$1.82
HI	$802,130.87	$8,469,123.00	$965,779.00		--	$10,237,032.00	$7.53
IA	$12,390,169.00	$26,124,016.75		$2,033,581.44	--	$40,547,767.19	$13.31

[50] Bureau estimate based on United States 2010 Census data for each jurisdiction.

[51] Colorado reported that its wireline, wireless, and VoIP fee collections are "extrapolated based on partial survey responses from local 911 Authorities." Further, it stated that "updated figures for 2015 are unavailable. This figure is carried forward from the 2015 NET 911 Act Report, reporting 2014 collection data." Colorado Response at 10.

[52] Delaware did not provide a total amount collected. For purposes of overall analysis, the Bureau uses the amount Delaware reported it collected during the 2014 annual period.

State	Wireline	Wireless	VoIP	Prepaid	Other	Total	Estimated Amount Collected Annually Per Capita[50]
ID	$17,244,632.00			$1,593,302.58	$2,128,681.86 (based on $.25 grant monies collected and used for local grants)	$20,952,378.70	$13.37
IL	$32,545,952.00	$57,045,443.00	$5,908,954.00	Included in wireless	--	$95,500,349.00	$7.44
IN	$9,339,826.53	$52,195,417.60	$8,816,671.16	$8,756,942.56	--	$79,108,857.85	$12.20
KS	$19,359,085.98			$1,462,888.26	--	$20,821,974.24	$7.30
KY	$27,500,000.00	$22,500,000.00	Included in Wireline	$3,500,000.00	Unknown	$53,500,000.00	$12.33
LA	Unknown	$36,500,000.00 (est.)	Unknown	$6,250,000.00 (est.)	Unknown	$42,750,000.00	$9.43
MA	$12,172,463.18	$57,321,691.93	$18,884,801.41	$7,129,816.88	--	$95,508,773.40	$14.59
MD	$21,141,813.46	$26,668,465.67	N/A	$5,504,127.19	--	$53,314,406.32	$9.23
ME	$2,117,604.00 (estimated)	$4,089,167.00 (estimated)	$1,095,313.00 (estimated)	$1,100,389.00	--	$8,402,473.00	$6.33
MI	State: $20,176,396.60 Counties: $64,755,058.00			State: $8,402,028.16 Counties: N/A	--	$93,333,482.76	$9.44
MN	$17,722,783.10	$37,149,738.61	$2,567,266.25	$4,671,070.27	--	$62,110,858.23	$11.71
MS	Not Specified					$26,510,538.00	$8.93
MT	Not Specified					$13,000,000.00	$13.14
NC	$14,640,345.46	$45,536,147.06	$11,033,117.77	$9,925,767.02	--	$81,135,377.32	$8.51
ND	$9,998,322.00		N/A	$339,585.00	--	$10,337,907.00	$15.37

State	Wireline	Wireless	VoIP	Prepaid	Other	Total	Estimated Amount Collected Annually Per Capita[50]
NE	$5,858,112.66	$7,012,329.84	Unknown	$1,030,005.04	--	$13,900,447.54	$7.61
NH	$2,335,953.27	$7,541,818.47	$2,439,645.81	$0.00	--	$12,317,417.55	$9.36
NJ	Not Specified					$122,632,000.00	$13.95
NM	Not Specified					$11,146,012.00	$5.41
NV	Washoe Co.: $515,482.00 (includes VoIP)	Washoe Co.: $1,032,455.00 (includes Prepaid)			Washoe Co.: $43,430.00 (reseller)	$1,591,367.00	$3.78 (Washoe County)
NY	Did Not Provide					$185,262,082.00[53]	$9.56
OH	Reporting Counties: $2,868,057.42	State: $25,000,000.00 (estimate includes prepaid) Reporting Counties: $5,093,094.44	Reporting Counties: $628.00	Reporting Counties: $473.72		$40,382,365.16	$3.50
OK	Unknown					--	--
OR	Not Specified					$39,470,386.00	$10.30
PA	$49,661,957.00	$127,605,219.00	$37,891,894.00	$24,641,148.00	--	$239,800,218.00	$18.88
RI	$4,901,092.54	$10,558,468.90	Included in wireline	$885,802.37	--	$16,345,363.80	$15.53
SC	$11,160,000.00 (estimated)	$21,381,001.22	Included in wireline figure	$6,513,281.27	--	$39,054,282.49	$8.44
SD	$3,999,727.00	$8,007,712.00	$55,247.00	$1,031,016.00	--	$13,093,702.00	$16.08
TN	Not Specified					$78,729,854.00	$12.41

[53] In its response, New York did not provide information on total fees collected. However, the New York State Department of Taxation and Finance reports that in 2015 the state collected approximately $185,262,082 from the state's Public Safety Communications Surcharge. *See* New York State, Department of Taxation and Finance, Fiscal Year Tax Collections: 2015-2016, at https://www.tax.ny.gov/pdf/2015-16_Collections/Table%202.pdf.

State	Wireline	Wireless	VoIP	Prepaid	Other	Total	Estimated Amount Collected Annually Per Capita[50]
TX	$69,900,837.00	$108,963,296.00	Included in wireline	$24,885,131.00	$19,189,471.00	$222,938,735.00	$8.87
UT	$8,085,555.00	$18,866,295.00	Included in Wireless	$179,022.00	--	$27,130,872.00	$9.82
VA	$27,525,822.93	$57,905,783.16	Unknown	Included in wireless	--	$85,431,606.09	$10.68
VT	Unknown					$6,256,658.00[54]	$10.00
WA	$4,000,070.00 (State) $11,395,554.00 (Counties)	$15,382,384.00 (State) $42,511,827.00 (Counties)	$3,079,479.00 (State) $8,616,974.00 (Counties)	$2,551,640.00 (State) $6,905,032.00 (Counties)	--	$94,445,461.00	--
WI	Unknown					--	--
WV	$19,405,563.00	$35,810,340.00	Included in wireline	$1,433,419.00		$56,649,322.00	$30.57
WY	Unknown						
Other Jurisdictions							
AS	Not Applicable					--	--
DC	$2,236,576.13	$5,342,986.04	$1,420,166.40	$630,587.93	Centrex: $1,485,025.24 PBX Trunks: $1,0730,889.60	$12,189,231.34	$20.26
PR	Not Specified					$21,896,788.53	$5.88
USVI	Not Specified					$1,297,671.00	$12.20
Total: $2,631,705,008.98							
Average State Amount Collected Per Capita							**$10.55**
National Amount Collected Per Capita							**$8.58**

[54] In its filing, Vermont states that the agent in charge of the Vermont Universal Fund did not provide it with the total amount collected from the state's 2% Universal Service Fee on telecommunications service providers. *See* Vermont Response at 11. In 2015 the Vermont Universal Fund collected approximately $6,256,658 from telecommunications carriers, a portion of which is directed to fund the annual statewide 911 service budget. *See* Independent Auditors' Report, Vermont Universal Service Fund Financial Statements, Years Ended June 30, 2015 and 2014, at http://publicservice.vermont.gov/sites/dps/files/documents/Telecom/USF/Vermont%20Universal.pdf.

27. States were asked whether any 911/E911 Fees were combined with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services. Of the 53 responding jurisdictions listed in Table 13, 22 states, the District of Columbia, and the US Virgin Islands reported combining collected fees with other funds or grants to support 911 services and 25 report they did not.

Table 13 – States Reporting Whether 911 Fees Are Combined with Federal, State or Local Funds or Grants, Special Collections, or General Budget Appropriations

Responses regarding combination of collected fees with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services.				
State	**Yes**	**No**	**No Response**	**If Yes, description of federal, state or local funds combined with 911/E911 fees**
AK		X		
AL	X			"Any funds that support 911 are either obtained or contributed at the local level, but not in the form of an additional 911 fee, as that is prohibited by law. Rather, additional funding may be in the form of a contract with responder agencies or some other locally obtained funding from grants, the county/municipality they serve, etc. Also, this additional funding is self-reported by the local district and not all districts report. The most recent submission for fiscal year ending 2015 was provided by 69 of the 88 districts and reports $8,949,358.75 from county/municipal funding, $28,244.04 from federal grants, and $2,201.23 from state grants."
AR		X		
AZ		X		N/A
CA		X		
CO	X			"911 surcharge funds are combined with local funds regularly across the state to fund the provision of 911 service. 911 surcharge funds are generally not sufficient to fully fund 911 services, and the difference is made up by city and county governments."
CT		X		N/A
DE		X		N/A
FL	X			"Emergency Communications Number E911 System Fund Interest: $667,136 County General Revenues: $95,378,141 Annualized state and rural county grant expenditures: $9,647,064"
GA	X			Unknown

Responses regarding combination of collected fees with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services.				
State	**Yes**	**No**	**No Response**	**If Yes, description of federal, state or local funds combined with 911/E911 fees**
HI	X			"The fees collected to support 911/E911/NG911 are insufficient to entirely support those services offered by the PSAPs. The amounts of federal, state, local funds, etc. that were combined with fees collected were not disclosed."
IA	X			"In addition to surcharge funding, local PSAPs are often also provided funds through county general fund appropriations, support from Sheriff Office funds, city general funds, and emergency management grants. These costs are broken down in the answer to question 5 of this section."
ID		X		"No fees combined at the State level."
IL		X		
IN	X			"On average, the 911 fee pays for 38% of operating costs at the local level. Local government relies upon other sources of funding to make up the difference. Those funds come from one or more of the following: property taxes, local option income tax, county adjusted gross income tax, casino funds, other."
KS	X			"Local general fund monies are used extensively to fund 911 in Kansas. These funds are derived from property taxes."
KY	X			"Essentially the costs for providing 911 services are paid at the local level. 911 fees collected by the state on wireless phones are distributed to local governments in regular quarterly payments (and grants) to help pay for daily operational costs and capital purchases ($19 million). State 911 fees are combined at the local level with local general fund appropriations ($32 million) and local 911 fees ($28 million) to support 911 services. No other state funds are appropriated for 'local' 911 services. (State general funds help pay for 911 services provided by the State Police.) A minimal amount of federal grant money (<$2 million) will be used at the local level for 911 services."
LA			X	"Unknown"
MA		X		
MD	X			"County (including the independent jurisdiction of Baltimore City) general funds."
ME		X		

Responses regarding combination of collected fees with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services.				
State	**Yes**	**No**	**No Response**	**If Yes, description of federal, state or local funds combined with 911/E911 fees**
MI	X			"County Millages: $33,018,238.38 Local/County General Funds: $114,742,581.20 Other Receipts: $20,399,582.70 (grants, tower rentals, contracts for service, etc.)"
MN		X		
MS	X			"Local budgets must supplement funds received from wireline fees collected to cover operation costs."
MT	X			"Local funds"
NC	X			"E911 funds were combined with general fund allocations from each of the 119 Primary PSAPs and 6 Secondary PSAPs to pay for expenses not allowed by NC General Statutes to provide for E911 services. Examples of expenses not allowed from collected 911 fees are telecommunicator salaries, facility maintenance, and radio network infrastructure."
ND	X			"Prepaid wireless revenue collected by the Office of State Tax Commissioner are combined with a percentage of the fee revenue collected locally to cover expenses associated with the state's transition to NG9-1-1."
NE	X			"Local jurisdictions are also supported by general funds. State 911 funds have not been comingled with any other funding sources."
NH		X		
NJ		X		
NM		X		
NV		X		
NY			X	
OH	X			"See attached spreadsheet for local responses from 80 of Ohio's 88 counties."
OK		X		
OR	X			"The Distribution to the 9-1-1 jurisdictions is combined with local monies to pay for 9-1-1."

Responses regarding combination of collected fees with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services.				
State	**Yes**	**No**	**No Response**	**If Yes, description of federal, state or local funds combined with 911/E911 fees**
PA	X			"Any 911 related expenses not covered by 911 fees are covered by the general fund of the respective County or City."
RI			X	
SC	X			"Local Jurisdictions collect landline 911 fees and combine those fees with the wireless 911 funds distributed by our office to support local 911/E911/NG911 services."
SD	X			"At the state level, the answer to this question is no. The 911 dollars were not combined with any other funding at the state level. However, at the local level (county/municipality) they supplement their 911 surcharge funds with additional funding from these sources: local general funds, Office of Homeland Security grant funds, State 911 Surcharge interest, State Grants, Other Intergovernmental Revenue, Charges for Goods/Services, Emergency Management Performance Grant, other Federal Grants, PSAP city/county host subsidy."
TN		X		
TX		X		
UT		X		
VA		X		
VT		X		
WA	X			"While the exact amount is unknown, all local PSAP jurisdictions contribute additional local funds to augment State and Local E911 excise taxes, in covering the costs of 911 statewide. It is estimated that on average statewide 15% of the actual cost of providing Washington State approved 911 activities comes from these local sources. In many cases this comes from local government general use funds or individual agency user fees. In addition, Washington State Patrol operates 4 Primary and 4 Secondary PSAPs using some funding from their direct budget."
WI		X		
WV		X		
WY			X	
Other Jurisdictions				
AS		X		"N/A. No fees collected."

Responses regarding combination of collected fees with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services.				
State	**Yes**	**No**	**No Response**	**If Yes, description of federal, state or local funds combined with 911/E911 fees**
DC	X			"Local Funds: $28,172,500"
PR		X		
USVI	X			"Appropriated general budget in the amount of $1,612,574 for salaries and fringe benefits."
Totals	**24**	**25**	**4**	

28. Lastly, the Bureau requested that states provide an estimate of the proportional contribution from each funding source towards the total cost to support 911 in the state or jurisdiction. As described in Table 14, sixteen states reported that state 911 fees were the sole source of revenue funding 911 services; nine states indicated that 50 to 99 percent of funding came from state 911 fees; thirteen states reported that 50 to 99 percent of funding came from local fees; and one state reported that local fees were the sole source of funding. Ten states report not knowing the proportional contributions.

Table 14 – State Estimates of Proportional Contribution from Each Funding Source

State	State 911 Fees	Local 911 or Other Fees	General Fund (State)	General Fund (County)	Federal Grants	State Grants
AK	0%	63%	15%	22.5%	0%	0%
AL	92.8%	0%	0%	7.1%	0.024%	0.002%
AR	32.8%	14.77%	0%	48.52%	0%	3.91%
AZ	100%	0%	0%	0%	0%	0%
CA	100%	0%	0%	0%	0%	0%

State	State 911 Fees	Local 911 or Other Fees	General Fund (State)	General Fund (County)	Federal Grants	State Grants
CO	3%	48.6%	0%	48.4% (county and municipal)	"Unknown. Local 911 Authorities are not required to report if and when they receive a grant that benefits, in whole or in part, 911 service."	"Unknown. Local 911 Authorities are not required to report if and when they receive a grant that benefits, in whole or in part 911 service."
CT	100%					
DE	100%					
FL	45%	0%	0%	49%	0%	6%
GA	Reports that information is unknown					
HI	Reports that information is unknown					
IA	46%			54% (includes Sheriff Funds)		
ID	90%	Unknown	0%	Unknown	0%	10%
IL	47%	44% (all local sources)	0%	9%	0%	0%
IN	38%	Not permitted	0%	62%	0%	0%
KS	27%	N/A	0%	73%	0%	0%
KY	19%	28%	8%	42%	<1%	3%
LA	Unknown	Unknown	0%	Unknown	0%	0%
MA	100%	0%	0%	0%	0%	0%
MD	51.24%	0%	0%	48.76%	0%	0%
ME	100%	0%	0%	0%	0%	0%

State	State 911 Fees	Local 911 or Other Fees	General Fund (State)	General Fund (County)	Federal Grants	State Grants
MI	11%	25%	0%	64% (Includes 44% General Fund, 12.5% voter-approved property tax assessments, and 7.5% "Other")	0%	0%
MN	100%	0%	0%	"PSAPs may receive general funds from the county in which they operate in addition to the monthly 9-1-1 fee distribution allocated by the legislature. The $13.6M is budgeted by legislature and distributed according to Minn Statute §403. This distribution varies by county according to a designated formula."	0%	0%
MS	0%	"Local budget and fees collected must cover costs. $35,494,712	0%	0%	0%	0%
MT	Reports that information is unavailable					
NC	49%	0%	0%	48%	0%	3%
ND	2%	62%	0%	36%	0%	0%

State	State 911 Fees	Local 911 or Other Fees	General Fund (State)	General Fund (County)	Federal Grants	State Grants
NE	Reports that information is unknown					
NH	100%	0%	0%	0%	0%	0%
NJ	Unknown	0%	0%	Unknown	0%	0%
NM	100%	0%	0%	0%	0%	0%
NV	No Response					
NY	No Response					
OH	Variable	Variable	NA	Variable	Variable	Variable
OK	Reports that information is unknown					
OR	28.02%	0%	0%	71.98%	0%	0%
PA	72%	0%	0%	28%	0%	0%
RI	0%	0%	100%	0%	0%	0%
SC	45% (estimated)	15% (estimated)	--	--	--	--
SD	54%	0%	0%	18%	1%	2%
TN	100%	0%	0%	0%	0%	0%
TX	71.64%	28.36%	0%	0%	0%	0%
UT	100%	0%	0%	0%	0%	0%
VA	50%	50%	0%	0%	0%	0%
VT	100%	0%	0%	0%	0%	0%
WA	20%	65%	0%	15%	0%	0%
WI	0%	15%	0%	85%	0%	0%
WV	100%	0%	0%	0%	0%	0%
WY	Reports that information is unknown					
Other Jurisdictions						
AS	0%	0%	0%	0%	0%	0%
DC	0%	30%	70%	0%	0%	0%
PR	100%	0%	0%	0%	0%	0%

State	State 911 Fees	Local 911 or Other Fees	General Fund (State)	General Fund (County)	Federal Grants	State Grants
USVI	45%	0%	55%	0%	0%	0%

G. Diversion or Transfer of 911/E911 Fees for Other Use

29. Under Section 6(f)(2) of the NET 911 Act, the Commission is required to obtain information "detailing the status in each State of the collection and distribution of such fees or charges, and *including findings on the amount of revenues obligated or expended by each State or political subdivision thereof for any purpose other than the purpose for which any such fees or charges are specified* (emphasis added)."[55] Therefore, the Bureau requested that states and territories identify what amount of funds collected for 911 or E911 purposes were made available or used for any purpose other than the ones designated by the funding mechanism or used for purposes otherwise unrelated to 911 or E911 implementation or support, such as funds transferred, loaned, or otherwise used for the state's general fund.

30. As in previous reports, we have identified diversion or transfers of 911/E911 funds and categorized them as to whether the funds were directed to other public safety uses or to non-public safety uses such as state General Fund accounts. With respect to funds devoted to other public safety uses, we have generally determined that funds used to support public safety radio systems, including maintenance, upgrades, and new system acquisitions, are not 911-related within the meaning of the NET911 Act and therefore constitute a diversion of 911 funds. However, several states have documented expenses associated with integrating public safety dispatch and 911 systems (e.g., purchase of CAD hardware and software to support integrated 911 and dispatch operations) and asserted that these should be categorized as 911-related expenses. We agree that where sufficient documentation is provided, the expenditure of 911 funds to support integration of dispatch and 911calltaking systems may be categorized as 911-related, and we follow this approach in this report.

31. Table 15 below lists the states that diverted or transferred fees and the amounts diverted or transferred in calendar year 2015. Three states (Illinois, New Hampshire, and Rhode Island) and Puerto Rico self-identified in their responses to the questionnaire that they used collected funds, at least in part, for non-911 related purposes. Five states (Iowa, New Jersey, New York, Washington, and West Virginia) did not self-identify as diverting funds, but the Bureau has determined based on review of the information provided that these states in fact diverted funds for non-911 related purposes within the meaning of the NET 911 Act. The aggregate amount of diverted funds reported by all of the jurisdictions listed in Table 15 is $215,981,751.07, or 8.2 percent of all 911/E911 funds reported to have been collected by all responding states and jurisdictions in 2015.

32. In 2012, Congress passed the Next Generation 911 Advancement Act, Public Law 112-96 (2012 Act), which dedicated $115 million in FCC spectrum auction proceeds to support future matching grants to eligible states and U.S. territories for the implementation and operation of 911, E911, and NG911 services and applications, migration to IP-enabled emergency networks, and training public safety personnel involved in the 911 emergency response chain. The 2012 Act tasked the National Highway Traffic Safety Administration (NHTSA) and the National Telecommunications and

[55] NET 911 Act at §6(f)(2).

Information Administration (NTIA) with administering the grant program, which will be implemented at a later date to be determined. We remind interested parties that Section 6503 of the 2012 Act requires applicants seeking to receive grants under this program to certify that no portion of any designated 911 charges imposed by the state or other taxing jurisdiction within which the applicant is located are being obligated or expended "for any purpose other than the purposes for which such charges are designated or presented."

Table 15 – Total Funds Diverted or Otherwise Transferred from 911 Uses

State/Territory	Total Funds Collected (Year End 2015)	Total Funds Used for Other Purposes	Percentage Diverted	Type of Transfer
States/Jurisdictions Self-Identifying as Diverting/Transferring Funds				
Illinois	$95,500,349.00	$5,000,000.00	*5.2%*	General Fund
New Hampshire	$12,317,417.55	$2,078,685.85	*16.9%*	General Fund and Public Safety Related
Puerto Rico	$21,896,788.53	$484,016.54	*2.2%*	General Fund
Rhode Island	$16,345,363.80	$11,185,216.24	*68.4%*	General Fund
States/Jurisdictions Identified by Bureau as Diverting/Transferring Funds				
Iowa	$40,547,767.19	$4,000,000.00	*9.9%*	Public Safety Related
New Jersey	$122,632,000.00	$110,278,000.00	*89.9%*	General Fund and Public Safety Related
New York	$182,262,082.00	$77,254,288.19	*42%*	General Fund
Washington	$94,445,461.00	$6,017,185.00	*6.4%*	Public Safety Related
West Virginia	$56,649,322.00	$3,984,195.00	*7%*	Public Safety Related
Total	**$642,596,551.07**	**$220,281,586.82**	***34.3%***	
Percent Diverted From Total Funds Collected by All States				
Total	***$2,631,705,008.98***	***8.4%***		

1. States/Jurisdictions Self-Identifying as Diverting/Transferring Funds.

33. Illinois reported that $5,000,000.00 was "transferred out of the Wireless Services Emergency Fund to the State's General Revenue Fund."[56]

34. New Hampshire reported a diversion or transfer of $2,078,685.85. According to New Hampshire, "the Department of Safety, Division of Emergency Services and Communications, receives and forwards to the appropriate local dispatch center all 911 calls [and] provides all network connections and the equipment at the local dispatch center to receive the forwarded 9-1-1 calls."[57] The Division also "funds the State Police Radio Maintenance Section at approximately $1,800,000.00 per year," under the justification that the 911 system uses the microwave system maintained by the State Police, however, "the Division funds all of the State Police Radio Maintenance function."[58] According to New Hampshire, during the 2015 annual period, the state transferred approximately $1,871,427.00 to fund the State Police Radio Communications Maintenance Unit; $12,500.00 to fund the state's Poison Control Project; $95,373.00 to fund broadband communications under the Broadband Technology Opportunities Program; and $99,385.85 to fund the Statewide Interoperability Coordinators Office.[59]

35. Rhode Island reported that in its 2015 fiscal year (ending June 30, 2016), the state collected $16,345,363.83 in E911 surcharges, with approximately 90 percent of the collected fees going into the state General Fund and the remaining 10 percent being contributed to the state Information Technology Fund. The state indicated that it used a portion of the General Fund revenues to fund the E-911 program: $4,054,086.17 in personnel costs and $1,106,061.42 in operating costs, for a total of $5,160,147.59. Rhode Island reported that all remaining funds collected were distributed for other purposes via the General Fund.[60]

36. Puerto Rico reported diversions of approximately $484,016.54. Pursuant to Act No. 66 of June 17, 2014, as amended, Article 19, approximately $240,916.54 and $243,100.00 was contributed to the "Work Promotion and Economic Activity Fund" under the custody of the Trade and Export Company of the Commonwealth of Puerto Rico.[61]

37. Two states, California and Virginia, reported that they diverted a portion of the 911 funds collected in calendar year 2015 for purposes outside the scope of their established state funding mechanisms. However, on review of the expenditures at issue, the Bureau concludes that the states have demonstrated a sufficient nexus with 911 to support a finding that the expenditures were 911-related.

- California states that "[a]ll funds collected have been used exclusively for the purposes

[56] Illinois Response at 15.

[57] New Hampshire Response at 6.

[58] *Id.*

[59] *Id.* at 11.

[60] Rhode Island Response at 2-3.

[61] Puerto Rico Response at 11. We note that Puerto Rico also identified a transfer of $12 million pursuant to "Act No. 21 of April 6, 2016, known as "Emergency Moratorium Act and Financial Rehabilitation of Puerto Rico," which provides for the declaration of a state fiscal emergency by the Legislative Branch of Puerto Rico." Because the transfer occurs in the 2016 annual period, we do not count it in this year's report.

designated by the funding mechanism in support of 911 with the exception of funds that have been appropriated by the California Department of Forestry and Fire Protection (CAL FIRE)."[62] California further states that "[w]hile CAL FIRE's use of the State Emergency Telephone Number Account (SETNA) was not specific to the intent for 911 related expenditures, the equipment purchased is for use at emergency dispatch centers in response to 911 call activity."[63] We find that California has shown this expenditure of funds to be in support of 911 communications even though the expenditure was outside the state's statutory funding mechanism. Therefore, we do not identify California as having diverted funds.[64]

- Virginia reported that it diverted a total of $11,700,000.00 of the 911/E911 funds it collected: of this amount, $3,700,000.00 was used to help finance the Virginia State Police (VSP) for related costs incurred for answering wireless 911 telephone calls, and $8,000,000.00 to support sheriff's 911 dispatchers throughout the Commonwealth. Virginia notes that while the 911 funding mechanism established in Virginia does not specifically provide for funds to be diverted to the VSP and sheriffs' offices, the diverted funds were used to support 911-related activities.[65] We agree that Virginia's expenditure to support 911 dispatch by these agencies is 911-related, and we therefore do not identify Virginia as having diverted funds.[66]

2. States/Jurisdictions Identified by the Bureau as Diverting/Transferring Funds.

38. Iowa reported that it did not divert or otherwise transfer funds away from 911 or E911 related activities. However, Iowa's report indicates that the state's Homeland Security and Emergency Department was "tasked by the [Iowa] legislature with paying $4,000,000 to Motorola for the statewide interoperability Land Mobile Radio, which was within the scope of the Receipt and Disposition of the 911 language already in Code."[67]

39. New Jersey reported that it did not divert or transfer any collected funds.[68] However, it reported that it collected a total of $122.6 million in 911 fees and, in accordance with New Jersey statute (P.L.2004, c.48), the total was "deposited into the 911 System and Emergency Response Trust Fund account and applied to offset a portion of the cost of related programs." According to New Jersey, with respect to 911 specific costs, approximately $13,122,000.00 was applied to "the Statewide 911 Emergency Telephone System" and $900,000 was applied to "the Office of Emergency Telecommunications Service." New Jersey applied the remainder of $110,278,000.00 to offset costs

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[62] California Response at 12.

[63] *Id.* California states that "the appropriations were to purchase and install new hardware and computer aided dispatch (CAD) software at CAL FIRE's Emergency Command Centers. In addition redundant hardware and a CAD system were purchased and installed at their Fire Academy, which is used for training." *Id.*

[64] California made the same showing in its 2015 filing, but was identified in our 2015 Report as having diverted funds in calendar year 2014. Based on our review of California's 2015 and 2016 filings, we revise our findings from the 2015 Report to remove California from that year's list of states that diverted funds.

[65] Virginia Response at 11.

[66] Virginia made the same showing in its 2015 filing, but was identified in our 2015 Report as having diverted funds in calendar year 2014. Based on our review of Virginia's 2015 and 2016 filings, we revise our findings from the 2015 Report to remove Virginia from that year's list of states that diverted funds.

[67] Iowa Response at 7.

[68] New Jersey Response at 11.

related to programs within the New Jersey Departments of Law and Public Safety and Military and Veterans' Affairs.[69]

40. Washington reported that it did not divert or transfer funds, stating that "[d]uring calendar year 2015, no state enhanced 911 excise taxes were expended for any other purpose than that prescribed by [Revised Code of Washington] 38.52.540."[70] However, the state did identify funds transferred to other departments and activities that the Bureau finds are public safety related but not 911-related. According to Washington, the state's "Revised Code of Washington (RCW) and the Washington Administrative Code (WAC) when taken as a whole create a de facto line between 'Call-taking' and 'Dispatch'" and that "state 911 dedicated funds are to be used only in support of call-taking functions (said differently, to get the 911 call from the call-maker to the call-taker) whereas "County 911 dedicated funds" are allowed to support specific "dispatching" functions."[71] Washington states that "for the 2013-2015 and the 2015-2017 fiscal biennia, the [enhanced 911] account may be used for a criminal history system upgrade in the Washington state patrol and for activities and programs in the military department."[72] The state reported spending $5,882,974 of 911 fees "in support of the Washington Military Department activities and programs" and $134,211 of 911 fees "in support of the Washington State Patrol upgrades to the state criminal history system."[73] For this report, we categorize those expenditures as diversions, albeit for public safety uses.

41. Although West Virginia reported that it did not divert funds, of the $56,649,322.00 in 911/E911 fees collected from all sources (wireless, wireline, VoIP; and other services), the Bureau identified approximately $3,984,195.00 of that amount that was apportioned to certain dedicated accounts, as follows: $1,000,000.00 for the Tower Assistance Fund, to subsidize construction of towers, which the state describes as ensuring enhanced 911 wireless coverage; $1,790,517.00 for the state's Department of Homeland Security, to be used solely for the purpose of maintaining radio systems used by state and 911 Centers to dispatch emergency services and other agencies; and $1,193,678.00 for the West Virginia State Police, to be used for equipment upgrades for improving and integrating their communication efforts with those of enhanced 911 systems.[74] We categorize these expenditures as non-911 related. We do not agree with the state's characterization of tower construction and radio system maintenance as 911-related programs. Arguably, the state's expenditure of $1,193,678.00 on integrating the West Virginia State Police's radio systems with 911 could be considered 911-related, but the state has not provided sufficient documentation of these expenditures to support such a finding.

42. In Table 16 below, we compare the number of states reporting fee diversions in this reporting year compared to past years.

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[69] *Id.* at 6.

[70] Washington Response at 12-13.

[71] *Id.*

[72] *Id.*

[73] *Id.*

[74] West Virginia Response at 17-18. The Bureau derived the amounts provided based on a 5% wireless fee to the Department of Homeland Security; a $0.10 per wireless fee collected to the West Virginia State Police; and a set $1,000,000 transfer to the state's Tower Assistance Fund.

Table 16 – States Identified as Diverting 911/E911 Funds (2009 – 2016)

Report Year	2009 Report	2010 Report	2011 Report	2012 Report	2013 Report	2014 Report	2015 Report[75]	2016 Report
States	Illinois	Illinois	Illinois	Illinois	Illinois	Illinois	Illinois	Illinois
	New York	New York	New York	New York	New York	New York	New York	New York
	Rhode Island	Rhode Island	Rhode Island	Rhode Island	Rhode Island	Rhode Island	Rhode Island	Rhode Island
		Arizona	Arizona	Arizona				
		Georgia	Georgia	Georgia				
	Maine		Maine	Maine				
						New Jersey	New Jersey	New Jersey
	Oregon	Oregon	Oregon					
							New Hampshire	New Hampshire
						Washington		Washington
							West Virginia	West Virginia
	Wisconsin	Wisconsin						
						California		
		Delaware						
		Hawaii						
								Iowa
					Kansas			
	Montana							
		Nebraska						
	Tennessee							
Other Jurisdictions						Puerto Rico		Puerto Rico
Total	**8**	**10**	**7**	**6**	**4**	**7**	**6**	**9**

[75] Reflects removal of California and Virginia from the 2015 list.

Report Year	2009 Report	2010 Report	2011 Report	2012 Report	2013 Report	2014 Report	2015 Report[75]	2016 Report
States and Other Jurisdictions That Did Not File a Fee Report								
States Not Filing A Report				Louisiana		Louisiana	Louisiana	
							Missouri	Missouri
					Arkansas			
			Kansas					
				New Hampshire				
			New Jersey					
			Oklahoma					
				Rhode Island				
Other Jurisdictions Not Filing A Report	Northern Marianas	Northern Marianas	Northern Marianas	Northern Marianas	Northern Marianas	Northern Marianas	Northern Marianas	Northern Marianas
		Guam	Guam		Guam	Guam	Guam	Guam
	US Virgin Islands			US Virgin Islands	US Virgin Islands	US Virgin Islands	US Virgin Islands	
					American Samoa	American Samoa		
				District of Columbia				

H. Oversight and Auditing of 911/E911 Fees

43. In order to understand the degree to which states and other jurisdictions track the collection and use of 911 fees, the Bureau requested that respondents provide information about whether they had established any oversight or auditing mechanisms in connection with the collection or expenditure of 911 fees. As indicated in Table 17 below, thirty-five states, the District of Columbia, and the US Virgin Islands indicated that they have established an oversight mechanism; ten states, American Samoa, and Puerto Rico stated they have not.[76]

44. Some states reported local auditing responsibilities with the state providing oversight or review. For example, Arizona stated that the State Auditor General can audit any program within its

[76] New York, Rhode Island, and Wyoming did not respond to the question.

statutory authority and the State 911 office reviews and approves "proposals, reviews, and processes for payment all community-approved invoices [and] determines that funds collected have been made available or used for the purposes designated by the funding mechanism." As of October 2014, Illinois reported that local 911 authorities are required to file an annual financial report detailing a variety of revenue and expenditure information, and they are to be made available for inspection through the website of the Illinois Commerce Commission. Additionally, Illinois' Auditor General has specific requirements for auditing the State's collection and distribution of 9-1-1 funds.[77] Colorado stated that local 911 Authorities are "subject to audit requirements covering all local governments under Colorado Revised Statute Section 29-1-601 *et seq*, [and] each local 911 Authority must include a description of their use of funds collected in their audit, and a copy of each audit report must be made available on the governing body's website if it has one." According to Louisiana, "a number of state laws and acts regulate approved PSAP expenditures, and each district is subject to periodic audits overseen by the Legislative Auditor of the State of Louisiana."[78]

45. The Bureau also asked whether each state or other jurisdiction has the authority to audit service providers to ensure that the amount of 911/E911 fees collected from subscribers matches the service provider's number of subscribers. Twenty-seven states, the District of Columbia, Puerto Rico, and the US Virgin Islands reported that they have authority to conduct audits of service providers. Nineteen states and American Samoa reported that they do not.[79] California's Revenue and Taxation Code Section 41130 provides that "upon proper notification to the service supplier, the Board of Equalization or its authorized representative shall have the right to inspect and audit all records and returns of the service supplier at all reasonable times."[80] According to Colorado, "the local governing body may, at its own expense, require an annual audit of the service supplier's books and records concerning the collection and remittance of the 911 surcharge funds (CRS § 29-11-103 (3) b)."[81] Nebraska "has the ability to perform remittance audits on wireless carriers."[82] Effective August 2015, the Pennsylvania Emergency Management Agency has "the power and duty to request information and require audits or reports relating to program compliance from any entity remitting the surcharge to or receiving disbursements from the fund and to subpoena witnesses, administer oaths, examine witnesses, take such testimony and compel the production of such books, records, papers and documents as it may deem necessary or proper in and pertinent to any proceeding, investigation or hearing."[83] Of the jurisdictions indicating they have authority to audit service providers, eight indicated that they had undertaken "authority or enforcement or other corrective actions" in connection with such auditing, twelve states, American Samoa, the District of Columbia, Puerto Rico, and the US Virgin Islands indicated no such actions were taken during the period under review, and thirteen did not respond or did not know.

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[77] Illinois Response at 16.

[78] Louisiana Response at 12

[79] New York, Rhode Island, and Wyoming did not respond to the question.

[80] California Response at 13.

[81] Colorado Response at 14.

[82] Nebraska Response at 10.

[83] Pennsylvania Response at 15.

Table 17. Description of Oversight and Auditing of Collection and Use of 911 Fees

State	Has your state established any oversight or auditing mechanisms or procedures to determine whether collected funds have been made available or used for the purposes designated by the funding mechanism or otherwise used to implement or support 911?	Does your state have the authority to audit service providers to ensure that the amount of 911/E911 fees collected form subscribers matches the service provider's number of subscribers?	Conducted Audit of Service Providers in 2015
AK	No	No	NA
AL	Yes	Yes	Yes
AR	No	No	NA
AZ	Yes	Yes	No Response
CA	Yes	Yes	No Response
CO	Yes	Yes	No
CT	No	Yes	No Response
DE	Yes	No	NA
FL	Yes	No	NA
GA	Yes	Yes	No
HI	Yes	No	NA
IA	Yes	No	NA
ID	Yes	No	NA
IL	Yes	Yes	No Response
IN	Yes	Yes	Yes
KS	Yes	Yes	No Response
KY	Yes	Yes	Yes
LA	Yes	Yes	No
MA	Yes	No	No
MD	Yes	Yes	No
ME	Yes	Yes	No
MI	Yes	No	No Response

State	Has your state established any oversight or auditing mechanisms or procedures to determine whether collected funds have been made available or used for the purposes designated by the funding mechanism or otherwise used to implement or support 911?	Does your state have the authority to audit service providers to ensure that the amount of 911/E911 fees collected form subscribers matches the service provider's number of subscribers?	Conducted Audit of Service Providers in 2015
MN	Yes	Yes	No
MS	No	Yes	No Response
MT	Yes	Yes	No
NC	Yes	No	NA
ND	Yes	No	NA
NE	Yes	Yes	Yes
NH	No	Yes	No Response
NJ	No	No	NA
NM	No	No	NA
NV	No	No	NA
NY	No Response	No Response	No Response
OH	Yes	Yes	No Response
OK	No	No	NA
OR	Yes	Yes	Unknown
PA	Yes	Yes	No
RI	No Response	No Response	No Response
SC	No	No	NA
SD	Yes	Yes	Yes
TN	Yes	No	NA
TX	Yes	Yes	Yes
UT	No	No	NA
VA	Yes	Yes	Unknown
VT	Yes	Yes	Yes
WA	Yes	Yes	Yes

State	Has your state established any oversight or auditing mechanisms or procedures to determine whether collected funds have been made available or used for the purposes designated by the funding mechanism or otherwise used to implement or support 911?		Does your state have the authority to audit service providers to ensure that the amount of 911/E911 fees collected form subscribers matches the service provider's number of subscribers?		Conducted Audit of Service Providers in 2015	
WI	Yes		No		NA	
WV	Yes		Yes		No	
WY	No Response		No Response		No Response	
Other Jurisdictions						
AS	No		No		NA	
DC	Yes		Yes		No	
PR	No		Yes		No	
USVI	Yes		Yes		No	
Totals	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
	37	13	30	20	8	15

I. Description of Next Generation 911 Services and Expenditures

46. In order to track progress of the nationwide transition to NG911, the Bureau requested that states and other jurisdictions specify whether they classify NG911 expenditures as within the scope of permissible expenditures for 911 or E911 purposes, and whether they expended funds on NG911 in calendar year 2015. With respect to classifying NG911 as within the scope of permissible expenditures, 44 states and the District of Columbia indicated that their 911 funding mechanism allows for distribution of 911 funds for the implementation of NG911. Six respondents - Alaska, Illinois, Montana, Montana, Puerto Rico, and US Virgin Islands - reported that their funding mechanism does not allow for the use of 911 funds for NG911 implementation. Thirty-six states, the District of Columbia, and Puerto Rico indicated that they used 911 funds for NG911 programs in 2015. Table 18 shows the general categories of NG911 expenditures that respondents reported supporting with 911/E911 funds, although most respondents did not specify NG911 expenditures by category.

Table 18 – Number of States Indicating One or More Areas of NG911 Investment

Area of Expenditure	States/Other Jurisdictions			Total
General Project or Not Specified	Alabama	Kentucky	Rhode Island	26
	Delaware	Louisiana	South Carolina	
	Florida	Maine	Tennessee	
	Hawaii	Maryland	Vermont	
	Idaho	Massachusetts	Virginia	
	Illinois	Mississippi	Washington	
	Indiana	New Mexico	West Virginia	
	Iowa	Nevada	Puerto Rico	
	Kansas	Ohio		
Planning or Consulting Services	Arizona	New Jersey	Texas	7
	Idaho	North Carolina		
	New Hampshire	Oregon		
ESInet Construction	California	Kentucky	South Carolina	15
	Colorado	Massachusetts	South Dakota	
	Florida	Minnesota	Texas	
	Iowa	North Dakota	Utah	
	Kansas	Pennsylvania	Virginia	
Hardware or Software Purchases or Upgrades	Connecticut	Kansas	South Dakota	11
	Florida	Massachusetts	Texas	
	Hawaii	Nevada	District of Columbia	
	Iowa	Rhode Island		
GIS	Hawaii	Michigan	South Dakota	10
	Iowa	North Dakota	Virginia	
	Kansas	Pennsylvania		
	Massachusetts	South Carolina		
NG Security Planning	Washington			1
Training	None			0

47. The Bureau requested that states and jurisdictions report the amount of funds expended on NG911 programs in the annual period ending December 31, 2015. Table 19 shows the NG911-related expenditures and projects reported by 36 states, the District of Columbia, and Puerto Rico. Collectively, these jurisdictions spent approximately $164,817,664.55 on NG911 programs, or approximately 6.26 percent of total 911/E911 fees collected. Twelve states did not specify the amount spent for NG911 purposes. Twelve states, American Samoa, and the US Virgin Islands report no expenditures for NG911-related programs.[84]

Table 19 – Funds Spent on Next Generation 911 Programs

State	Amount Spent	Description of Projects
AL	$516,285.31	"Alabama completed our wireless aggregation project in December 2014, which is as far as the first iteration of Alabama Next Generation Emergency Network (ANGEN) is able to accomplish with the vendor selected during the first phase of the project. All wireless calls in the state are now routed through this network."
AZ	$17,804.00	"Funds were expended for a consultant study of proposed Next Generation 911 network and management solution."
CA	$3,687,206.00	"The State of California has two NG9-1-1 ESInet projects under development. The Regional Integrated Next Generation project in Pasadena and the Mendocino County ESInet project. Both projects utilize a hosted solution currently in place and will be supported with by regional ESInets currently under development."
CO	$4,083,718.00	"The City of Aurora, Colorado, is installing fiber optic cable for the purpose of preparing for NG911 services. Other local governments may be undertaking NG911 related projects, but did not report them."
CT	Not specified	"Network based components were installed first in the Network Control Centers and Emergency Calling Data Centers. Deployment and transition to 25% of PSAPs."
DE	$2,700,000.00	"Delaware has entered in to an agreement with Intrado (West) to provide 911 service to the centers. This agreement includes voice texting and pictures and video when available. Delaware and Intrado have completed A ALI cutover and are working on voice to start in Q1 2016. Delaware is planning on turning on texting in 2016 as a state wide project. This is a long term contract and should avail Delaware to any NG911 systems for the coming years."
FL	$17,162,709.23	"In 2015, Next Generation 911 expenditures include county expenditures on county NG-911 projects. Expenditure information is collected and reported on the county fiscal year basis (October 1, 2014 - September 30, 2015). These expenditures include next-generation ESI network circuits and services, next-generation E911 database services,

[84] These include Alaska, Arkansas, Georgia, Idaho, Illinois, Mississippi, Montana, Nebraska, New Hampshire, New Mexico, Oklahoma, and Wisconsin. Wyoming did not respond to the question.

State	Amount Spent	Description of Projects
		next-generation E911 call handling equipment, and NG-911 routing services. NG-911 map information on systems implementations for Florida's NG-911 projects is included in the E911 Board 2014 Annual Report, available at: http://www.dms.myflorida.com/business_operations/telecommunications/enhanced_911"
HI	$2,687,000.00	"1. Completed installation of NG911 Viper consoles 2. Initiated soft launch of text-to-911 deployment 3. County of Honolulu deployment of Smart911 database 4. GIS"
IA	$16,000,000.00	"During this reporting period PSAPs continued to upgrade to the NENA i3 standard Next Gen. PSAPs upgraded their CPE's and Recorders to SIP capable/enabled. During this reporting period, PSAPs worked with GeoComm to begin a second data assessment of GIS data that will ultimately be used for NextGen upgrades. During this reporting period, 10 PSAPs began receiving SMS text messaging through the interim, web browser solution. During this reporting period, TCS continued work on building out the secondary ESInet. This is a completely redundant ESInet connecting 13 PSAPs with the CLCs. In case of a large outage, those 13 PSAPs could handle the statewide calls."
ID	Not Specified	"The IECC has formed a NG 911 working group composed of stakeholders from all counties within the state and has begun implementation of the State NG plan. In 2015 we expect to formalize some legislation that will improve NG 911 language in the current legislation. Efforts are under way to firm up 911 costs by utilization of a contractor to calculate state costs and revenue for the entire state."
IL	Not Specified	"A region of 14 9-1-1 authorities joined together calling themselves the Counties of Southern Illinois (CSI) to create a NG9-1-1 system. Seven of the 14 systems were implemented in 2014 and the remaining 7 implemented in 2015."
IN	$8,500,000.00	"The board awarded contracts to INdigital and AT&T during this reporting period. INdigital modernized the current network and AT&T started the build of their network to meet NENA i3 standards."
KS	$4,610,580.68	"Statewide IP Network and hosted call handling solution is currently being deployed. As of 12/31/15, eleven Kansas PSAPs had been migrated to this system. Statewide GIS data remediation is underway, with 93 of 105 counties having completed remediation and moving into data maintenance mode. Planning has begun for migration to geospatial call routing and interconnect with AT&T Nationwide ESINet."

State	Amount Spent	Description of Projects
KY	Not Specified	"CMRS grant funds were awarded and used for NG911 "interim" solutions that include the acquisition of IP enabled Host/Remote 911 telephony equipment in 38 PSAPs. Grant funds were awarded on the basis of being compliant with our NG911 State Plan. Planning for a regional 911 network to serve a dozen counties in east Kentucky utilizing an existing fiber ring owned by regional co-op telcos was undertaken and reached Governor level approval."
LA	Not Specified	"Jefferson, Tangipahoa, St. Helena, Terrebonne, Washington, and Lafourche parishes have completed text to 911 implementations. Several other parishes are in the process of implementation including West Baton Rouge, East Baton Rouge, Webster, Ouachita, Cameron, Orleans, and Calcasieu parishes."
MA	$9,540,773.00	"During the annual period ending December 31, 2015, the State 911 Department coordinated in the efforts to develop, design, and implement a high speed fiber optic network in Western and parts of Central Massachusetts to ensure that the needs of the State 911 Department and its PSAPs are addressed and incorporated in the overall development and design of the fiber optic network. This network will prepare the PSAPs for transition to Next Generation 911 and will allow for more effective and efficient management of system updates, recordings, and overall system maintenance and monitoring. The State 911 Department also provided funding for additional dedicated resources for MassGIS, a department within the Commonwealth's Information Technology Division, to provide updated, synchronized mapping data and information needed to support the State 911 Department as it prepares for the implementation of Next Generation 911. On August 4, 2014, the Department entered into a contract with General Dynamics Information Technology, Inc. to provide a comprehensive, end-to-end, fully featured, standards-based Next Generation 911 system to replace the current enhanced 911 system. During the annual period ending December 31, 2015, system design and test planning development, laboratory trial and testing, site surveys, and other activities were undertaken."
MD	$5,867,257.46	"The Emergency Number Systems Board funds telephone systems and logging recorders that are Next Generation IP enabled systems. During FY 2015, the Board funded IP phone systems for five (5) primary and three (3) backup PSAPs."
ME	$5,070,752.00	"The State of Maine has a single, statewide NG911 system that was fully deployed by August 2014 and was in place for all of 2015."
MI	$608,014.68	"The State 911 Office is working with the Upper Peninsula 911 Authority to utilize data from the Michigan 911 GIS Repository for geospatial routing. GIS data from the repository will be exported to the LVF/ECRF serving the Upper Peninsula 911 Authority ESInet and utilized for text and call routing."
MN	$6,404,339.00	"All 104 PSAPs connected to the ESInet for all call types (wire line, wireless, and VoIP). RFP posted for response for ESInet, IP Selective Routing, and a solution for Text to 911.

State	Amount Spent	Description of Projects
		GIS Project Manager position was created and filled to begin the Statewide GIS Centerline project for 911 in preparation for ECRF/LVF."
MS	Not Specified	"The number of NG911 projects completed or underway during the annual period under review was 17."
NC	$1,524,654.00	"On December 2, 2014 the NC 911 Board issued an RFP for technical consultant support to create a plan that will meet current 911 needs, provide an ESInet IP backbone for NG911 applications, increase PSAP interoperability, and allow for an error free transition from the current legacy E911 environment to a Next Generation 911 environment for all primary PSAPs, secondary PSAPs, and backup PSAPs. The contract was awarded to Federal Engineering and work began on creating a Concept of Operations, Network Design and Network Cost Analysis. This plan will include issuance of five and possibly six RFPs for NG 911 functional capabilities. These Next Generation 911 functional capabilities are for an ESINet, Hosted CPE, a Network Operations Center (NOC) and Help Desk, CAD interoperability for all PSAPs, GIS operation supporting call routing, and radio interoperability for all PSAPs. The 911 Board recognizes a likely interplay between its efforts and federal FirstNet development however the planned RFPs are not intended to replace or supplant the State's FirstNet effort. The NG911 system functions are to be open standards based and consistent with the National Emergency Number Association's (NENA) i3 next generation standards, requirements, and best practices. It is anticipated that the first PSAP deployments on the ESINet will occur during the fourth quarter of calendar year 2017."
ND	$255,750.00	"Work in progress on deployment of ESInet connectivity to all of the state's 22 PSAPs. As of 6/18/2015 15 of 22 PSAPs in the state have been connected to the ESInet. Ongoing development of GIS/MSAG records and removal of a certain number of non-selectively routed originating circuits is presently governing the deployment of ESInet connectivity to 3 of the remaining 7 PSAPs with 4 PSAPs either in the process of moving their CPE location or working to meet ESInet network connectivity prerequisites."
NH	Not Specified	"The Division issued an RFP for NG 9-1-1 CPE, software and Network services with the intent of upgrading to NG 9-1-1 in calendar year 2016. Carrier over Ethernet project was completed in calendar 2015."
NJ	$75,871.14	"Consultant services to begin the development of a RFP for the replacement of the State's legacy 9-1-1 network with a state of the art, IP based, Next Generation 9-1-1 network."
NM	NA	"When PSAP equipment is replaced, Next Generation ready equipment is being used."
NV	$242,000.00	Storey County: upgraded county 911 system to a Cassidian Vesta/Sentinal 4 NG911 Phase 2 wireless compatible system. Nye County: went live with new Airbus/Vesta NG911 system in

State	Amount Spent	Description of Projects
		December 2015 Washoe County: Washoe County uses and maintains West Safety Services Advanced "Next Generation" Emergency 911 services for all 3 PSAPs in Washoe County and provide redundancy
NY	Not Specified	"The State Interoperable Communications Grant is a formula-based grant to counties to build out their interoperable network as part of their consortia. This grant also advances Next Generation 911 (NG-911) systems."
OH	Not Specified	"There are a variety of counties who have their "ESInet" built out and ready to go, however none are active NG911 in 2015."
OR	$325,428.04	"State is currently on an Analog Frame Relay Network to allow border to border ALI services. Frame Relay Network will reach end of life by November 2016. RFP has been awarded to provide statewide IP network to be completed before November 2016."
PA	Not Specified	"Pennsylvania is in the early stages of implementation with the ongoing development of regional and statewide Emergency Service IP networks (ESInets) and geo-spatial mapping to provide for 9-1-1 call routing. NG9-1-1 is a core technology change and will be based upon nationwide standards currently being developed by the National Emergency Number Association (NENA) and other 9-1-1 authorities. PEMA's goals are to establish the strategy to implement NG9-1-1 throughout the Commonwealth of Pennsylvania in a consistent, precise manner while maximizing all available resources including: • Deployment of a Public Safety 99.999% Grade ESInet • Utilize a standards based approach • Implement IP capable PSAPs • Develop geographic based routing and database integration • Deploy NG9-1-1 capable, shared applications • Implement "Best Practices" approach"
RI	$630,000.00	"RI E 9-1-1 has purchased the software and hardware necessary for the implementation of NG911. During FY14, FY15, AND FY16, RI E 9-1-1 spent the sum of approximately $630,000.00 for the purposes of purchase of NG911 equipment, hardware and software. This expenditure was approved by the RI legislature (via our budget), the State of Rhode Island Department of Public Safety and the State of Rhode Island Budget Office, and is within the scope of permissible expenditures for RI E 9-1-1 purposes. RI E 9-1-1 maintains a voice and data network within the state that connects RI E 9-1-1 to all local service providers (police, fire and medical) dispatch centers, and transfers a 9-1-1 emergency caller to the appropriate service provider. RI E 9-1-1 is presently implementing a network for NG911 services. This NG911 network will consolidate with our present voice and data network and is expected to assist RI E 9-1-1 in the "roll out" of Next Generation 911

State	Amount Spent	Description of Projects
		services, in particular, "text-to-911." It is envisioned that once RI E 9-1-1 goes live with NG911, the local service responders will be provided with this information on a call-by-call basis, if they have the capacity of receiving the text messages from RIE 9-1-1. Additionally, it is envisioned that RI E 9-1-1 will be utilizing two emergency services IP networks (ESInets) for the implementation of NG911."
SC	$325,000.00	"We have 3 counties that are operating on their own ESInet. Each has the capability of interconnecting with other counties, however, none of the counties have connected yet. There is a project between two counties to form an ESInet. Charleston Co. (a coastal county) and Spartanburg Co (an upstate county). South Carolina is in the beginning stages of implementing our 5-year NG9-1-1 Strategic Plan, recently endorsed by the SC Revenue & Fiscal Affairs Board. The plan strongly recommends South Carolina start building statewide NG9-1-1 infrastructure. Current legislation needs to be updated, since it prohibits the state from providing/funding a statewide ESInet with NG9-1-1 Core Services functionality. Legislation also should be updated in order to allow migration to NG9-1-1 from legacy systems. Legislative and Fiscal subcommittees are being organized in order to address the legislative issues keeping South Carolina from moving forward; these subcommittees will also help identify the costs and funding concerns of such a move. Both subcommittees will be made up of a mixture of SC CMRS Advisory committee members and local 911 officials from across the state. Since GIS is such an integral component of NG9-1-1 and counties will need assistance preparing local GIS data for NG9-1-1 standards, a GIS subcommittee is being organized as well. This GIS subcommittee will establish a process to integrate local GIS data into a statewide GIS database to be used in statewide NG9-1-1 Core Services. Like the Legislative and Fiscal subcommittees, the GIS subcommittee will be a collaborative effort of the SC CMRS committee, the state GIS coordinator, and local 911 and GIS officials from around the state."
SD	$3,482,957.00	"During calendar year 2015 we began deploying a statewide hosted CPE. We installed dual host equipment on either side of the state (Rapid City and Sioux Falls). Then we began installation of the leased CPE equipment at each PSAP in the state. By the end of the calendar year, we had cut over six PSAPs to the new hosted CPE. This is phase one of our statewide NG911 project. We also worked with our GIS vendor, GeoComm, to compile all of the existing GIS data in the state and create a statewide seamless GIS dataset. During the 2015 calendar year, GeoComm gathered data from all of the counties and various state agencies. They completed assessments of all the data and then provided reports back to each entity for data remediation. After data remediation, the counties submitted their revised data again for another evaluation and assessment. This second round of assessments and remediation was still on-going at the end of the year.

State	Amount Spent	Description of Projects
		The state also worked with their vendor, Comtech TCS (formerly TeleCommunications Systems) to begin preparations for the statewide ESInet. We collected contacts within each of the telecos that serve South Dakota. In December, Letters of Authorization (LOAs) were sent to each of the respective telecos."
TN	$14,000,000.00	"As of July 1, 2015, 86 PSAPs were tested for live traffic and 75 are live on the network. The number of PSAPs live on the NG911 network currently fluctuates between 75 to 90, depending on technical issues. The deployment of NG911 sometimes requires PSAPs to be "rolled off" of the network while equipment upgrades, circuit testing or other technical measures are being undertaken. Equipment is complete in 137 PSAPs across the state and all wireless carriers are now sending calls over NG911. The TECB is currently working to connect wireline and voice over internet protocol ("VoIP") carriers to the network. The TECB is also working on the development and deployment of a state-wide ALI database."
TX	$30,071,313.01	"State 9-1-1 Program: • During the calendar year of 2015, CSEC had 21 of 22 regional planning commissions completing various stages of their ESInet. Some entities were ordering equipment, while others were receiving, installing, and testing. 772 ECDs: • No projects reported. Municipal ECDs: • Purchased Next Gen capable equipment. • Consolidated dispatch center between cities of Addison, Farmers Branch, Coppell and Carrollton, TX • Installed IP enabled CPE with live redundancy at alternate site. • Established contract with Intrado/West for Text-to-911 and to upgrade circuits to TIs. • The City of Dallas has hired a consultant to perform an assessment of the City's 911 call center system (hardware and software), develop specifications and provide implementation management for a new 911 NG911 call center technology solution (hardware and software)."
UT	$1,200,000.00	"There are two more Regional ESInets that are underway in Utah, Davis County and Utah County. Expected completion dates are both 3rd quarter 2016. We have three PSAPs that have connected to a statewide backbone network that currently allows for IP call delivery, and several more in the works. All Regional ESInets currently connect to this backbone network."

State	Amount Spent	Description of Projects
VA	$1,000,000.00	"Northern VA Regional SIF Project: Knowing that the existing Verizon Selective Router Network for the legacy 9-1-1 system is nearing obsolescence, and that data preparation is a key element of transitioning to NG9-1-1, the Northern Virginia PSAPs have received a PSAP Grant to prepare the GIS datasets that are necessary to transition from the tabular MSAG and ALI database to the data that is needed to populate the Emergency Call Routing Function (ECRF) and Location Validation Function (LVF) of the NENA i3 architecture. The goal of this SIF project is to develop a regional GIS dataset for Northern Virginia that is suitable for provisioning into a live NG9-1 -1 ECRF/ LVF system residing on the ESInet. Transition to Managed IP Network for 9-1-1 Call Delivery 8 of 121 PSAPs in Virginia have cut off the Verizon or Century Link selective routers in Virginia, and transitioned away from the LEC to a managed IP Network solution through a 3rd-party provider. All 8 of those PSAPs selected West/Intrado as their provider. These transitions are all individual decisions by each PSAP."
VT	$4,604,830.00	"The State of Vermont has and continues to allow expenditures under the 9-1-1 program for Next Generation 9-1-1 services. Vermont's current statewide NG911 system is provided by FairPoint Communications."
WA	$15,037,422.00	"Washington State continued to replace analog 911 telephone equipment in the state's 54 primary PSAPs with NG911 phone systems. A total of 10 primary PSAPs were upgraded during the calendar year. In 2015, the State of Washington continued with a third-party cybersecurity assessment of the state-wide ESInet, and began solicitation of a new ESInet for Washington State."
WV	Not Specified	"Dark Fiber and routers are installed in all PSAPs in WV in preparation for NG911."
Other Jurisdictions		
DC	$4,500,000.00	"The Office of Unified Communications initiated their NG911 projects in 2015, with consulting fees, and procurement of Next Generation 9-1-1 IP logging equipment."
PR	$86,000.00	"Text 911"
Total	**$164,817,664.55**	

48. **ESInet Deployments**. To better track NG911 implementation progress, the Bureau requested that states and other responding jurisdictions provide information on whether they had any Emergency Services IP Networks (ESInets) operating during calendar year 2015. The Bureau further requested descriptions of the type and number of ESInets operating within each state or jurisdiction, and

the number of PSAPs linked to each ESInet.[85] As detailed in Table 20, thirteen states and Puerto Rico reported having deployed state-wide ESInets.[86] Fifteen states reported having regional ESInets within the state, and ten states reported local-level ESInets.[87]

Table 20 – Type and Number of ESInets Deployed During Period Ending December 31, 2015

Type Of ESInet	Number of States/Jurisdictions Indicating PSAPs Connected to ESInets		States/Jurisdictions Responding YES		Total PSAPs Operating on ESInets
	No	Yes			
Single Statewide ESInet	34	14	Connecticut Delaware Indiana Iowa Maine Minnesota New Hampshire	North Dakota Rhode Island Tennessee Vermont Washington West Virginia Puerto Rico	503
Regional ESInet	30	15	Arizona California Florida Illinois Kansas Kentucky Louisiana Michigan	Nevada North Carolina Pennsylvania Texas Utah Virginia Washington	367
Local ESInet	38	10	Colorado Florida Hawaii Louisiana Nevada North Carolina	Ohio South Carolina Utah Virginia	88

[85] The deployment of ESInets, while a significant step in the transition to NG911, does not in and of itself constitute full implementation of NG911 functionality. In addition, while the data reported here indicates that significant ESInet deployment has occurred, the data also indicates that the vast majority of PSAPs nationwide continue to operate on legacy networks.

[86] We note that deployment of ESInets is an indicator that the state or jurisdiction is transitioning to IP-based routing of 911 calls, but ESInet deployment, by itself, does not mean the state has completed its transition to NG911 service. These states include Connecticut, Indiana, Maine, Minnesota, North Dakota, New Hampshire, Rhode Island, Tennessee, Vermont, Washington, and West Virginia. In 2014, Hawaii reported that it has deployed a statewide ESInet but it did not respond to the question for this report.

[87] Note that Florida, Louisiana, Nevada, North Carolina, Utah, and Virginia state that they have both regional and local ESInets operating within the state.

49. **Text-to-911 Service.** The Bureau requested that respondents specify the number of PSAPs within each state and jurisdiction that had implemented text-to-911 as of the end of calendar year 2015. The Bureau also requested that respondents estimate the number of PSAPs that they anticipated would become text-capable by the end of calendar year 2016. Table 21 sets forth the information provided by 40 states, the District of Columbia, and Puerto Rico. Collectively, respondents reported 553 PSAPs as being text-capable as of the end of 2015, and further reported that they anticipated an additional 844 PSAPs would become text-capable by the end of 2016. For purposes of comparison, Table 21 also includes data from the FCC's Text-to-911 Registry as of December 21, 2016, which shows the number of PSAPs that the reporting jurisdictions have registered with the FCC as text capable.[88] While the total number of registered PSAPs is lower than the number of PSAPs that respondents projected would be text-capable at the end of 2016, the Bureau has received data indicating that many additional PSAPs that are not listed in the FCC registry (which is a voluntary registry) are in fact text-capable. Thus, the actual number of text-capable PSAPs as of year-end 2016 may be considerably closer to the projected total in Table 21. We anticipate that our ability to accurately monitor PSAP adoption of text-to-911 will improve with future annual data collections.

Table 21 – Text-to-911 Deployments

State	Text-Capable PSAPs As of Year End 2015	No Response	Estimated Additional Text-Capable PSAPs Launched by Year End 2016	No Response	Total Estimated Text-Capable PSAPs by Year End 2016	Total Text-Capable PSAPs Listed in FCC Text to 911 Registry as of December 21, 2016[89]
AK	0		2		2	0
AL	14		45		59	3
AR	4		4		8	6
AZ	0		0		0	1
CA	24		100		124	61
CO	43		0		43	49
CT	0		0		0	0
DE	9		0		9	9
FL	19		37		56	13
GA	5		0		5	6
HI	6		0		6	9
IA	10		103		113	11

[88] The FCC's PSAP Text-to-911 Readiness and Certification Registry is available at https://www.fcc.gov/general/psap-text-911-readiness-and-certification-form. FCC rules do not require PSAPs to register with the FCC when they become text-capable; they may notify service providers directly that they are text-capable and certified to accept texts. The FCC has encouraged all text-capable PSAPs to register with the FCC.

[89] Based on the FCC's Registry, the following states and territories are considered to have statewide text-to-911 availability: Delaware, Hawaii, Indiana, Maine, New Hampshire, New Jersey, North Dakota, Vermont, and Puerto Rico. In addition, although Missouri did not file a report, we note that 29 Missouri PSAPs are listed in the FCC Registry as text capable. Accordingly, they are included in the total of 756 provided in Table 21.

State	Text-Capable PSAPs As of Year End 2015	No Response	Estimated Additional Text-Capable PSAPs Launched by Year End 2016	No Response	Total Estimated Text-Capable PSAPs by Year End 2016	Total Text-Capable PSAPs Listed in FCC Text to 911 Registry as of December 21, 2016[89]
ID	7		19		26	9
IL		X		X	0	14
IN	84		8		92	92
KS	11		51		62	11
KY	1		12		13	3
LA	6		7		13	7
MA	0		2		2	0
MD	1		2		3	1
ME	2		24		26	2
MI	16		14		30	32
MN	0		7		7	0
MS	1		25		26	0
MT	0		4		4	24
NC	68		51		119	81
ND	0		5		5	4
NE	3		10		13	4
NH	2		0		2	1
NJ	0		17		17	19
NM	0		0		0	0
NV	4		1		5	1
NY		X		X	0	11
OH	5		65		70	3
OK		X		X	0	1
OR	0		8		8	8
PA	23		30		53	11
RI	0		0		0	0
SC	5		10		15	12
SD	0		21		21	0
TN	0		0		0	0
TX	137		87		224	149
UT	0		20		20	10
VA	25		20		45	30
VT	6		0		6	6
WA	6		23		29	6
WI	4			X	4	4
WV	0		9		9	1

State	Text-Capable PSAPs As of Year End 2015	No Response	Estimated Additional Text-Capable PSAPs Launched by Year End 2016	No Response	Total Estimated Text-Capable PSAPs by Year End 2016	Total Text-Capable PSAPs Listed in FCC Text to 911 Registry as of December 21, 2016[89]
WY		X		X		0
Other Jurisdictions						
AS	0		0		0	0
DC	0		1		1	0
PR	2		0		2	1
USVI	0		0		0	0
Totals	**553**	**4**	**844**	**5**	**1,397**	**756**

J. Cybersecurity Expenditures

50. The Bureau requested that states and jurisdictions provide information on whether they expended funds on cybersecurity programs for PSAPs in 2015 and, if so, the amounts of those expenditures. As represented in Table 22, 41jurisdictions responded that they did not expend funds on PSAP-related cybersecurity programs.[90] Eight states and the District of Columbia reported that they expended funds on cybersecurity programs for PSAPs in 2015.

51. The Bureau additionally requested information on the number of PSAPs in each state or jurisdiction that implemented or participated in cybersecurity programs in 2015. Table 22 shows that ten states reported that one or more of their PSAPs either implemented a cybersecurity program or participated in a regional or state-run cybersecurity program. Fifteen states, American Samoa, the District of Columbia, Puerto Rico, and the US Virgin Islands reported that their PSAPs did not implement or participate in cybersecurity programs.[91] Twenty-two states reported that they lacked data or otherwise did not know whether their PSAPs had implemented or participated in cybersecurity programs.

[90] Georgia reported it did not know whether the state had expended funds on cybersecurity programs. New York and Wyoming did not respond to the question.

[91] Illinois and North Dakota, which both responded that this question was not applicable to them, are included in this category.

Table 22 – Annual Cybersecurity Expenditures

State	During the annual period ending December 31, 2015, did your state expend funds on cybersecurity programs for PSAPs?					Number of PSAPs that either implemented a cyber security program or participated in a regional or state-run cyber security program.
	Yes	No	NR	Unknown	Amount	
AK		X				0
AL		X				0
AR		X				0
AZ		X				0
CA		X				0
CO		X				32
CT		X				0
DE		X				0
FL	X				$157,142.00	51
GA				X		0
HI		X				6
IA	X					114
ID		X				17
IL		X				0
IN	X					0
KS	X					14
KY		X				0
LA		X				0
MA		X				0
MD		X				0
ME	X					26

State	During the annual period ending December 31, 2015, did your state expend funds on cybersecurity programs for PSAPs?					Number of PSAPs that either implemented a cyber security program or participated in a regional or state-run cyber security program.
	Yes	No	NR	Unknown	Amount	
MI	X				$22,000,000.00[92]	0
MN		X				0
MS		X				0
MT		X				0
NC		X				0
ND		X				0
NE		X				0
NH		X				2
NJ		X				0
NM		X				0
NV		X				0
NY			X			0
OH		X				40
OK		X				0
OR		X				0
PA		X				0
RI		X				0
SC		X				0
SD		X				0
TN		X				0
TX	X				$586,478.61	64

[92] Michigan stated that its "estimated aggregate spend for Cyber Security in 2015 was $22 million. This spend represents multiple categories across multiple centralized Information Technology programs for the state. The estimated spend is comprised of actual costs and estimated costs for program resources required for specific security functions. Included within this amount are cyber expenditures for centralized cyber related infrastructure and services that are used to support three Michigan State Police operated PSAPs in Negaunee, Gaylord, [and] Detroit." Michigan Response at 19.

State	During the annual period ending December 31, 2015, did your state expend funds on cybersecurity programs for PSAPs?					Number of PSAPs that either implemented a cyber security program or participated in a regional or state-run cyber security program.
	Yes	No	NR	Unknown	Amount	
UT		X				0
VA		X				0
VT		X				0
WA	X				$153,356.00	54
WI		X				0
WV		X				0
WY			X			0
Other Jurisdictions						
AS		X				0
DC	X					0
PR		X				0
USVI		X				0
Total	**9**	**41**	**2**	**1**	**$22,896,976.61**	**420**

52. The Bureau asked states and jurisdictions to report whether they adhere to the National Institute of Standards and Technology *Framework for Improving Critical Infrastructure Cybersecurity* (NIST Framework)[93] for networks that support one or more PSAPs. Eleven states and the District of Columbia reported that they do adhere to the NIST Framework, eight states and Puerto Rico reported that they do not, and 27 states, American Samoa, and the US Virgin Islands indicated they did not know.[94]

[93] *See* National Institute of Standards and Technology, Cybersecurity Framework, at http://www.nist.gov/cyberframework/.

[94] Nevada, New York, and Wyoming did not respond to the question.

Table 23 – Adherence to the NIST Cybersecurity Framework

State	State or jurisdiction adheres to the National Institute of Standards and Technology Framework for Improving Critical Infrastructure Cybersecurity (February 2014) for networks supporting one or more PSAPs in your state or jurisdiction.			
	Yes	No	Unknown	No Response
AK			X	
AL		X		
AR			X	
AZ			X	
CA	X			
CO			X	
CT		X		
DE			X	
FL			X	
GA	X			
HI			X	
IA	X			
ID			X	
IL		X		
IN	X			
KS		X		
KY			X	
LA			X	
MA			X	
MD	X			
ME			X	
MI	X			
MN			X	

State	State or jurisdiction adheres to the National Institute of Standards and Technology Framework for Improving Critical Infrastructure Cybersecurity (February 2014) for networks supporting one or more PSAPs in your state or jurisdiction.			
	Yes	No	Unknown	No Response
MS			X	
MT			X	
NC			X	
ND			X	
NE			X	
NH	X			
NJ			X	
NM		X		
NV				X
NY				X
OH		X		
OK			X	
OR			X	
PA			X	
RI		X		
SC			X	
SD	X			
TN			X	
TX	X			
UT		X		
VA			X	
VT	X			
WA	X			
WI			X	
WV			X	

State	State or jurisdiction adheres to the National Institute of Standards and Technology Framework for Improving Critical Infrastructure Cybersecurity (February 2014) for networks supporting one or more PSAPs in your state or jurisdiction.			
	Yes	No	Unknown	No Response
WY				X
Other Jurisdictions				
AS			X	
DC	X			
PR		X		
USVI			X	
Totals	**12**	**9**	**29**	**3**

K. Measuring Effective Utilization of 911/E911 Fees

53. The questionnaire asked respondents to provide "an assessment of the effects achieved from the expenditure of state 911/E911 or NG911 funds, including any criteria [the] state or jurisdiction uses to measure the effectiveness of the use of 911/E911 fees and charges." Of the jurisdictions that responded, 42 described some effort to measure the effectiveness of 911/E911 fund expenditures. Responses varied from descriptions of how funds had been spent on NG911 to state plans with metrics describing improvements to the 911 system. Alabama reported that it has begun collecting data on a biennial basis, with the first result a report a historical survey of state 911 fees.[95] According to Kentucky, state certified PSAPs are subject to various audits to measure effectiveness, including an audit that measures the accuracy of their ability to plot the location of wireless 911 calls; financial audits at least once every six years; and required completion of a PSAP survey to maintain state certification.[96] North Carolina reported that the North Carolina 911 Board completed a rulemaking process, effective July 2016, to establish administrative rules for the state's primary PSAPs that receive 911 funding, including development of an assessment tool to assist PSAP managers.[97] In addition, North Carolina reported that it uses "the Electronic Call Analysis Tracking System (ECaTS) to measure individual call answer times by PSAP, which enabled it to improve call answering times.[98]

[95] Alabama Response at 19-27.

[96] Kentucky Response at 18.

[97] North Carolina Response at 19.

[98] *Id.* According to North Carolina, in January 2014, 33 percent of its PSAPs (42) did not meet the state's standard of 10 second answer time for 90 percent of all 911 calls. In December 2014, that number had decreased to 23 percent, and by December 2015, had decreased to 8.2 percent. North Carolina found that "this indicates that better training, better equipment and more attention to performance was given as a direct result of 911 funding." *Id.*

54. Some states indicate that measuring effectiveness lies with local organizations. Georgia stated that because local governments collect all 911 fees, "there are no state assessments on these funds available detailing the effect achieved from any 911 expenditures."[99] Mississippi reported that the state does not have "a committee, organization, or board that has oversight or that implements the policies and procedures regarding 911/E911 usage [and] responsibility lays solely with the local board of supervisors" to measure the effective utilization of 911 fees.[100]

55. In 2014, the Commission formed an expert advisory committee, the Task Force on Optimal Public Safety Answering Point Architecture (Task Force), to provide comprehensive recommendations on actions that state, local, and tribal 911 authorities can take to optimize cybersecurity, network architecture, and funding. The Task Force completed its work on December 2, 2016, with the adoption of final reports that provide detailed recommendations for state and local NG911 planning and budgeting and a common NG911 "scorecard" to enable jurisdictions to assess the progress and maturity of their NG911 implementations.[101] We anticipate that as states and other jurisdictions incorporate these guidelines into their planning, future fee reports will provide enhanced information on the effective utilization of 911/E911 fees.

L. Public Comments on 2015 Seventh Annual Report

56. As in past reports, this section summarizes public comments received in response to the prior year's report. On January 8, 2016 the Commission issued a Public Notice seeking comment on the 2015 Seventh Annual Report and the sufficiency and accuracy of the reported information.[102] We received input from seven commenters.[103] APCO states that "diverting 9-1-1 fees exacerbates challenges that are already facing resource-constrained PSAPs," and "not only can fee diversion render a state ineligible for federal grants, it also undermines the case for funding made by non-diverting states."[104] T-Mobile concurs, arguing further that "one of the biggest contributors to fee diversion and its impact on 911 funding is the lack of consensus around what activities and investments 911 fees should support," a situation made more complicated by varying state statutes as to what constitutes a permissible use of 911 fees.[105] T-Mobile believes that different statutory allowances means "the amount of fees that are diverted to non-911 activities may actually be higher than the [FCC] report indicates."[106] Lastly, T-Mobile suggests that because "the FCC relies on states to self-report fee diversion [and that many states] do not require an independent audit of 911 fee collections or

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[99] Georgia Response at 18.

[100] Mississippi Response at 18.

[101] *See* FCC, Task Force on Optimal PSAP Architecture, at https://www.fcc.gov/about-fcc/advisory-committees/general/task-force-optimal-public-safety-answering-point.

[102] FCC Seeks Public Comment on Seventh Annual Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges, Public Notice, 31 FCC Rcd 84 (Jan. 8, 2016) (*Public Notice*), available at https://ecfsapi.fcc.gov/file/60001536009.pdf.

[103] The Commission received comments from APCO, the Washington State APCO-NENA Chapter, the New Jersey Association of Counties, the Commonwealth of Virginia, and Reply Comments from T-Mobile USA, Inc. and the New Jersey Wireless Association.

[104] APCO Comments at 2.

[105] T-Mobile Reply Comments at 2.

[106] *Id.*

expenditures [then] these self-reports could well be understated even with respect to the permitted uses under state law."[107]

57. Commonwealth of Virginia (Virginia) takes issue with the Bureau designating the state as a diverter in the 2014 period, because "the fee distribution practices Virginia reported to the FCC [in the Seventh Report] are not new and have been reported in each of the six prior years' submissions."[108] According to Virginia, "these practices were not deemed diversions in the past, but now appear to be considered diversions [but] the subject report gives no explanation for the change."[109] Virginia reports that the Virginia State Police plays a critical role in the processing of 911 calls, transferring as many as 211,000 wireless 911 calls annually for answering and processing.[110] According to Virginia, '"the $3.7 million transferred in the Virginia Appropriation Act from the fund to the State Police supports this ongoing role in the provision of 9-1-1 services and is not a diversion of funds away from 9-1-1 services."[111] Virginia also points out that "fewer CMRS providers sought cost recovery over the last several years and [the state] recognized an opportunity to fund 9-1-1 dispatchers with a portion of this funding [and thus] the Virginia Appropriation Act [shifted] a portion of the CMRS provider funding ($8 million) to the Compensation Board," which directly supports dispatchers in 911 centers.[112] Although Virginia agrees that the report does indicate that the diverted funds are being used to support other public safety or emergency response-related programs, Virginia believes that "this statement does not fully characterize the situation in Virginia" and thus Virginia seeks reconsideration of the classification as a diverter.[113]

58. The New Jersey Association of Counties (NJAC) comments that New Jersey "collects in excess of $100 million annually in telecommunication user surcharges, itemized on consumer bills as "9-1-1 System/Emergency Response Fees," [but] the vast majority of 9-1-1 service requests in the State continue to be handled by county and municipal PSAPs [and] the State has not allocated any funding whatsoever through the 9-1-1 Trust Fund to local PSAP operators since 2009."[114] According to NIAC, "[d]ue to this lack of funding, counties operating PSAPs have become self-reliant in improving, maintaining and operating their 9-1-1 systems, despite local residents providing the State a consistent

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[107] *Id.* at 3.

[108] Commonwealth of Virginia Comments at 1. According to Virginia, "[u]nder the sections of the Code of Virginia that concern 9-1-1 funding, Virginia collects a $0.75 monthly surcharge from all wireless subscribers to fund 9-1-1 services within the Commonwealth. The revenue collected is distributed to cover several 9-1-1 needs. The largest portion (60 percent) of the funding is distributed monthly to the local 9-1-1 centers to support operational expenses. An additional 10 percent of the fund is set aside to provide grants to localities to assist with equipment and services purchases and upgrades. The remaining funding (30 percent) is held to provide cost recovery to commercial mobile radio system (CMRS) providers for the costs of providing Phase I and Phase 2 data in Virginia." *Id.*

[109] *Id.*

[110] *Id.* at 2.

[111] *Id.* According to Virginia, "there are only two other call centers in Virginia processing more wireless 9-1-1 calls than the State Police."

[112] *Id.*

[113] *Id.*

[114] New Jersey Association of Counties Comments at 1. *See also* New Jersey Wireless Association Reply Comments at 2 ("During the years 2006-2009, a portion of the 911 Trust Fund provided grants to New Jersey counties/municipalities. After 2009, no funds were granted to New Jersey counties and municipalities. While grants to locally run PSAPs have been eliminated, the State has allocated 911 Trust Funds to agencies and expense categories that NJWA believes are not consistent with the Act's spirit and intent.").

revenue stream intended for such purposes."[115] New Jersey Wireless Association states that, "while [New Jersey Statutes, section 52:17C-19, establishing the 911 Trust Fund] does not specifically permit these fund diversions, the current and all past administrations in our state have interpreted this Statute, since its inception in 2004, in such a manner that these 911 fee diversions are now a de-facto way of addressing other budget gaps."[116] NJAC urges the FCC to recognize this critical public safety funding diversion and take action to ensure 9-1-1 Trust Fund revenues are spent solely on eligible expenses [as] [d]oing so will help to ensure that local PSAPs have the funding necessary to continue to provide residents with effective, efficient and up to date 9-1-1 systems as intended."[117]

59. The Bureau also sought comment on whether there have been other instances of fee diversion by states or local jurisdictions, including counties or other jurisdictions in state that have local of hybrid fee collection programs.[118] The Washington State APCO-NENA Chapter (APCO-NENA) commented that it is "concerned about the use of 911 funds for purposes other than 911 in Washington State."[119] According to APCO-NENA, although Washington State "correctly answered yes" to Question G regarding the use of collected 911 fees within the state's relevant funding mechanism, "Washington State routinely changes the funding mechanism to permit use of 911 funds for purposes other than 911."[120] APCO-NENA believes that "without a national standard definition for appropriate uses of 911 funds it is left to each state or jurisdiction to determine their own definition/boundaries and expenditure rules" and that "911 funds generated from the current funding model do not entirely cover the cost of providing the 911/E911/NG911 services."[121] T-Mobile notes that Michigan "collects 'Police and Fire' fees, but those fees are deposited in the state's general fund rather than being set aside for police and fire activities."[122] Similarly, T-Mobile points out that Colorado uses 911 fees for "the hiring and training of call takers – which is closely connected to the provision of 911 services, but also may be considered fee diversion."[123]

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[115] *Id.*

[116] New Jersey Wireless Association Reply Comments at 3.

[117] *Id.*

[118] *Public Notice* at 2.

[119] Washington State APCO-NENA Chapter Comments (Feb. 17, 2016) at 1. *See* also T-Mobile Reply Comments at 3.

[120] *Id.* APCO-NENA points out that in its State Fiscal Year 2013-2015 biennium, the Washington State legislature appropriated State E911 Funds as follows: $10,842,000 to the Washington Military Department Operating Budget – replacing equivalent General Fund (GF)-S with dedicated State E911 Account Funding; $3,867,000 to the Washington State Patrol – Mobile Office Platform; and $2,000,000 to the Department of Corrections – Radio Infrastructure Upgrade. Similarly, in the State Fiscal Year 2015-2017 biennium, the legislature approved appropriations from the State E911 Fund as follows: $8,606,000 – to the Washington Military Department Operating Budget – replaced equivalent GF-S with dedicated State E911 Account Funding; $3,230,000 to the Washington State Patrol –Criminal History Fingerprint System; $ 633,000 for state government policy compensation changes; and $ 130,000 for a King County cardiac arrest response pilot project. *See also* Robert Oenning ("If legislatively approved redirection of funds explicitly collected for support of 911 operations is not considered diversion by the Commission that should be made abundantly clear in the report to Congress. If legislative redirection is considered diversion that should be made clear to the reporting entities, and in this case the report should be appropriately corrected.").

[121] *Id.* at 2.

[122] T-Mobile Reply Comments at 2-3.

[123] *Id.*

60. We sought comment on whether expenditure of 911 fees on NG911-related programs as documented in the Report is effectively contributing to implementation of NG911 services and infrastructure, including deployment of text-to-911.[124] APCO states that "it is important to have a clear picture of current NG9-1-1 deployments, as well as the challenges facing states, in order to facilitate the transition to NG9-1-1 nationwide." APCO believes that because "there is still no consensus-based, standardized definition of NG9-1-1, which makes data analysis and planning the transition to NG9-1-1 more difficult, the responses received for the [annual report] may present an unclear picture of NG911 expenditures." By way of example, APCO points out that some "states reported funds and efforts related to text-to-911 as NG911 expenditures [but] the current, interim SMS text-to-911 solution available in some areas today is more accurately defined as an enhancement to a legacy system as opposed to an initial capability of NG9-1-1."[125] APCO agrees with the Commission that ESInet deployment is an indicator that the state or jurisdiction is transitioning to IP-based routing of 911 calls, but "limiting the definition of NG9-1-1 to IP-based routing overlooks additional needs for staffing, technologists, cyber security, records management systems, logging, and a variety of other requirements."[126] Lastly, ACPO recommends that the Commission "seek additional information to better understand how states should amend any laws or regulations that act as impediments to the deployment of NG9-1-1."[127]

61. APCO urges the Commission "to take a proactive role in properly defining NG9-1-1 as end-to-end (from the caller to the telecommunicator) IP connectivity enabling current voice communications, future multimedia, and other data capabilities to flow from the 9-1-1 caller to the PSAP and be properly reported, archived, and further transmitted between the PSAP and first responders. The definition must be both clear and comprehensive to ensure adequate funding and planning."[128] Finally, APCO recommends revising the annual questionnaire to capture information related to the technical standards that states and their vendors are employing for NG911 components so as to better understand what "these standards entail, how they are applied, and whether they ensure interoperability between systems" and to help "stakeholders identify gaps and determine whether there's a need to complete or refine NG9-1-1 standards."[129]

62. We also sought comment on whether 911 fees are being effectively used by state, local, and tribal jurisdictions to implement cybersecurity best practices within PSAPs as well as adherence to the National Institute of Standards and Technology Cybersecurity Framework.[130] APCO states that as "states and jurisdictions continue to transition to IP-based networks and equipment, cyber security is an increasingly critical consideration."[131] Noting that "cybersecurity programs" may be interpreted to encompass a vast array of practices and initiatives, such as cyber hygiene, workforce training, and hiring cyber security consultants, APCO recommends that the Commission "provide guidance about

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[124] *Public Notice* at 2.

[125] APCO Comments at 3.

[126] *Id.*

[127] *Id.* at 5.

[128] APCO Comments at 3.

[129] *Id.* at 4.

[130] *Public Notice* at 2.

[131] APCO Comments at 4.

what constitutes a "cybersecurity program" and seek more focused information about the types of cybersecurity programs states and PSAPs are participating in and implementing."[132] In this way, argues APCO, "[u]nderstanding the cybersecurity efforts underway may assist with the development of cybersecurity plans to achieve economies of scale, real time capabilities, and operational efficiencies . . . information [that] will also be useful for promoting increased awareness, transparency, information sharing, and related educational efforts among public safety stakeholders."[133] Lastly, APCO cautions that "while the deployment of IP networks and equipment increases the cyber risk, vulnerabilities also exist for legacy systems [and] [b]oth legacy and next generation PSAPs must be equipped to identify, defend against, and recover from cyberattacks."[134]

63. We sought comment on the role of oversight and auditing in ensuring that collected 911 fees are used according to state and local requirements, and on whether additional efforts are needed to ensure that state and local entities have the authority to monitor and audit 911 fee collections.[135] We did not receive any comments on this line of inquiry.

V. PUBLIC COMMENTS REGARDING THE 2016 EIGHTH ANNUAL REPORT

64. Following submission of this report to Congress, the Commission will make the report public and will formally seek public comment on it. We will include any pertinent information from public comments in next year's report.

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[132] *Id.*

[133] *Id.*

[134] *Id.*

[135] *Public Notice* at 2.

Appendix A

Summary of State Responses Regarding 2015 Collections

State/Other Jurisdiction	Type of Fund Collection	Authority to Approve 911 Expenditures	Total Funds Collected (2015 Annual Period)	Total Funds Used for Non-911 Related Purposes	NG911 Funding Permissible under 911/E911 Funding Authority	Total Funds Used for NG911 (2015 Annual Period)	NG911 Expenditures as a % of Total Funds Collected
AK	Local	Local	$12,837,113.68	None	No	None	--
AL	State	Hybrid	$116,440,103.36	None	Yes	$516,285.31	.4%
AR	Hybrid	Hybrid	$26,985,554.99	None	Yes	None	--
AZ	State	State	$19,227,222.00	None	Yes	$17,804.00	.1%
CA	State	State	$87,838,234.00	None	Yes	$3,687,206.00	4.2%
CO	Hybrid	Local	$52,732,731.00	None	Yes	$4,083,718.00	7.7%
CT	State	State	$32,564,308.00	None	Yes	None	--
DE	State	Hybrid	$8,159,730.03[136]	None	Yes	$2,700,000.00	33%
FL	State	Hybrid	$108,226,957.00	None	Yes	$17,162,709.23	15.9%
GA	Local	Local	$17,659,037.41	None	Yes	None	--

[136] 2014 total used as proxy.

State/Other Jurisdiction	Type of Fund Collection	Authority to Approve 911 Expenditures	Total Funds Collected (2015 Annual Period)	Total Funds Used for Non-911 Related Purposes	NG911 Funding Permissible under 911/E911 Funding Authority	Total Funds Used for NG911 (2015 Annual Period)	NG911 Expenditures as a % of Total Funds Collected
HI	State	State	$10,237,032.00	None	Yes	$2,687,000.00	26.2%
IA	Hybrid	Hybrid	$40,547,767.19	$4,000,000.00 *(9.9%)*	Yes	$16,000,000.00	39.5%
ID	Hybrid	Local	$20,952,378.70	None	Yes	None	--
IL	Hybrid	Local	$95,500,349.00	$5,000,000.00 *(5.2%)*	No	None	--
IN	State	Hybrid	$79,108,857.85	None	Yes	$8,500,000.00	10.7%
KS	State	Hybrid	$20,821,974.24	None	Yes	$4,610,580.68	22.1%
KY	Hybrid	Hybrid	$53,500,000.00	None	Yes	Unknown	--
LA	Hybrid	Local	$42,750,000.00	None	Yes	Unknown	--
MA	State	State	$95,508,773.40	None	Yes	$9,540,773.00	10%
MD	State	State	$53,314,406.32	None	Yes	$5,867,257.46	11%
ME	State	State	$8,402,473.00	None	Yes	$5,070,752.00	60.3%
MI	Hybrid	Hybrid	$93,333,482.76	None	Yes	$608,014.68	.7%
MN	State	State	$62,110,858.23	None	Yes	$6,404,339.00	10.3%

State/Other Jurisdiction	Type of Fund Collection	Authority to Approve 911 Expenditures	Total Funds Collected (2015 Annual Period)	Total Funds Used for Non-911 Related Purposes	NG911 Funding Permissible under 911/E911 Funding Authority	Total Funds Used for NG911 (2015 Annual Period)	NG911 Expenditures as a % of Total Funds Collected
MS	Local	Local	$26,510,538.00	None	Yes	None	--
MT	State	Hybrid	$13,000,000.00	None	No	None	--
NC	State	State	$81,135,377.32	None	Yes	$1,524,654.00	1.9%
ND	Hybrid	Local	$10,337,907.00	None	Yes	$255,750.00	2.5%
NE	Hybrid	Hybrid	$13,900,447.54	None	Yes	None	--
NH	State	State	$12,317,417.55	$2,078,685.85 *(16.9%)*	Yes	None	--
NJ	State	State	$122,632,000.00	$110,278,000.00 *(89.9%)*	Yes	$75,871.14	.1%
NM	State	State	$11,146,012.00	None	Yes	None	--
NV	Local	Local	$1,591,367.00 (Washoe County)	None	Yes (Counties of Washoe and Nye County)	$242,000.00 (Nye County)	--
NY	Hybrid	Hybrid	$185,262,082.00	$77,254,288.19 *(42%)*	Yes	Not Specified	--
OH	Hybrid	Hybrid	$40,382,365.16	None	Yes	Not Specified	--
OK	State	Local	Did Not Provide	None	No	Unknown	--

State/Other Jurisdiction	Type of Fund Collection	Authority to Approve 911 Expenditures	Total Funds Collected (2015 Annual Period)	Total Funds Used for Non-911 Related Purposes	NG911 Funding Permissible under 911/E911 Funding Authority	Total Funds Used for NG911 (2015 Annual Period)	NG911 Expenditures as a % of Total Funds Collected
OR	State	Hybrid	$39,470,386.00	None	Yes	$325,428.04	.8%
PA	State	Hybrid	$239,800,218.00	None	Yes	Unknown	--
RI	State	State	$16,345,363.80	$11,185,216.24 *(68.4%)*	Yes	$630,000.00	3.9%
SC	Hybrid	Hybrid	$39,054,282.49	None	Yes	$325,000.00	.8%
SD	State	Hybrid	$13,093,702.00	None	Yes	$3,482,957.00	26.6%
TN	State	Hybrid	$78,729,854.00	None	Yes	$14,000,000.00	17.8%
TX	Hybrid	Hybrid	$222,938,735.00	None	Yes	$30,071,313.01	13.5%
UT	State	Hybrid	$27,130,872.00	None	Yes	$1,200,000.00	4.4%
VA	State	Hybrid	$85,431,606.09	None	Yes	$1,000,000.00	1.2%
VT	State	State	$6,256,658.00[137]	None	Yes	$4,604,830.00	73.6%

[137] Total collected under Vermont Universal Service Fund fee of 2% on all telecommunications service providers.

State/Other Jurisdiction	Type of Fund Collection	Authority to Approve 911 Expenditures	Total Funds Collected (2015 Annual Period)	Total Funds Used for Non-911 Related Purposes	NG911 Funding Permissible under 911/E911 Funding Authority	Total Funds Used for NG911 (2015 Annual Period)	NG911 Expenditures as a % of Total Funds Collected
WA	Hybrid	Hybrid	$94,445,461.00	$6,017,185.00 *(6.4%)*	Yes	$15,037,4232.00	15.9%
WI	Fees retained in full by service providers	Not Applicable	Did Not Provide	None	Yes	None	--
WV	Hybrid	Hybrid	$56,649,322.00	$3,984,195.00 *(7%)*	Yes	Not Specified	--
WY	Local	Local	Did Not Provide	None	Did Not Provide	Unknown	--
Other Jurisdictions							
AS	None [138]	Not Applicable	Not Applicable	None	Did Not Provide	None	--
DC	City	City	$12,189,231.34	None	Yes	$4,500,000.00	36.9%
PR	State	State	$21,896,788.53	$484,016.54 *(2.2%)*	No	$86,000.00	.4%
USVI	State	State	$1,297,671.00	None	No	None	--
States/Jurisdictions That Did Not File a Report							
Missouri Guam Northern Marianas Islands							

[138] 911 service is budgeted through the executive office of the Department of Public Safety.

Appendix B

Overview of Total State 911 Fees - 2009 to 2016 Reports[139]

State	2009 Report	2010 Report	2011 Report	2012 Report	2013 Report	2014 Report	2015 Report	2016 Report
AK	DNP	$8,199,046.36	$8,649,083.00	$12,320,888.00	$12,256,620.07	$12,448,651.46	$13,969,230.81	$12,837,113.68
AL	$60,465,103.67	$29,857,571.09	$28,680,846.00	$28,401,585.00	$28,401,585.00	$41,974,723.93	$108,787,855.93	$116,440,103.36
AR	$24,799,338.00	DNP	DNP	DNP	DNP	DNP	$25,290,789.81	$26,985,554.99
AZ	$15,056,353.00	$17,460,160.00	$16,238,766.00	$16,747,691.00	$16,445,301.00	$16,628,695.00	$17,589,404.00	$19,227,222.00
CA	$106,817,446.59	$101,450,093.46	$100,000,000.00	$85,952,018.00	$82,126,695.00	$75,714,948.00	$97,077,234.00	$87,838,234.00
CO	$45,000,000.00	$45,000,000.00	$45,000,000.00	$1,907,087.00	$42,900,000.00 (est.)	$42,900,000.00 (est.)	$52,257,085.00 (est.)	$52,732,731.00 (est.)
CT	$20,116,090.61	$21,397,572.52	$20,723,228.00	$22,413,228.00	$24,001,890.00	$35,755,787.70	$37,176,000.00	$32,564,308.00
DE	DNP	$2,259,727.83	$8,044,859.00	$8,775,757.00	$7,623,391.53	$7,786,658.53	$8,159,730.03	$8,159,730.03[140]
FL	$130,962,053.00	$125,531,674.00	$123,059,300.00	$122,550,767.00	$108,896,142.00	$107,884,715.00	$108,324,754.00	$108,226,957.00
GA	DNP	$8,537,319.00	$8,950,569.00	$13,700,097.00	DNP	$18,462,645.22	$17,538,556.19	$17,659,037.41
HI	$8,842,841.49	$9,578,764.44	$9,544,397.00	$9,755,031.00	$10,020,045.00	$9,599,983.00	$10,489,700.00	$10,237,032.00
IA	$29,054,622.00	$31,458,531.00	$31,304,377.00	$30,664,253.00	$30,297,168.00	$20,657,733.45	$27,820,551.74	$40,547,767.19
ID	$19,191,409.99	$18,673,808.67	$18,013,902.00	$17,013,000.00	$19,313,000.00	$20,768,995.00	$20,879,778.16	$20,952,378.70
IL	DNP	$67,000,000.00	$69,700,000.00	$71,900,000.00	$69,200,000.00	$71,200,000.00	$213,983,628.00	$95,500,349.00
IN	$71,000,000.00	$39,600,000.00	$30,000,000.00	DNP	$69,515,799.65	$73,114,655.69	$72,075,593.48	$79,108,857.85
KS	DNP	$6,705,538.67	DNP	$22,125,937.00	$20,477,020.47	$20,573,217.00	$20,337,748.19	$20,821,974.24
KY	$23,569,921.00	$22,979,827.96	$54,900,000.00	$56,500,000.00	$55,700,000.00	$53,506,843.30	$53,920,232.00	$53,500,000.00
LA	DNP	DNP	$3,017,672.00	DNP	$4,912,926.00	DNP	DNP	$42,750,000.00
MA	DNP	$69,694,702.00	$75,125,185.00	$73,408,835.00	$73,677,263.00	$74,561,727.61	$74,947,715.00	$95,508,773.40
MD	$57,176,923.16	$55,556,616.37	$54,560,255.00	$52,099,601.00	$52,240,760.76	$51,716,231.56	$54,766,848.29	$53,314,406.32
ME	$6,664,062.00	$6,108,985.00	$7,786,855.00	$8,416,235.00	$8,342,459.00	$8,034,327.32	$8,340,150.00	$8,402,473.00

[139] "DNP" indicates that the state or jurisdiction did not provide the information.

[140] 2014 Total used as proxy.

State	2009 Report	2010 Report	2011 Report	2012 Report	2013 Report	2014 Report	2015 Report	2016 Report
MI	$69,835,671.59	$93,000,132.24	$87,673,893.00	$196,215,849.00	$181,204,130.55	$178,224,825.56	$88,932,890.69	$93,333,482.76
MN	$51,281,641.00	$51,269,514.00	$58,821,937.00	$58,654,182.00	$62,353,897.17	$62,056,115.98	$61,446,108.15	$62,110,858.23
MO	DNP	DNP	DNP	DNP	DNP	DNP	DNP	DNP
MS	$11,758,733.12	DNP	$56,335,986.00	$60,813,014.00	$65,290,042.40	$58,175,490.31	$31,280,356.96	$26,510,538.00
MT	$13,172,462.14	$13,172,462.14	$13,715,064.00	$13,626,940.00	$13,177,751.61	$13,099,542.00	$13,000,000.00	$13,000,000.00
NC	$84,613,672.00	$87,367,015.00	$80,001,662.00	DNP	$69,424,896.51	$71,688,784.47	$78,161,246.38	$81,135,377.32
ND	DNP	$8,369,366.00	DNP	$9,506,000.00	$9,506,000.00	$9,998,322.00	$10,337,907.00	$10,337,907.00
NE	$13,278,907.19	$5,507,239.80	$8,128,042.00	$14,808,421.00	$15,555,733.76	$15,663,631.18	$13,940,368.00	$13,900,447.54
NH	$10,854,202.82	DNP	$9,832,831.00	DNP	$10,493,486.32	$10,467,786.57	$10,582,269.31	$12,317,417.55
NJ	$130,000,000.00	$128,900,000.00	DNP	$125,000,000.00	$126,000,000.00	$121,000,000.00	$120,000,000.00	$122,632,000.00
NM	$12,786,327.64	$12,073,923.31	$13,081,062.00	$13,424,002.00	$12,028,770.41	$11,970,079.32	$11,600,163.44	$11,146,012.00
NV	DNP	DNP	DNP	DNP	$2,010,341.58	$1,944,446.69	DNP	$1,591,367.00 (Washoe County)
NY	$83,700,000.00	DNP	$193,194,759.00	$194,787,113.00	$190,281,716.00	$183,219,891.00	$185,513,240.00	$185,262,082.00
OH	$28,544,923.91	$28,164,049.54	$29,175,929.00	DNP	$28,837,121.12	$25,689,296.16	$25,736,969.91	$40,382,365.16
OK	DNP	DNP	DNP	DNP	DNP	DNP	DNP	DNP
OR	$87,447,639.72	$40,155,054.04	$39,592,560.00	$39,370,086.00	$39,229,319.00	$39,115,990.00	$39,470,386.00	$39,470,386.00
PA	$190,239,804.99	$116,656,192.90	$194,554,260.00	$192,297,459.00	$184,044,508.00	$192,779,782.15	$190,711,113.00	$239,800,218.00
RI	$19,400,000.00	$18,200,000.00	$15,488,729.00	DNP	$16,500,000.00	$17,454,000.00	$17,640,703.00	$16,345,363.80
SC	$22,000,000.00	DNP	$21,988,052.00	$22,215,748.00	$28,948,882.35	$27,690,958.32	$28,458,896.05	$39,054,282.49
SD	DNP	DNP	$8,100,000.00	$8,200,000.00	$9,111,476.00	$13,275,031.00	$13,095,234.00	$13,093,702.00
TN	$51,536,089.00	$55,965,000.00	$58,500,000.00	$94,497,881.00	$60,852,139.96	$98,199,801.31	$67,404,840.00	$78,729,854.00
TX	$197,228,795.88	$203,547,359.97	$199,025,787.00	$209,202,098.00	$212,788,623.00	$213,215,483.00	$208,478,516.24	$222,938,735.00
UT	$23,366,301.00	$2,724,374.00	$23,909,566.00	$23,070,307.00	$26,188,051.00	$29,354,710.30	$24,572,000.00	$27,130,872.00
VA	DNP	$52,022,170.24	$53,217,635.00	$54,079,487.00	$51,658,842.97	$55,212,203.72	$85,187,559.69	$85,431,606.09
VT	$4,832,374.02	$5,487,046.00	$4,605,803.00	$4,993,132.00	$5,416,336.00	$4,628,027.00	DNP	$6,256,658.00
WA	$69,523,163.00	$71,036,718.00	$71,244,435.00	$100,952,115.00	$95,417,113.85	$95,887,087.00	$91,529,550.00	$94,445,461.00
WI	$9,602,745.46	DNP	DNP	DNP	DNP	DNP	DNP	DNP

State	2009 Report	2010 Report	2011 Report	2012 Report	2013 Report	2014 Report	2015 Report	2016 Report
WV	$32,278,728.00	$33,760,563.00	$35,375,580.00	$36,176,377.00	$37,928,204.37	$58,001,074.83	$56,323,470.55	$56,649,322.00
WY	$6,700,000.00	DNP	DNP	DNP	DNP	DNP	DNP	DNP
Other Jurisdictions								
AS	DNP	DNP	DNP	DNP	DNP	DNP	DNP	DNP
DC	$12,744,103.00	$12,714,347.00	$12,700,000.00	DNP	$12,064,842.00	$13,700,000.00	$10,488,987.85	$12,189,231.34
Guam	$1,468,363.00	DNP	DNP	$1,779,710.00	DNP	DNP	DNP	DNP
No. M	NA	NA	NA	NA	DNP	DNP	DNP	DNP
PR	$20,952,458.73	$21,876,276.72	DNP	$21,367,260.00	$20,323,323.95	$19,507,889.00	DNP	$21,896,788.53
USVI	NA	$590,812.00	$554,245.00	DNP	DNP	DNP	DNP	$1,297,671.00
Total	**$1,877,863,271.72**	**$1,749,609,554.27**	**$2,002,117,111.00**	**$2,149,689,191.00**	**$2,322,983,616.36**	**$2,404,510,787.64**	**$2,527,625,360.85**	**$2,631,705,008.98**

Appendix C

Approved by OMB
3060-1122
Expires: March 31, 2018
Estimated time per response: 10-55 hours

Annual Collection of Information

Related to the Collection and Use of 911 and E911 Fees by States and Other Jurisdictions

Pursuant to OMB authorization 3060-1122 , the FCC's Public Safety and Homeland Security Bureau seeks the following specific information in order to fulfill the Commission's obligations under Section 6(f)(2) of the NET 911 Act:

A. Filing Information

1. Name of State or Jurisdiction

State or Jurisdiction

2. Name, Title and Organization of Individual Filing Report

Name	Title	Organization

B. Overview of State or Jurisdiction 911 System

1. **Please provide the total number of active Public Safety Answering Points (PSAPs) in your state or jurisdiction that receive funding derived from the collection of 911/E911 fees during the annual period ending December 31, 2015:**

PSAP Type[141]	Total
Primary	
Secondary	
Total	

2. **Please provide the total number of active telecommunicators[142] in your state or jurisdiction that were funded through the collection of 911 and E911 fees during the annual period ending December 31, 2015:**

Number of Active Telecommunicators	Total
Full-Time	
Part-time	

3. **For the annual period ending December 31, 2015, please provide an estimate of the total cost to provide 911/E911 service in your state or jurisdiction.**

Amount ($)	

[141] A Primary PSAP is one to which 911 calls are routed directly from the 911 Control office. A secondary PSAP is one to which 911 calls are transferred from a Primary PSAP. *See* National Emergency Number Association, Master Glossary of 9-1-1 Terminology (*Master Glossary*), July 29, 2014, at 118, 126, available at https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/Standards/NENA-ADM-000.18-2014_2014072.pdf .

[142] A telecommunicator, also known as a call taker or a dispatcher, is a person employed by a PSAP who is qualified to answer incoming emergency telephone calls and/or who provides for the appropriate emergency response either directly or through communication with the appropriate PSAP. *See Master Glossary* at 137.

3a. If an amount cannot be provided, please explain why.

4. Please provide the total number of 911 calls your state or jurisdiction received during the period January 1, 2015 to December 31, 2015.

Type of Service	Total 911 Calls
Wireline	
Wireless	
VoIP	
Other	
Total	

C. <u>Description of Authority Enabling Establishment of 911/E911 Funding Mechanisms</u>

1. Has your State, or any political subdivision, Indian tribe, village or regional corporation therein as defined by Section 6(f)(1) of the NET 911 Act, established a funding mechanism designated for or imposed for the purposes of 911 or E911 support or implementation (please include a citation to the legal authority for such mechanism)? *Check one.*

- Yes ……..
- No ……..….. ☐

1a. If yes, provide a citation to the legal authority for such a mechanism.

1b. If yes, during the annual period January 1 - December 31, 2015, did your state or jurisdiction amend, enlarge, or in any way alter the funding mechanism.

2. **Which of the following best describes the type of authority arrangement for the collection of 911/E911 fees?** *Check one.*

- The State collects the fees …….. ☐
- A Local Authority collects the fees …….. ☐
- A hybrid approach where two or more governing bodies (*e.g.*, state and local authority) collect the fees …….. ☐

3. **Describe how the funds collected are made available to localities.**

D. <u>Description of State or Jurisdictional Authority That Determines How 911/E911 Fees are Spent</u>

1. Indicate which entities in your state have the authority to approve the expenditure of funds collected for 911 or E911 purposes.		
Jurisdiction	**Authority to Approve Expenditure of Funds** ***(Check one)***	
	Yes	**No**
State	☐	☐
Local (*e.g.*, county, city, municipality)	☐	☐
1b. Please briefly describe any limitations on the approval authority per jurisdiction (*e.g.*, limited to fees collected by the entity, limited to wireline or wireless service, etc.)		

2. **Has your state established a funding mechanism that mandates *how* collected funds can be used? *Check one*.**

- Yes …….. ☐
- No ……..….. ☐

2a. If you checked YES, provide a legal citation to the funding mechanism of any such criteria.

2b. If you checked NO, describe how your state or jurisdiction decides how collected funds can be used.

E. <u>Description of Uses of Collected 911/E911 Fees</u>

1. **Provide a statement identifying with specificity all activities, programs, and organizations for whose benefit your state, or political subdivision thereof, has obligated or expended funds collected for 911 or E911 purposes and how these activities, programs, and organizations support 911 and E911 services or enhancements of such services.**

2. Please identify the allowed uses of the collected funds. *Check all that apply.*			
Type of Cost		**Yes**	**No**
Operating Costs	Lease, purchase, maintenance of customer premises equipment (CPE) (hardware and software)	☐	☐
	Lease, purchase, maintenance of computer aided dispatch (CAD) equipment (hardware and software)	☐	☐
	Lease, purchase, maintenance of building/facility	☐	☐
Personnel Costs	Telecommunicators' Salaries	☐	☐
	Training of Telecommunicators	☐	☐
Administrative Costs	Program Administration	☐	☐
	Travel Expenses	☐	☐
Dispatch Costs	Reimbursement to other law enforcement entities providing dispatch	☐	☐
	Lease, purchase, maintenance of Radio Dispatch Networks	☐	☐
Grant Programs		☐ **If Yes, see 2a.**	☐
2a. During the annual period ending December 31, 2015, describe the grants that your state paid for through the use of collected 911/E911 fees and the purpose of the grant.			

F. Description of 911/E911 Fees Collected

1. Please describe the amount of the fees or charges imposed for the implementation and support of 911 and E911 services. Please distinguish between state and local fees for each service type.		
Service Type	**Fee/Charge Imposed**	**Jurisdiction Receiving Remittance (*e.g.*, state, county, local authority, or a combination)**
Wireline		
Wireless		
Prepaid Wireless		
Voice Over Internet Protocol (VoIP)		
Other		

2. For the annual period ending December 31, 2015, please report the total amount collected pursuant to the assessed fees or charges described in Question F 1.

Service Type	Total Amount Collected ($)
Wireline	
Wireless	
Prepaid Wireless	
Voice Over Internet Protocol	
Other	
Total	

2a. If an amount cannot be provided, please explain why.

3. Please identify any other sources of 911/E911 funding.

Question	Yes	No
4. For the annual period ending December 31, 2014, were any 911/E911 fees that were collected by your state or jurisdiction combined with any federal, state or local funds, grants, special collections, or general budget appropriations that were designated to support 911/E911/NG911 services? *Check one.*	☐	☐
4a. If Yes, please describe the federal, state or local funds and amounts that were combined with 911/E911 fees.		

5. Please provide an estimate of the proportional contribution from each funding source towards the total cost to support 911 in your state or jurisdiction.	Percent
State 911 Fees	
Local 911 Fees	
General Fund - State	
General Fund - County	
Federal Grants	
State Grants	

G. Description of Diversion or Transfer of 911/E911 Fees for Other Uses

Question	Yes	No
1. In the annual period ending December 31, 2015, were funds collected for 911 or E911 purposes in your state or jurisdiction made available or used solely for purposes designated by the funding mechanism identified in Question 5? *Check one.*	☐	☐

1a. If No, please identify what amount of funds collected for 911 or E911 purposes were made available or used for any purposes other than the ones designated by the funding mechanism or used for purposes otherwise unrelated to 911 or E911 implementation or support, including any funds transferred, loaned, or otherwise used for the state's general fund. Along with identifying the amount, please include a statement identifying the non-related purposes for which the collected 911 or E911 funds were made available or used.

Amount of Funds ($)	Identify the non-related purpose(s) for which the 911/E911 funds were used. *(Add lines as necessary)*

H. Oversight and Auditing of Collection and Use of 911/E911 Fees

Question	Yes	No
1. Has your state established any oversight or auditing mechanisms or procedures to determine whether collected funds have been made available or used for the purposes designated by the funding mechanism or otherwise used to implement or support 911? *Check one.*	☐	☐
1a. If yes, provide a description of the mechanisms or procedures and any enforcement or other corrective actions undertaken in connection with such auditing authority, for the annual period ending December 31, 2015. *(Enter "None" if no actions were taken.)*		

Question	Yes	No
2. Does your state have the authority to audit service providers to ensure that the amount of 911/E911 fees collected form subscribers matches the service provider's number of subscribers? *Check one.*	☐	☐
2a. If yes, provide a description of any auditing or enforcement or other corrective actions undertaken in connection with such auditing authority, for the annual period ending December 31, 2015. *(Enter "None" if no actions were taken.)*		

I. Description of Next Generation 911 Services and Expenditures

Question	Yes	No
1. Does your state or jurisdiction classify expenditures on Next Generation 911 as within the scope of permissible expenditures of funds for 911 or E911 purposes? *Check one.*	☐	☐
1a. If yes, in the space below, please cite any specific legal authority:		

Question	Yes	No
2. In the annual period ending December 31, 2015, has your state or jurisdiction expended funds on Next Generation 911 programs? *Check one.*	☐	☐
2a. If yes, in the space below, please enter the dollar amount that has been expended.		
Amount ($)		

3. For the annual period ending December 31, 2015, please describe the type and number of NG911 Emergency Service IP Network(s) (ESInets) that operated within your state.					
Type of ESInet	**Yes**	**No**	**If Yes, Enter Total PSAPs Operating on the ESInet**	**If Yes, does the type of ESInet interconnect with other state, regional or local ESInets?**	
				Yes	**No**
a. A single, state-wide ESInet	☐	☐		☐	☐
b. Local (*e.g.*, county) ESInet	☐	☐		☐	☐
c. Regional ESInets	☐	☐	[If more than one Regional ESInet is in operation, in the space below, provide the total PSAPs operating on each ESInet]	☐	☐
Name of Regional ESInet:				☐	☐
Name of Regional ESInet:				☐	☐

4. **Please provide a description of any NG911 projects completed or underway during the annual period ending December 31, 2015.**

Question	Total PSAPs Accepting Texts
5. **During the annual period ending December 31, 2015, how many PSAPs within your state implemented text-to-911 and are accepting texts?**	
Question	**Estimated Number of PSAPs that will Become Text Capable**
6. **In the next annual period ending December 31, 2016, how many PSAPs do you anticipate will become text capable?**	

J. Description of Cybersecurity Expenditures

Question	Check the appropriate box		If Yes, Amount Expended ($)
1. During the annual period ending December 31, 2015, did your state expend funds on cybersecurity programs for PSAPs?	Yes ☐	No ☐	

Question	Total PSAPs
2. During the annual period ending December 31, 2015, how many PSAPs in your state either implemented a cyber security program or participated in a regional or state-run cyber security program?	

Question	Yes	No	Unknown
3. Does your state or jurisdiction adhere to the National Institute of Standards and Technology *Framework for Improving Critical Infrastructure Cybersecurity* (February 2014) for networks supporting one or more PSAPs in your state or jurisdiction?	☐	☐	☐

K. Measuring Effective Utilization of 911/E911 Fees

1. **Please provide an assessment of the effects achieved from the expenditure of state 911/E911 or NG911 funds, including any criteria your state or jurisdiction uses to measure the effectiveness of the use of 911/E911 fees and charges. If your state conducts annual or other periodic assessments, please provide an electronic copy (*e.g.*, Word, PDF) of the latest such report upon submission of this questionnaire to the FCC or provide links to online versions of such reports in the space below.**

Executive Director Report

Richard Taylor

b) Update on PSAP Funding Model

Consultant

Executive Director Report

Richard Taylor

c) Board Member Orientation

911 Funding Committee Report David Bone

a) Caswell County 911 Funding Reconsideration

(vote required)

Caswell County 911 Communications

To Whom it May Concern:

The reason that I am writing you this letter, is because our county is in dire need of additional funding to establish an operational backup PSAP (Public Safety Answering Point). A PSAP is a call center that is responsible for answering emergency calls for police, fire and rescue services. With our current system we are able to provide the people of Caswell with this service possible unless our PSAP were to go down. In the case, the people of Caswell county would have no way of getting emergency personnel to their location. For this reason, this request is time sensitive do to requirements for its completion by the first of July in 2017.

Accordingly, if we were approved for the additional funding, the money would be used to cover any additional cost that could occur during this process. This funding could include additional equipment, installation of the equipment, replacement of out of date equipment, and etc. Also, this funding will cover any items of business that was possibly missed or omitted from the original plan that is in place. Our plan, is to order the CAD, recorder, radio equipment, and the telephone equipment as soon as we are approved for the funding. We expect that it will take about 3 months to receive the equipment and get it installed. Additional testing would on the equipment would require an additional 2-3 months once the equipment is installed. Also, we would need an additional 2 months for additional training of our staff. Our completion date is set for the first day in May of 2017. The reason we think that this will be complete by this date is due to Century Link already working on getting connections established between the two different sites. On the next page Figure 1: Backup PSAP Timeline will show the time line for the completion of this project. If you have any questions, please feel free to contact me at 336-514-0094 or by email hrudd@caswellcountync.gov.

Thank you,

Harvey Rudd

Harvey Rudd
Caswell County 911 Director

Caswell County 911 Communications

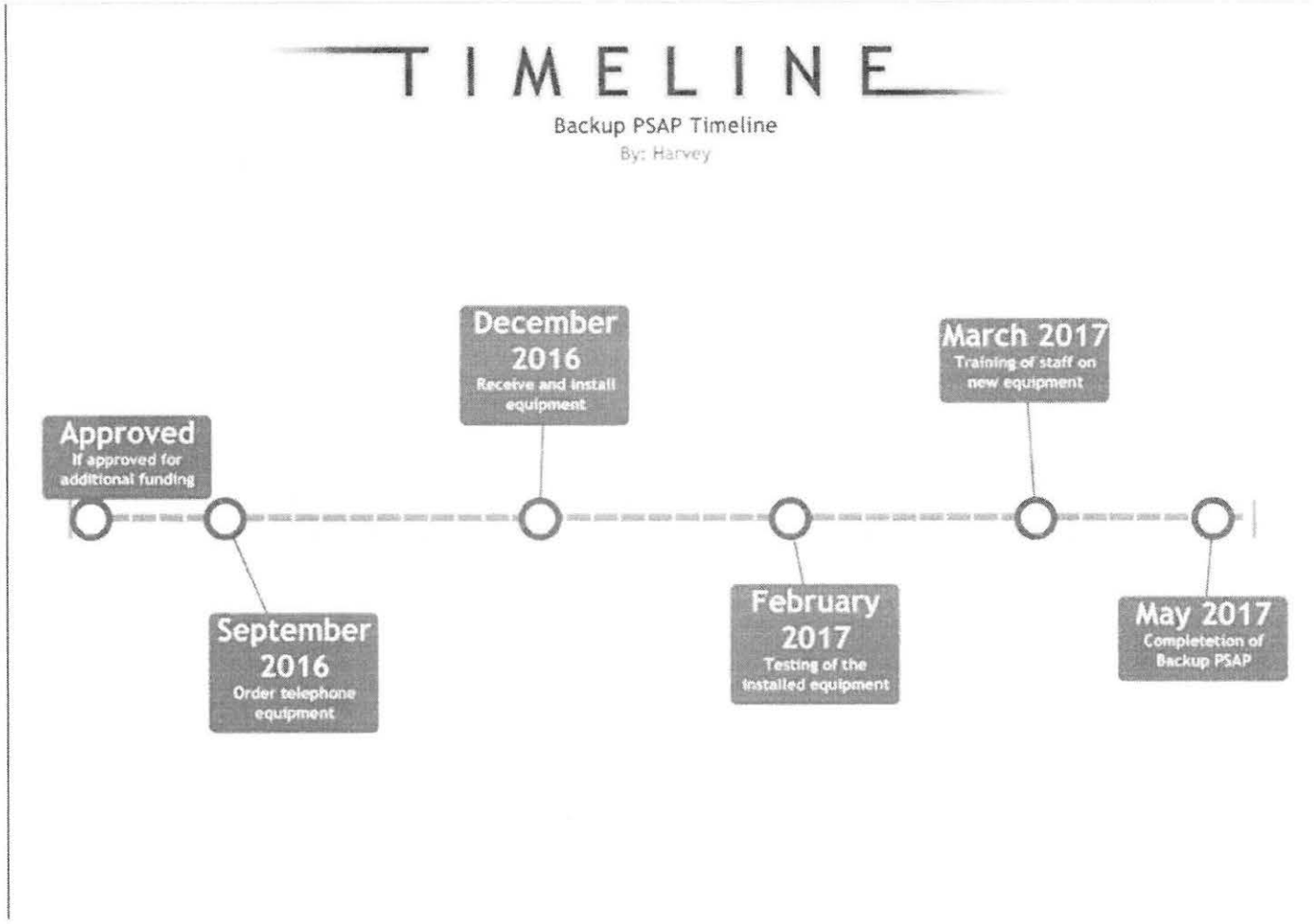


Figure 1: Backup PSAP Timeline

North Carolina 911 Board

CASWELL COUNTY 9-1-1 COMMUNICATIONS
HARVEY RUDD
PO BOX 248,314 NORTH AVE
YANCEYVILLE,N.C.
27379
hrudd@caswellcountync.gov

Instructions: All requests for review of PSAP Distribution amount must use this form with each request. Please do not change block descriptors, formulas or formatting. ******PLEASE SEE INSTRUCTIONS tab for further details****** ***All requests must be filed with the NC 911 Board no later than February 19, 2016.*** **Email this form and all supporting documentation to marsha.tapler@nc.gov. If you have questions regarding this form or filing a request, please call Marsha Tapler at 919-754-6344 or email at marsha.tapler@nc.gov.**

June 30, 2016 Emergency Telephone System Fund Balance:	**$228,407.37**

Expenditure	FY2016 **ACTUAL** Expenditures from Reconciled Report	FY2017 (2016-2017) Requested Increase Amount **ONE-TIME Capital Purchase Cost**	FY2017 (2016-2017) Requested Increase Amount **Recurring MONTHLY Cost**	FY2017 (2016-2017) Requested Increase Amount **Recurring ANNUAL Cost**
Phone Systems - Furniture				
Selective Rtng/ALI Prov 9-1-1 trk line charges	17,651.45			
Basic line charge only **One administrative line per call-taking position	2,134.05		1,800.00	
Interpretive Services				
Data Connections for the sole purpose of collecting call information for analysis. If connections is shared with non-eligible 911 device, only a percentage is eligible.				
MPLS-Fiber used for backup PSAPs connections				
Automatic Call Distribution System				
911 telephone equipment (CPE, etc.)	21,171.94	16,227.07		35,166.25
TDD/TTY				
Furniture: Cabinets, tables, desks which hold 911 equipment		2,500.00		
TOTAL	$40,957.44	$18,727.07	$1,800.00	$35,166.25

SOFTWARE	FY2016 **ACTUAL** Expenditures from Reconciled Report	FY2017 (2016-2017) Requested Increase Amount **ONE-TIME Capital Purchase Cost**	FY2017 (2016-2017) Requested Increase Amount **Recurring MONTHLY Cost**	FY2017 (2016-2017) Requested Increase Amount **Recurring ANNUAL Cost**
CAD (modules that are part of the call-taking process only)	26,804.00			

GIS (to create and display the base map showing street centerlines and address, address point layer)	2,783.00			
Message switch software **must meet requirements noted in Approved Use of Funds list.				
MCT Digital Voiceless Dispatch Licensing **Allowable for Dispatched Protocols Law, Fire & EMS.				
Voice Logging Recorder	6,800.00			
MIS for 9-1-1 phone system				
Time Synchronization				
Dispatch Protocols (Law, Fire, Medical)				
Quality Assurance for Protocols				
ALI Database software				
Software Licensing				
Radio console software. Some Radio console software will include many additional modules that are not a part of the 911 process and are not eligible.				
Console Audio Box (CAB) software				
Paging software (to send call from CAD to first responder pager or mobile phone)				
Computer Aided Dispatch (CAD) to Computer Aided Dispatch (CAD) interface software (sending CAD info to another PSAP for dispatch)				
Automated digital voice dispatching software				
Software **MAINTENANCE**				
TOTAL	$36,387.00	$0.00	$0.00	$0.00

HARDWARE	FY2016 **ACTUAL** Expenditures from Reconciled Report	FY2017 (2016-2017) Requested Increase Amount **ONE-TIME Capital Purchase Cost**	FY2017 (2016-2017) Requested Increase Amount **Recurring MONTHLY Cost**	FY2017 (2016-2017) Requested Increase Amount **Recurring ANNUAL Cost**
CAD server	9,740.59	49,105.00		
GIS server				
911 Phone server				
Voice logging server		2,045.00		
Monitors		471.28		
Computer Workstations	3,626.00	3,772.74		
Time Synchronization				
UPS		664.00		
Generator				
Call Detail Record Printer (automatically captures incoming 911 telephone call data)				
Radio Network Switching Equipment used exclusively for PSAP's Radio Dispatch Consoles (i.e.: CEB, IMC, NSS)				
Fax Modem (for rip & run)	59.35			
Printers (CAD, CDR, Reports, etc.)				
Radio Console Dispatch Workstations	55,565.00	128,656.00		
Radio Console Ethernet Switch				
Radio Console Access Router				
Back Up Storage Equipment for 911 Data Base Systems				
Mobile Message Switch				
Paging Interface With Computer Aided Dispatch (CAD) system				
Alpha / Numeric Pager Tone Generator				
Radio Consolette **as defined in Approved Use of Funds List				
Handheld GPS devices that are used strictly for 911 addressing **as defined in Approved Use of Funds List.				

Hosted Solutions:**Must be approved by 911 Staff prior to reporting.				
Hardware **MAINTENANCE**				
TOTAL	$68,990.94	$184,714.02	$0.00	$0.00

Training Expenditures Total	$5,230.80	$0.00	$0.00

IMPLEMENTAL FUNCTIONS

Database Provisioning for 911	60,054.55		
Addressing for 911	24,240.79		
TOTAL	$84,295.34	$0.00	$0.00

Total FY2015 Expenditures	$235,861.52

To be completed by 911 Board Staff:	
PROPOSED FY2017 FUNDING	$254,588.74
FY2017 Anticipated Capital Expenditures	$203,441.09
FY2017 Anticipated Monthly Recurring	$21,600.00
FY2017 Anticipated Annual Recurring	$35,166.25
Requested FY2017 Funding	$514,796.08
Maximum 20% Carry Forward	**$45,194.64**
Funds available for use from fund balance:	**$183,212.73**
Fund balance will be used as follows:	
Phone system	$183,212.73
Voice Logger	$25,000.00

	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	FY2011-FY2015	Yearly Amt.	Monthly Amt
TOTAL EXPENDITURES:	$185,084.32	$393,329.92	$156,046.30	$302,621.61	$235,861.53	$1,272,943.68	$254,588.74	$21,215.73
		Capital Purchases		Capital Purchases	Capital Purchase			

PROPOSED FY2017 FUNDING	**$254,588.74**
FY2017 Anticipated Capital Expenditures	$228,441.09
FY2017 Anticipated Monthly Recurring	$21,600.00
FY2017 Anticipated Annual Recurring	$35,166.25
Requested FY2017 Funding	$514,796.08
Approved Carry Forward	$25,000.00
Funds available for use from fund balance:	$203,407.37
Fund balance will be used as follows:	
Phone system	183212.73
Voice Logger	20194.64

Committee Recommendation FY2017 Funding	$514,796.08

CenturyLink

Customer Legal Name: Caswell County
Customer Billing Name: Caswell County
PO BOX 248
YANCEYVILLE
NC , 27379

Valid Until **October 14, 2016**

Quote-Build #: 14-011314-NIBS

Description of Work to be Performed: New 2-position Side B of a geo-diverse VESTA 9-1-1.

Equipment pricing shown is based upon direct sale accompanied by new Centurion Maintenance contract on same.

See Vendor Support Tab for Additional Pricing

Part Number	Description	Quantity	Unit Price	Extended Price
-	-	-	$ -	$ -
-	VESTA™ 9-1-1 Features	-	$ -	$ -
870899-0104R6.0	VESTA 9-1-1 R6.1 L/D/M	1	$ -	$ -
-	-	-	$ -	$ -
873099-03002	R4 CAD INTF KIT	1	$ 602.41	$ 602.41
873099-00602U	R4 CDR SVR LIC UPGD	1	$ -	$ -
873099-01102	R4 CDR PER SEAT LIC	2	$ 108.43	$ 216.86
-	VM Server Bundles	-	$ -	$ -
853031-MLSVRGD-2	V-ML MED SVR BNDL GEO	1	$ 16,571.08	$ 16,571.08
VSupport	V-SVR BASIC SPT 1YR	-	$ -	$ -
-	VESTA™ 9-1-1 Operations	-	$ -	$ -
BA-MGD-VSSL	GEO-DIV LIC SYS	1	$ 2,259.04	$ 2,259.04
PS-0SQ-VSSL	VS BSC PER SEAT LIC	2	$ 3,313.25	$ 6,626.50
VSupport	SPT VS BSC 1YR	-	$ -	$ -
873099-00502	R4 IRR LIC/DOC/MED	2	$ 1,198.80	$ 2,397.60
VSupport	R4 IRR SW SPT 1YR	-	$ -	$ -
-	VESTA™ Position Equipment	-	$ -	$ -
61000-819601SFF	WKST HP Z240 SFF	2	$ 1,480.72	$ 2,961.44
65000-47001	SFF TWR STAND	2	$ 50.60	$ 101.20
-	-	-	$ -	$ -
64007-50022	KEYPD 24K 25F USBCBL CP24	2	$ 149.40	$ 298.80
65000-00196	KIT CBL DVI 5M/USB 15FT	2	$ 73.49	$ 146.98
65000-00176	CBL USB EXT REPEAT 16FT	2	$ 43.37	$ 86.74
853004-00401	SAM EXT SPKR KIT	2	$ 202.41	$ 404.82
65000-00124	CBL PATCH 15FT	2	$ 16.87	$ 33.74
853030-00302	R4 SAM HDWR KIT	2	$ 1,990.36	$ 3,980.72
02800-20500	HDST 4W MOD ELEC MIC BLK	2	$ 38.55	$ 77.10
03044-20000	HDST CORD 12FT 4W MOD BLK	2	$ 3.61	$ 7.22
833401-00101G-15	CBL SAM JKBX 15FT	4	$ 43.37	$ 173.48
809800-35109	R4 IWS CFG	2	$ 240.96	$ 481.92
809800-35108	R4 IWS STG FEE	2	$ 361.45	$ 722.90
870890-07501	CPR/SYSPREP DVD IMAGE	1	$ -	$ -
-	Gateways	-	$ -	$ -
2213936-1-SR1	FXO GATEWAY 4-PORT	2	$ 961.45	$ 1,922.90
2213938-1-SR1	FXS GATEWAY 4-PORT	2	$ 868.67	$ 1,737.34
VSupport	SW SPT ANALOG GATEWAY 1YR	-	$ -	$ -
-	Network Equipment	-	$ -	$ -
03800-03030	FIREWALL- MODEM 60CM	1	$ 696.39	$ 696.39
VSupport	WARR FIREWALL F/W-M 1Y	-	$ -	$ -
809800-00201	VPN CFG SVCS	1	$ 240.96	$ 240.96
04000-29616	SWITCH 2960 + CBL 24-PORT	2	$ 1,156.63	$ 2,313.26
VSupport	WARR 2960 24P 2T 1YR 24X7	-	$ -	$ -
-	Peripherals	-	$ -	$ -
06500-55053	7FT EQUIPMENT RACK 19IN	1	$ 331.33	$ 331.33
63002-172805	MNTR NEC 17IN	1	$ 263.86	$ 263.86
04000-004B4	KVM 4-PORT SWITCH	1	$ 532.53	$ 532.53
04000-RMM19	BRKT 19IN RACK MTG/ARBIT	1	$ 38.55	$ 38.55
04000-00607	CBL KVM USB CONSOLE	1	$ 166.27	$ 166.27
04000-60611	CBL KVM USB 10FT	4	$ 100.00	$ 400.00
06500-00501	2-POST 5U RACK MNT KIT	1	$ 314.46	$ 314.46
04000-01010	CBL DB25M/DB25M 10FT	1	$ 9.64	$ 9.64
04000-01583	BLKBX TL158A-R4 DATACAST	1	$ 467.47	$ 467.47
-	Time Sync	-	$ -	$ -
GP 933-94	PSAP Command Center Package	1	$ 8,218.37	$ 8,218.37
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	Monitoring & Response	-	$ -	$ -
-	-	-	$ -	$ -
VSupport	M&R 3.0 SVR SRVC 1YR	-	$ -	$ -
871499-01211	M&R 3.0 WKST LIC	3	$ 85.54	$ 256.62
VSupport	M&R 3.0 WKST SRVC 1YR	-	$ -	$ -
871499-01210	M&R 3.0 IP DEVICES LIC	8	$ 85.54	$ 684.32
VSupport	M&R 3.0 IP DEV SRVC 1YR	-	$ -	$ -
871499-01212	M&R 3.0 LIC VM HOST	1	$ 85.54	$ 85.54
-	Managed Services Suite	-	$ -	$ -
809800-14152	MGD SERV DEV & IMPL	4	$ 90.36	$ 361.44
VSupport	VIRUS PROTECT 3.0 SVC 1YR	-	$ -	$ -
VSupport	PATCH MGMT 3.2 SVC 1YR	-	$ -	$ -
-	Field Engineering Services	-	$ -	$ -
809800-17101	FIELD ENG-PRIMARY	64	$ 120.48	$ 7,710.72
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -

Prices do not include charges for taxes, duties, tariffs, telecommunication services, or professional services such as Centurion Maintenance or Managed Network Services.

-	Server Extended Warranty	-	$ -	$ -
VSupport	WARR 24X7 ML350G9 3YR	-	$ -	$ -
-	Workstation Extended Warranty	-	$ -	$ -
VSupport	WARR 24X7 z220/230 WKST 3YR	-	$ -	$ -
VSupport	WARR 24X7 600G2/705G2 3YR	-	$ -	$ -
-	-	-	$ -	$ -
TBD	Misc Cables and equip	1	$ 1,204.82	$ 1,204.82
997-7039-00	22 in PXL2230MW led optical Touch	2	$ 277.11	$ 554.22
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -
-	-	-	$ -	$ -

Parts	$	66,661.56
Miscellaneous	$	-
Shipping	$	1,212.87
Parts Subtotal	$	67,874.43
Labor	$	10,428.48
Vendor Support (See Vsupport Tab for Details)	$	14,120.00
TOTAL PRICE	**$**	**92,422.91**

All Products listed on this Quote are governed by the Standard Terms and Conditions for Communications Services and the Equipment Sales Product Annex, both posted to http://about.centurylink.com/legal/rates_conditions.html

Prices do not include charges for taxes, duties, tariffs, telecommunication services,
or professional services such as Centurion Maintenance or Managed Network Services.

JCW Pricing Tool 6.26

Quote Number# 14-011314
Account Manager: Robert Robinson

Customer Legal Name:	**Caswell County**
Customer Billing Name:	**Caswell County**
Customer Address:	**PO BOX 248 , YANCEYVILLE, NC 27379**
Date Prepared:	**August 15, 2016**
Quote Expires:	**October 14, 2016**
Quote Number:	**14-011314**

Centurion Maintenance

Coverage:	**Extended**
Contract Term:	**12**

QTY	Item	Total Non-Recurring Price	Annual Price - Year 1	Annual Price - Year 2+	Total Annual Price - Y1	Total Annual Price - Y2+	Total Term Price
	CPE - (Includes Shipping and Misc costs)	$ 105,814.60			$ 5,794.20	$ -	$ 5,794.20
	Labor	$ 23,174.40					
	On-Site Tech		$ -	$ -			
	Vendor Support	$ 21,046.25	$ -	$ -			
	Total Prices	**$ 150,035.25**	**$ -**	**$ -**	**$ 5,794.20**	**$ -**	**$ 5,794.20**

Prices shown on this page represent recurring and nonrecurring charges for items as described. These prices do not include recurring or nonrecurring charges for taxes, duties, tariffs, or telecommunication services.

Hey Robert,

I couldn't do much better, but I did on some..

Thanks,
Dom

Pricing Proposal

Quotation #:	12225765
Description:	Caswell E-911
Created On:	Sep-19-2016
Valid Until:	Sep-30-2016

County of Caswell NC

Robert Webb
Caswell E-911
314 North Ave.
Yanceyville, NC 27379
United States
Phone: (336) 694-5265
Fax:
Email: rwebb@caswellcountync.gov

Inside Account Excecutive

Dominic Denaro
33 Knightsbridge Rd
Piscataway, NJ 08854
Phone: 732-564-8565
Fax: 732-564-8492
Email: Dominic_Denaro@shi.com

All Prices are in US Dollar(USD)

	Product	Qty	Your Price	Total
1	HP Workstation Z240 - SFF - 1 x Core i7 6700 / 3.4 GHz - RAM 8 GB - HDD 1 TB - DVD SuperMulti - HD Graphics 530 - GigE - Win 10 Pro 64-bit / Win 7 Pro 64-bit downgrade - pre-installed: Win 7 Pro 64-bit - vPro - Monitor : none - Smart Buy HP, Inc. - Part#: L9K23UT#ABA	2	$834.71	$1,669.42
2	NVIDIA NVS 310 - Graphics card - Quadro NVS 310 - 1 GB DDR3 - PCIe 2.0 x16 low profile - 2 x DisplayPort - for EliteDesk 800 G2; EliteOne 800 G2; ProDesk 400 G3, 490 G3; Workstation Z440, Z640, Z840 HP, Inc. - Part#: M6V51AT	2	$100.50	$201.00
3	Electronic HP Care Pack 4-Hour 24x7 Same Day Hardware Support - extended service agreement - 3 years - on-site HP, Inc. - Part#: U1G21E	2	$126.47	$252.94
4	ViewSonic VA2249S - LED monitor - 22" ViewSonic - Part#: VA2249S	4	$99.82	$399.28
5	Tripp Lite 6in Displayport to DVI Adapter Video Converter DP-M to DVI-I-F 6" - Display adapter - DisplayPort (M) to DVI-I (F) - 15 cm - molded Tripp Lite - Part#: P134-000	4	$9.85	$39.40
6	Tripp Lite 10ft DVI Single Link Digital TMDS Monitor Cable DVI-D M/M 10' - DVI cable - DVI-D (M) to DVI-D (M) - 3 m - molded Tripp Lite - Part#: P561-010	4	$8.15	$32.60
7	Tripp Lite Isobar Surge Protector Metal 6 Outlet 6' Cord 3330 Joules - Surge protector - AC 120 V - output connectors: 6 - Canada, United States - white Tripp Lite - Part#: ISOBAR6ULTRA	2	$50.26	$100.52
8	Tripp Lite Rack Enclosure Cabinet Cantilever Fixed Shelf 40lb Capacity 1URM - Rack shelf (cantilever) - black - 1U Tripp Lite - Part#: SRSHELF2P1U	1	$43.08	$43.08

9	Tripp Lite PDU Basic 120V 1.8kW 15A 5-15R 13 Outlet 5-15P Horizontal 1URM - Horizontal rackmount - power distribution unit (rack-mountable) - 15 A - AC 120 V - 1.8 kW - input: NEMA 5-15 - output connectors: 13 (NEMA 5-15) - 1U - 19" - black Tripp Lite - Part#: PDU1215	1	$63.70	$63.70
10	Eaton 5P 1000 RACKMOUNT - UPS (rack-mountable) - AC 120 V - 770 Watt - 1000 VA - RS-232, USB - output connectors: 5 - 1U Eaton Corporation - Part#: 5P1000R	1	$456.70	$456.70
11	Fortinet FortiGate 90D - Security appliance - with 3 years FortiCare 24X7 Comprehensive Support + 3 years FortiGuard - 10Mb LAN, 100Mb LAN, GigE Fortinet - Part#: FG-90D-BDL-950-36	1	$1,649.38	$1,649.38
			Total	$4,908.02

Additional Comments

Retrieve your quote:

https://www.shi.com/Quotes/QuoteInfo.aspx

The Products offered under this proposal are subject to the SHI Return Policy, unless there is an existing agreement between SHI and the Customer.

SOUTHERN SOFTWARE, INC.
an employee-owned company

Agency: **Caswell County 911, NC**

Contact: **Harvey Rudd**

Date: **6/6/2016**

HARDWARE AND SOFTWARE		Qty	
SERVER	**PowerEdge R320, Intel® Xeon® E-24XX v2 Processors**	2	$35,110.00
Operating System	Windows Server® 2012R2,Standard Ed,Factory Inst,No MED,2SKT,2VM,NO CAL		
Client Access Licenses	(2) 5-pack of Windows® Server 2012 User CALs (Standard or Datacenter)		
Client Access Licenses	Microsoft®SQL Server™2014 Standard,5 USER CALs Only, No Media		
Database Software	Microsoft®SQL Server™2014 STD, 5USER CALs,NFI,w 2012 DGRD Media		
Chassis Configuration	Chassis with up to 4, 3.5" Cabled Hard Drives and Embedded SATA		
Processor	Intel® Xeon® E3-1270 v5 3.6GHz, 8M cache, 4C/8T, turbo (80W)		
PCIe Riser	PCIe Riser,1FH,1LP w/Fan,R330		
Memory Configuration Type	Performance Optimized		
Memory Capacity	(4) 16GB UDIMM, 2133MT/s, ECC		
RAID Configuration	RAID 5, S130, Cabled Chassis		
RAID Controller	S130, Software RAID (for Microsoft OS Only)		
Hard Drives	(3) 1TB 7.2K RPM SATA 6Gbps 3.5in Cabled Hard Drive		
Additional Network Cards	On-Board LOM 1GBE Dual Port (BCM5720 GbE LOM)		
Embedded Systems Management	iDRAC8 Express, integrated Dell Remote Access Controller, Express		
Internal Optical Drive	DVD ROM, SATA, Internal		
Rack Rails	ReadyRails™ Sliding Rails Without Cable Management Arm		
Power Supply	Dual, Hot-plug, Redundant Power Supply, 350W		
Power Cords	(2) NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m), Power Cord, North America		
OS Media Kits	Windows Server® 2012R2,STD Ed,Media Kit w/Factory Inst STD DGRD Images		
Hardware Support Services	3 Years ProSupport Plus and Mission Critical 4HR On-Site Service		
Server Accessories	Keyboard and Optical Mouse, USB, Black, English		
KVM	TrippLite NetDirector Console KVM Switch with 17-inch LCD Screen/Keyboard/Touchpad		
UPS	19-inch SMART 1500RMXL2Ua Rack-Mountable UPS System		
Rack	APC NetShelter SV - Rack - black - 42U - 19-inch		
Antivirus	Symantec Endpoint for 11 Users		
Backup Software	Nova Backup Business Essentials V. 16		
Hard Drives	Qty 3 (3) - 500 GB/TB Hard Drive		
Removable Storage	PowerVault RD1000		
Digiport SP1	Digiport SP1		
Switch	24 Port Rack Mounted Switch		
Paging / Wireless Messaging - Upgrade to Version 7 from Version 5		1	$250.00
Wireless Messaging for CAD (with 5 additional Paging Connectors) *For Backup Center*		1	$1,000.00
CAD with MDS for EOC		2	FREE
*** Neverfail for Physical Server (1 Pair) (Note: first year support included; 2nd year payable to Neverfail - Approx. $1,000)**		1	$4,995.00
Installation (Southern Software Technician onsite for Hardware and Neverfail		1	$7,750.00

TOTAL INVESTMENT (STATE TAX AND SHIPPING NOT INCLUDED) **$49,105.00**

50% due upon signing proposal; 50% due upon completion of installation.

CUSTOMER'S SIGNATURE_____ **DATE**_____

Please sign this document and return it to us by fax or mail. When the document is signed and returned to Southern Software, we will begin processing your order.

Proposal of hardware is valid for (30) days from date of proposal..

300

SOUTHERN SOFTWARE, INC.
an employee-owned company

Statement of Work for Caswell County NC 911 Backup.

Southern Software is providing hardware and service in support of Caswell County 911. This will insure high availability and geo diversity. Dependencies include network connectivity supplied by appropriate vendor. Moving existing CAD, Mapping and Mobile Data systems and their associated databases to the new server and to the backup server.

- Order items as listed in approved quote.
- Stage and test components ahead of installation.
- Deliver items to customer site.
- Install primary server at Caswell County 911.
- Move CAD and Map data from existing server.
- Install CAD and Map data to new primary server.
- Configure new primary server to function with existing CAD and Mapping clients.
- Install and configure Neverfail.
- Install Backup server at backup location.
- Install and configure Neverfail.
- Establish connection between Primary and backup server.
- Replicate Primary to backup server.
- Install and test Backup CAD and Map clients at backup site.
- Insure uninterrupted operation in the event of failure. Both servers contain the same, previously approved software. (No NCIC, AVL)

Carolina Recording Systems, LLC
PO Box 11311
Charlotte, NC 28220
CRS

QUOTE

FOR: Eventide NexLog Communications Recording System

Caswell County 911
314 North Avenue
Yanceyville, NC 27379

Harvey Rudd
(336) 694-9311
hrudd@caswellcountync.gov

Quote Prepared By

Derrick Duggins
derrick.duggins@crsnc.com
(919) 302-2297
Fax: (888) 776-0201
Help Desk: (888) 661-0202

Est. Delivery	Terms	Shiping Terms	Quote Valid Through	Quote Number
4 to 6 Weeks	Net 30	FOB - Delivery, Prepaid and Add	10/31/2016	CAS0616

Line	Qty	Model	Description	Unit Price	Ext. Price
1	1	NexLog740	**NexLog 740 - Backup Center** This Eventide NexLog 740 recording server will be configured to record up to 16 Analog Channels and is expandable for future recording needs. The 3U rack-mount recording chassis contains 1TB of RAID storage and a Linux Operating System. Recording Solution Includes: Web-Browser Playback — Instant Recall Incident Recreation — Redaction Front Panel Display — Identity Protection Contact Closure — NENA ANI/ALI Central Archive — TTY/SMS-to-911	$ 24,420.00	$ 24,420.00
2			**Equipment Price**		**$ 24,420.00**
3	1	XXXX	Professional Services: Includes Pre-installation site survey, installation, configuration, testing, and unlimited training.	$ 2,500.00	$ 2,500.00
4	1	Man S&H	Manufacturer Shipping	$ 125.00	$ 125.00
5			**Solution Total**		**$ 27,045.00**

Installation Notes:
Customer's radio, telephone, and CAD vendors should provide the proper inputs, identified and terminated within 6 feet of the recorder's physical location. Customer is responsible for insuring the necessary installation and integration work is completed by its other vendors.

Warranty Notes:
System is covered under existing service agreement with 24/7 on-site response.

Caswell County 911Eventide Recording System				
Part Number	**Description**	**Quantity**	**Price (Each)**	**Price (Extended)**
NexLog 740 - Backup Center				
Total($24,420.00)				
NexLog740	NexLog 740 base system: 3U rack-mount, Intel Core2 Quad CPU, Dual NIC, Embedded Linux, NexLog base software, web-based configuration manager, and 1st year warranty.	1	$7,995.00	$7,995.00
105301	Integrated 7" Color LCD Touch Screen Display for NexLog 740	1	$1,295.00	$1,295.00
105311	Upgrade to 2 x 1TB Hot Swap h/w-RAID1 = 1TB storage	1	$1,600.00	$1,600.00
105321	Equip with 1 Multi-Drive for DVD-RAM (standard)	1	$0.00	$0.00
108233-000	Dual Hot-Swap power supplies, 120/240 VAC (standard-no charge)	1	$0.00	$0.00
324430	Rack Mount Slides - 4 Post, 3U (for NexLog 740)	1	$360.00	$360.00
105284-016	16-Channel Analog Card, 16 Ch. Licenses	1	$4,000.00	$4,000.00
109033-003	Quick Install Kit (9 ft. Cable + "66" Block):	1	$220.00	$220.00
108121	24 port GPIO PCI Card/Cable Kit (non-isolated; 24 inputs)	1	$795.00	$795.00
209029	911 NENA ANI/ALI CAD Spill Integration - USA/Canada only	1	$3,495.00	$3,495.00
271101	45 Baud Analog TTY Decoder for TDD/SMS-to-911 (USA/Canada)	1	$1,995.00	$1,995.00
271014	Central Archive License (for archive to another NexLog)	1	$1,670.00	$1,670.00
271083	8 pack MediaWorks PLUS (web) concurrent license	1	$995.00	$995.00
Shipping and Handling				
Man S&H	Manufacturer Shipping and Handling	1	$125.00	$125.00
Professional Services				
XXXX	Professional Services: Includes Pre-installation site survey, installation, configuration, testing, and unlimited training.	1	$2,500.00	$2,500.00
			Item Sub-Total	**$27,045.00**

COMMONWEALTH RADIO SERVICES, INC.

P. O. BOX 129 BLAIRS, VA 24527
PHONE (800) 777-0445 FAX (434) 836-9151

June 15, 2016

Caswell County
Attention: Mr. Harvey Rudd
Yanceyville, NC 27379

RE: Proposal for Communications Equipment

Dear Harvey:

Commonwealth Radio Services, Inc. is pleased to have the opportunity to provide Caswell County with quality communications equipment and services. This document shall serve as a proposal for equipment for your backup PSAP. We have taken great care to propose a solution that will meet your needs and provide unsurpassed value.

To best meet the functional and operational specifications of this project, our solution includes a combination of hardware, software, and services. Specifically, this solution provides:

Fixed equipment including the following:

- 2 position MCC 5500
- 8 Analog channel licenses
- 8 SB9600 channel licenses
- CSDM and ADM workstations
- 21" LCD monitors
- UPS system-11 KVa capacity
- Spares Package
- Racking/Interconnect Equipment
- Warranty wrap for year one
- Extended warranty for years 2 and 3 on the console only
- Control station combiner system for UHF control stations and 70-0/800 MHz control stations
- Antenna systems for all control stations
- System integration and installation
- On site staging and programming
- Misc. Hardware (surge suppression, grounding, racks, etc.)
- Console programming and optimization
- 8 APX 7500 Consolettes with hardware
- All miscellaneous hardware required
- Labor to install all items

Please note that depending upon the distribution strategy employed by Motorola Solutions at the time of purchase the billing for the items proposed here-in may come from Motorola Solutions or Commonwealth Radio Services or a combination of the two. In any event the total price shall remain the same.

This proposal consists of this cover letter and the enclosed sections, exhibits, and documents. This proposal shall remain valid for a period of sixty (60) days from the date of this cover letter. Caswell County may accept the proposal by delivering the properly executed Purchase Orders and associated documentation signed by Caswell County. Alternatively, Commonwealth Radio Services, Inc. would be pleased to address any concerns Caswell County may have regarding the proposal. Any questions can be directed to:

Ron Wells

(800) 777-0445

Commonwealth Radio Services, Inc. appreciates your interest in our company, products, and services. We look forward to continuing our relationship and implementing this project with Caswell County.

Sincerely,

COMMONWEALTH RADIO SERVICES, INC.

Ron Wells

MCC 5500 CONSOLE

Motorola is proposing a solution for Caswell County that consists of MCC 5500 dispatch consoles. A description of the console features and benefits, hardware components, software components, system architecture, expansion capabilities, and reliability are provided below.

Project Overview

Caswell County has envisioned a 911 center that has a fully functional four (4) position console. Included in this offering are items such as a backup UPS, VIPER radio control stations, conventional radio control stations, conventional radio base stations, and associated equipment. Motorola has worked closely with our MR, Commonwealth Radio Services Inc., (and its subcontractors)to provide you with a solution that is both cost effective and functional.

Motorola has taken great care to propose an offering that will provide Caswell County with the solution that meets their needs.

The MCC 5500 Dispatch Console

The Motorola MCC 5500 Dispatch provides fully functioned dispatch capabilities for conventional radio systems. It is a part of Motorola's extensive portfolio of integrated communications and information solutions and is intended to be the heart of all communications in a small to medium sized, conventional radio system.

As the next generation of dispatch console products, the MCC 5500 allows a large number of central dispatchers to communicate more effectively with field personnel over numerous channels in a wide-area system. It combines maximum functionality with flexibility and reliability.

Features and Benefits

The MCC 5500 has been developed to provide dependable, cost-effective dispatch control solutions to meet the needs of radio systems. Important considerations were to keep the consoles multifunctional, easy to use, and provide user-friendly graphical interfaces for a complete overview of dispatching activity. With a wide range of features and corresponding benefits, the MCC 5500 is an essential part of any dispatch operation.

Figure 1: MCC 5500 Dispatch Position

- **Ease of Use -** The Graphical User Interface (GUI), operating under the Windows XP environment, features familiar application standards. Icons, menus and screen layouts are easy to understand and learn, making key information and critical functions easy to find. For example:
  - Channels are displayed on-screen in “folders” for prioritization.
  - Dispatchers can see information about callers, call type and call status instantly in the activity log. The activity log provides folders to allow the calls to be filtered into ‘All’, ‘Select Channel’, ‘Unselect Channel’ and ‘Emergency’. Callers are identified by real names instead of numeric IDs.
  - Dropdown menus and a graphical toolbar offer the dispatcher a wide range of additional capabilities. Radio channels/talkgroups, telephone lines, and auxiliary inputs/output items can all be displayed on one screen.
  - A keyboard is not required for day-to-day operation of the system as the MCC 5500 can be used with a mouse, trackball or touchscreen.
- **Upgradeability -** The cost effective MCC 5500 Dispatch Console can work side by side with existing console systems and communications applications such as Stat-Alert and ASTRO. MCC 5500 features are licensed by operator position or channel, making software upgrades to add the latest features easy and cost effective.
- **Enhanced Hardware and Software Functionality -** The use of industry standard PC equipment allows the integration of MCC 5500 into existing systems/networks and provides the true multi-tasking capabilities of Windows XP. In addition, the Console Electronics Shelf (CES) gives dispatchers instant, real-time access to the communications system resources and information.
- **Advanced Management Tools -** The management tools included with the MCC 5500 simplify the system configuration and provide diagnostics, reports and statistical data about the system.
- **Compact Form Factor -** The Multi-tasking Windows XP environment eliminates the need for more than one CRT at a dispatcher's workstation. This saves valuable space and allows the dispatcher to perform more efficiently. Also, the use of a Console Audio Box (CAB) provides the interface for all the audio accessories and can be placed under the monitor, or because of its small size, can be hidden away under the furniture.

Hardware Components

The function of the MCC 5500 is to provide centralized communications to multiple base stations, repeaters, and other audio equipment with the ability to integrate two-way radio communication with other dispatch requirements. These requirements may include handling 911 calls, paging, logging, and control of external functions via I/O circuits. Each MCC 5500 dispatch position includes:

- 21” monitor
- Personal Computer
- (keyboard is optional)
- Mouse or trackball
- Console Audio Box (CAB)
- Two speakers
- (Select and Unselect speakers required as a minimum)
- MCC Series Gooseneck Microphone or Standard Gooseneck Microphone
- Headset Jack – can support 2 (required for headset operation)
- Dual-pedal footswitch

EQUIPMENT LIST CASWELL COUNTY WITH PRICING

ITEMS HIGHLIGHTED IN YELLOW ARE NOT ELIGIBLE

ITEM	APC	QTY	MODEL	DESCRIPTION		UNIT COST	EXTENDED COST
1	-	509	2	TRN7343	SEVEN AND A HALF FOOT RACK	600.00	1,200.00
2	-	322	2	L3358	CONSOLE ELECTRONIC SHELF (CES) II	9,500.00	19,000.00
2	a	150	2	CA00957AA	ENH: (2) YR EXT SVC PL A/ADV RPLCM	900.00	1,800.00
3	-	322	1	L3468	MCC SERIES I/O SHELF W/ CONTROLLER	1,100.00	1,100.00
4	-	322	2	L3550	DAP II FOR ANALOG,SB9600,ASTRO INTE	2,300.00	4,600.00
4	a	322	4	TT04525AA	ADD: 2 ASTRO LICENSES	2,500.00	10,000.00
5	-	322	2	DDN6918	T3 CABLE 2 FEET	180.00	180.00
6	-	322	2	L3359	MCC 5500 OPERATOR POSITION (CAB) II	8,433.00	16,866.00
6	a	322	2	TT04218AA	Rack Mt. Hardware	95.00	190.00
7		443	4	B1913	MCC SERIES HEADSET JACK	200.00	800.00
8	-	443	2	B1914	MCC SERIES DESKTOP GOOSENECK MICROP	250.00	500.00
9	-	228	2	BLN6732	FOOT, SWITCH TRADITIONAL	400.00	800.00
10	-	443	4	B1912	MCC SERIES DESKTOP SPEAKER	450.00	1,800.00
11	-	207	4	DSVPR3MCC	PROTECTION MODULE FOR MCC 5500/5700	410.00	1,640.00
12	-	322	2	DDN6918	Op. Cable 50'	175.00	350.00
13	-	322	1	DDN8349	MCC5500 SPARES PACKAGE	14,483.00	14,483.00
14	-	124	1	6881005Y60	MCC 5500 CONSOLE OPERATOR GUIDE		-
15	-	124	1	6881005Y65	MCC 5500 CONSOLE INSTALL & SVC MAN		-
16	-	124	1	6881005Y70	MCC 5500 CON SYS DATABASE MGR MAN		-
17	-	708	1	TT2071	CERTIFIED MCC 5500 ALIAS DATABASE S	3,000.00	3,000.00

18	-	708	3	TT2285	CERTIFIED MCC5500 WORKSTATION	2,950.00	8,850.00
19	-	322	1	DDN6916	CSDM PROGRAM	2,000.00	2,000.00
20	-	322	1	DDN6924	CSDM COMPUTER CABLE (DB09) 25 FEET	90.00	90.00
21	-	708	1	CDN6673	MISC INSTALLATION HARDWARE	1,159.00	1,159.00
22	-	276	6	L30SSS9PW1 N	APX Consolette UHF	7,117.00	42,702.00
22	a	276	6	G241	Analog		
22	b	276	6	G48	Conv.		
22	c	276	6	G80	W7		
22	d	276	6	L146	Tone Control		
22	e	374	6	L73	Delete Mic		
22	f	185	6	G241	2 Yr. RSA		
23	-	276	2	L30URS9PW1 N	10-35W 762-870MHZAPX CONSOLET	7,633.00	15,266.00
23	a	276	2	G806	ENH: IMBE ASTRO DIGITAL CAI OP		
23	b	500	2	G51	ENH: 3600 SMARTZONE OPERATION		
23	c	500	2	G361	ENH: ASTRO PROJECT 25 TRUNKING SOFT		
23	d	276	2	L146	ADD: TONE REMOTE CONTROL XTL5000		
23	e	276	2	G80	ADD: W7 HW SETUP CONSOLETTE		
23	f	185	2	G241	2 Yr. RSA		
24	-	374	8	TRN7466	MOUNTING BRACKET EIA 19 INCH	200.00	1,600.00
25	-	185	1	UPS	11 kvA	13,990.00	13,990.00
26	-	185	2	CSCOMB	CONTROL STATION COMBINER	11,810.00	22,620.00
					(1 UHF, 1 700/800 MHz W/ ANT. SYSTEMS)		
				EQUIPMENT TOTAL			187,586.00

Software Components

The MCC 5500 consists of several software components – operating system, user interface, and the Console System Database Manager (CSDM).

Operating System

The MCC 5500 Dispatch Console uses the Windows XP® operating system. Therefore, its operating environment features the familiar standards used by other Windows programs worldwide.

User Interface

Screen layout, menus and icons are easy to understand and are quickly recognizable by users. Menus and icons are accessed via a simple point-and-click response by using a mouse, trackball, or optional touch screen - a keyboard is not required for day-to-day operations.

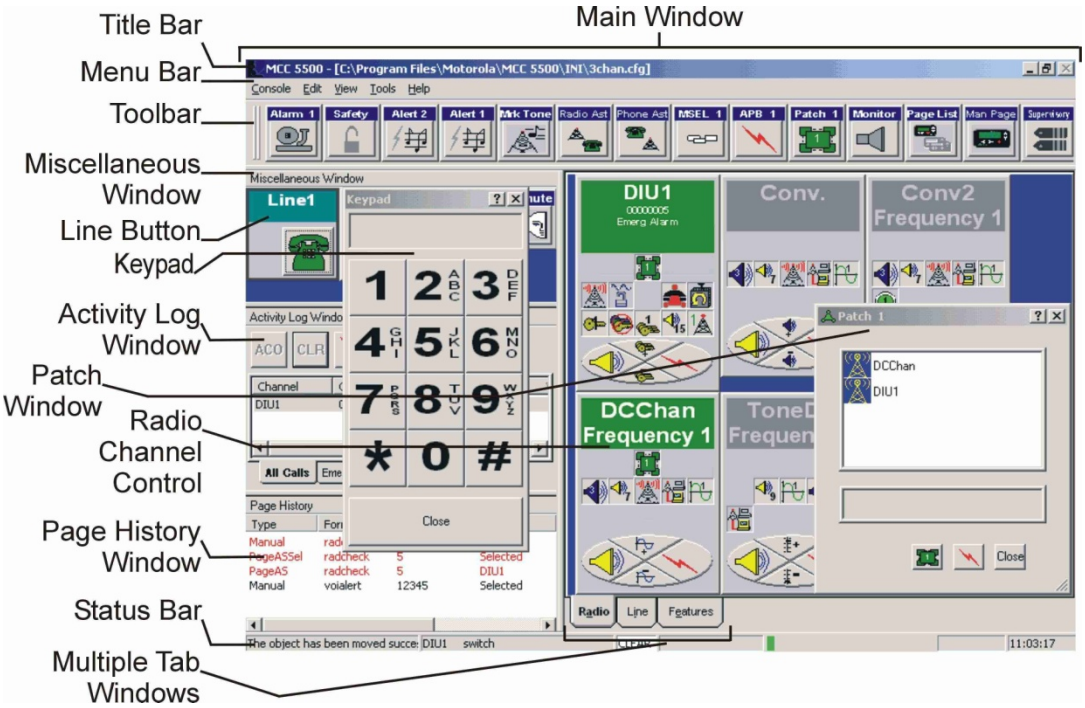


Figure 2: MCC 5500's Intuitive Screen Layout

Each dispatcher can customize (configure) their user interface. Configurations are created by a supervisor and saved in the system, ensuring that a dispatcher can access their configuration from any position connected to the system. Emergency plans, shift changes and other special situations can be quickly downloaded. Configurations can be tied to specific login accounts to ensure proper usage.

Through this user interface, dispatchers can request many of the functions provided by the system such as:

- Radio Channel Control
- Emergency Alarm Response
- Unit ID
- Base Intercom
- Volume
- Muting
- Alert
- Intercom Call
- Telephone Calls

- Flash
- Patching
- Signaling
- Transmit Queue
- Site Select
- Supervisory
- Voice Secure
- Alarms
- Multiple Selection
- Call Director
- Page List
- Squelch Control
- Supervisory
- Repeater Disable
- Comparator Control
- Wildcard
- All Points Bulletin
- Paging
- Page History
- Channel Marker
- Take Over
- Safety
- Gen I/O

The MCC 5500 also provides buttons, controls, and indicators that correspond to the functions above. Since the MCC 5500 recognizes two levels of users – operator and supervisor – some of the buttons, controls, and indicators may be restricted to only to supervisors.

Due to the user-friendly design, dispatchers will learn to operate the console faster and be able to manage information more productively. MCC 5500 completes many dispatching tasks more quickly and easily than previous console models.

Console System Database Manager (CSDM)

The CSDM is the core of the MCC 5500 and a requirement for every customer site as it is a powerful configuration and maintenance tool. This database manager is located on a separate PC that runs the Windows operating system. The CSDM has many functions within the MCC 5500 system such as:

- Initial configuration as well as modification of the system configuration file
- Saving the configuration file to a disk and uploading it to the system
- Running built-in tests for maintenance and reliability
- Logging system errors
- Assisting with the upgrade the system to a new release of software
- Gathering system statistics

User Interface

The CSDM software uses an intuitive menu-driven interface as shown in Figure 3 to allow users to access the customer configuration database, to configure a MCC 5500 system to meet numerous requirements, to upgrade software, to run maintenance and diagnostic procedures, and to provide extensive on-line help.

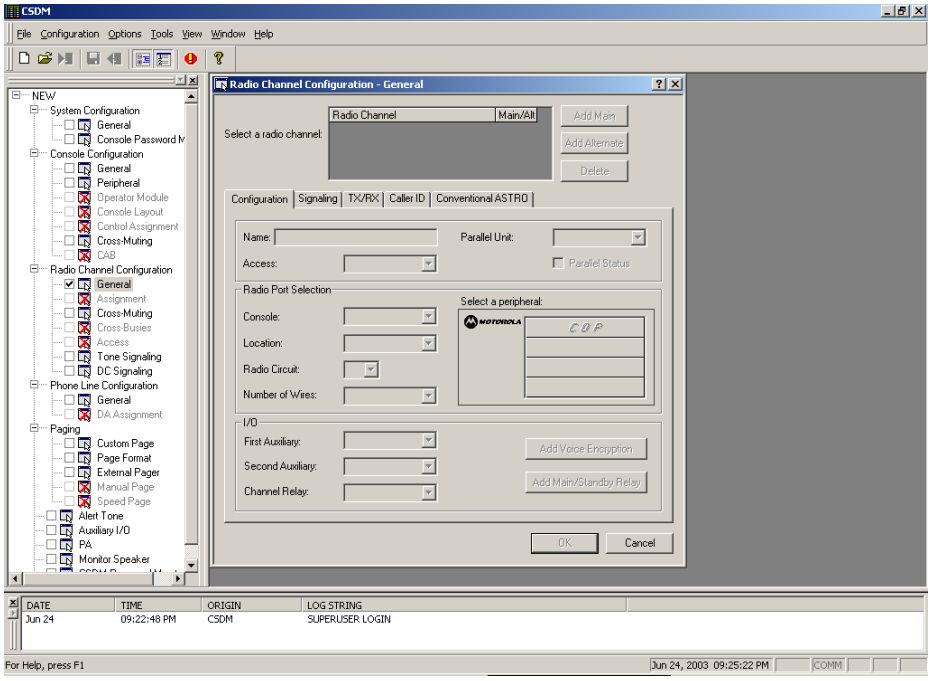


Figure 3: CSDM User Interface

Software Upgrades

The MCC 5500 Dispatch Console supports a software download feature, simplifying the process of upgrading to the latest software release. The feature is accessed via the CSDM. The new software is loaded onto the CSDM directly and when convenient, it is downloaded to the CES. Following the upgrade, the system will be reset, logging off all dispatchers.

Database Changes

If a new database is uploaded from the CSDM to the system, the system will reset. Following a reset, dispatcher positions will come back on line, with local channel access, one at a time. A typical system will be fully operational within 3 minutes.

Statistics Package

The statistical package included with the CSDM is designed to collect information about system operation for analysis and optimization. The Statistics Package continually logs system events, such as the average duration of a call, the number of times a channel is keyed, etc.

Two periods are monitored simultaneously, one is a fixed duration period that can be set to 1 minute, 15 minutes, 1 hour, 1 day, 1 week, 1 month, 3 months, 6 months or 1 year. At the end of the period the statistics are stored to disk and the next collection period starts. This period can be reset if required. The second period does not have defined start and stop times, but is controlled manually, i.e. activated by a start button and deactivated with a stop button. This allows short-term statistics to be collected without disturbing the long-term collection. The following statistics can be collected:

- Incoming Radio Calls – incoming call stats per channel
- Outgoing Radio Calls - outgoing call stats per channel
- Incoming Telephone Call - incoming call stats per line
- Outgoing Telephone Calls - outgoing call stats per line
- Telephone Calls answering – answering stats per line

- Dispatcher Incoming Calls – incoming call stats per dispatcher
- Dispatcher Outgoing Calls - outgoing call stats per dispatcher
- Dispatcher Telephone Calls – Telephone call stats per Dispatcher
- Dispatcher Call Director Calls – Call Director stats per Dispatcher
- Dispatcher Busy – Dispatcher usage stats

System Architecture

The MCC 5500 is a digital, modular radio dispatch console with an easy-to-use graphical user interface (GUI) running under Windows. Each console system is designed to interface to up to 128 radio channels and support up to 36 Dispatcher positions. The maximum number of telephone lines supported is 72 (2 per shelf).

An MCC 5500 system uses distributed ring architecture for the central switch to form an intelligent self-contained communications system. Each shelf within the switch has independent processing capabilities and interfaces directly to selected system resources. The total number of shared resources - any resource that is accessed by an operator other than the one connected to the shelf the resource is located in - cannot exceed 164. Shared resources are defined as radio channels, telephone lines, mic audio (operator positions), and enhanced call director.

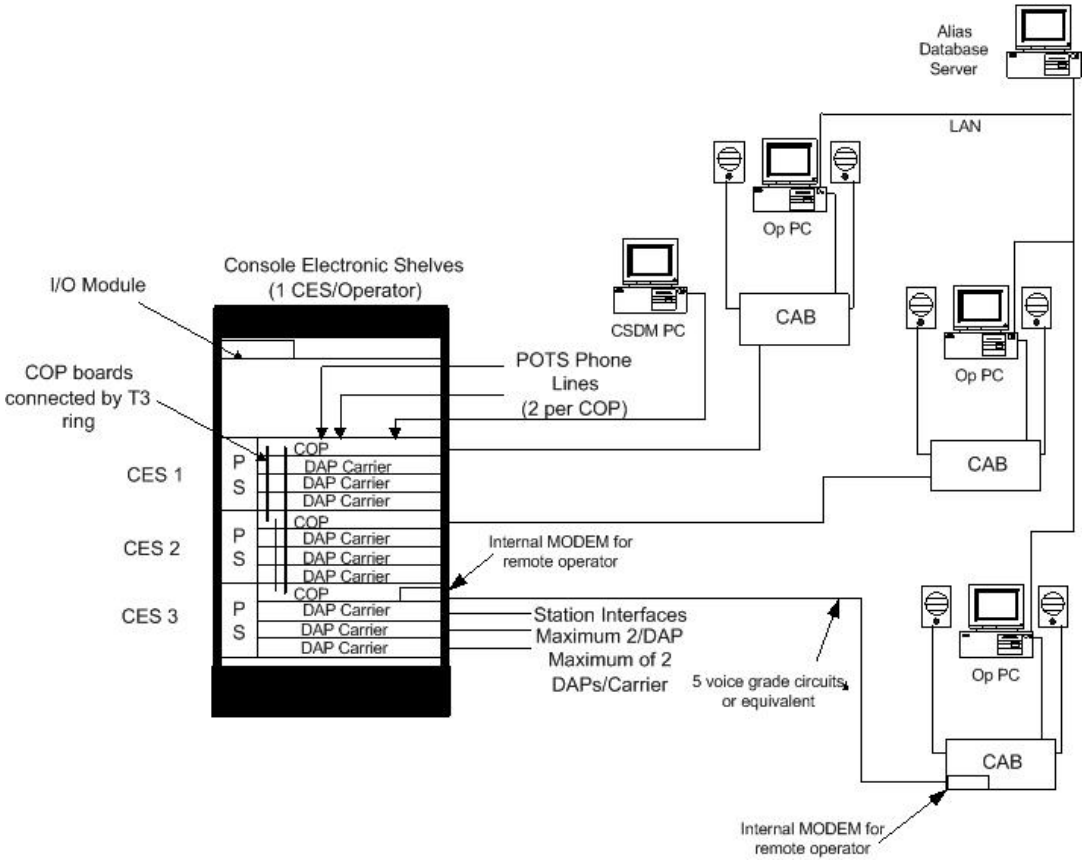


Figure 4: Block Diagram for a typical MCC 5500 Architecture

The solution proposed by Motorola consists of several major components—Console Electronics Shelf (CES), MCC 5500 positions, Console Audio Box (CAB), Console System Database Manager (CSDM), Alias Database Server, application software, and network.

- **Console Electronics Shelf (CES) -** In an emergency situation, you need immediate access to critical information. With the MCC 5500, real-time dispatching operates through the highly reliable CES, putting all the information dispatchers need on the screen such as call information in the activity log, folders displaying channels, resources, and other capabilities accessed through drop-down menus and graphical toolbars.
- **MCC 5500 Positions -** The MCC 5500 is an innovative, software-driven radio communication control center that enables operators to communicate effectively with field personnel over numerous channels.
- **Console Audio Box (CAB -** The CAB provides the interface for all the audio accessories.
- **Console System Database Manager (CSDM -** MCC 5500 includes the CSDM designed to allow custom configuration of workstations that will enhance dispatcher's productivity. The CSDM provides supervisors with a way to easily customize individual or shared configurations.
- **Alias Database Server—** The Alias Database provides simple aliasing of radio unit IDs, status members, message numbers, and outbound phone numbers. This is an optional component and not included in all architectures.
- **Application Software -** The MCC 5500 operates using the powerful Microsoft Windows XP platform allowing multiple applications to run on one PC. Screen layout, menus and icons are easy to understand and quickly recognizable by users. This allows dispatchers to learn to operate the console faster and to be able to manage information more productively.
- **Network -** If required, the dispatch positions can be linked via a LAN, using standard networking techniques.

Console Layout

The MCC 5500 console positions will have the layout as specified by Harvey Rudd.

Security

MCC 5500 Access and Permissions

The MCC 5500 console software has two security levels - dispatcher and supervisor. To access the MCC 5500 Dispatch Console system, a user name and password is required. The console associates the user name with level of access and a range of other user-specific parameters through a configuration (*.cfg) file. The password provides security and level of access (dispatcher or supervisor) and is associated with the user name. If an invalid user name/password combination is entered, access is denied.

The program allows only a supervisor to change the layout of the GUI and add or remove resources. The ability to edit the configuration is disabled by default at login, even for a supervisor. The option can be enabled by a simple selection from the menu, and if the current login does not have the correct access rights a screen will prompt for a supervisor login.

CSDM Access and Permissions

Access to the CSDM is password protected and not all menu options are available to all users. The CSDM has three different levels of users:

- Regular users can view the system logs. Diagnostics and statistical information is still collected by the CSDM – this is the level at which the CSDM starts when first opened.

- Supervisor can view the system logs, run the diagnostic tests, and change certain settings for the system.
- Superuser in addition to the supervisor capabilities can also add consoles to the system, add/modify user accounts and upgrade software.

NOTE: Supervisor and Superuser access are password protected.

The CSDM computer is connected to one of the CES shelves designated the Master Shelf, via an RS232 link. This connection can be a local connection or a remote connection via a modem link. There can only be one CSDM connected to a MCC 5500 Dispatch Console. Both of these items are shown in Figure 5.

In addition, the CSDM computer can be accessed remotely using “PC ANYWHERE”, allowing service and support from any location.

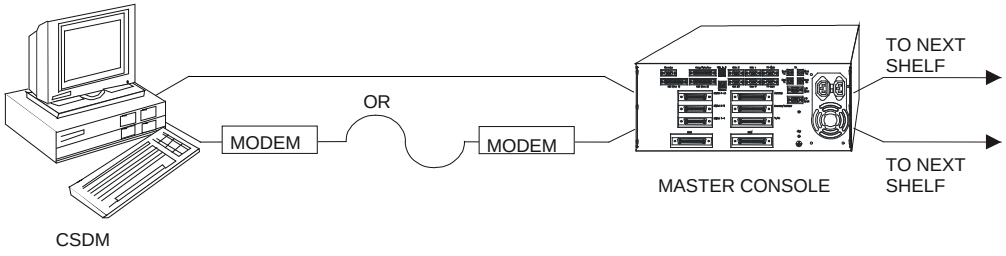


Figure 5: CES Connection

Reliability

MCC 5500 Dispatch Console uses a modular approach within the system. This modular design allows for quick and easy access for maintenance and automatic built-in tests. Modularity allows for a high emphasis on reliability and maintainability.

- If any shelf within the system fails or is removed from the system, shareable resources of all other shelves are still available to the system.
- If any component within a shelf fails or is removed from the console, the shareable resources of all other shelves are still available to the system.

Summary

Motorola is proposing a solution consisting of the MCC 5500 dispatch console for Caswell County. This solution will provide Caswell County with:

- Ease of use
- Upgradeability
- Enhanced hardware and software functionality
- Advanced management tools
- Customized convenience
- Compact form factor
- Reliability
- Longevity of investment

SYSTEM PRICING

The system as designed costs $222,834 before tax.

Equipment Total: $ 187,586
Installation and Optimization: $ 35,248

Console Items-$ 98,009
Control Station Items-$89,577
Labor Console-$16,348
Labor-Control Station and Misc.-$18,900

STATEMENT OF WORK

Commonwealth Radio Services, Inc. ("CRS") will provide installation, optimization, and training for the backup console system. The document delineates the general responsibilities between CRS and Caswell County as agreed to by contract.

CRS Responsibilities

CRS's general responsibilities include the following:

- Conduct Project Kickoff meeting with the County to review Project Design and finalize requirements.
- Schedule the implementation schedule in agreement with the County. Coordinate the activities of all CRS subcontractors under this contract.
- Provide the County with the appropriate system interconnect specifications.
- Define electrical requirements for each equipment rack and operator position to be installed in the County-provided facilities.
- Optimize equipment and verify that all equipment is operating properly and that all electrical and signal levels are set accurately.
- Verify communication interfaces between devices for proper operation.
- Test features and functionality are in accordance with manufacturers' specifications.
- Verify the operational functionality and features of the dispatch subsystems and the system supplied by CRS, as contracted.
- Integration of other third party products, not defined in this statement of work, is not included in this proposal.
    - Perform the installation of the CRS-supplied equipment described above.
    - Administer safe work procedures for installation.
- Document all issues that arise during the acceptance tests.
- Document the results of the acceptance tests and present to the County for review.
- Resolve any punch-list items before Final System Acceptance.

Caswell County Responsibilities

Caswell County will assume responsibility for the installation and performance of all other equipment and work necessary for completion of this project that is not provided by CRS. Caswell County's general responsibilities include the following:

- Provide all buildings, equipment shelters, and towers required for system installation.
- Ensure communications sites meet space, grounding, power, and connectivity requirements for the installation of all equipment.
- Obtain all licensing, site access, or permitting required for project implementation.
- Provide approved FCC licensing as required.
- Make any necessary site improvements to meet R56 standards.
- Provide required system interconnections.
- Coordinate the activities of all Caswell County vendors or other contractors.
- Remove, relocate, or dispose of obsolete communications equipment as required.
- Provide backup generator power for all equipment.

Assumptions

CRS has made several assumptions in preparing this proposal, which are noted below.

- All existing sites or equipment locations will have sufficient space available for the system described as required/specified by R56.
- All existing sites or equipment locations will have adequate electrical power in the proper phase and voltage and site grounding to support the requirements of the system described.
- Any site/location upgrades or modifications are the responsibility of Caswell County.
- Any tower stress analysis or tower upgrade requirements are the responsibility of Caswell County.
- Approved local, state, or federal permits as may be required for the installation and operation of proposed equipment are the responsibility of Caswell County.
- Any required system interconnections not specifically outlined here will be provided by Caswell County. These may include dedicated phone circuits, microwave links, or other types of connectivity.
- No coverage guarantee is included in this proposal.
- CRS is not responsible for interference caused or received by the CRS-provided equipment, except for interference that is directly caused by the CRS-provided transmitter(s) to the CRS-provided receiver(s). Should Caswell County's system experience interference, CRS can be contracted to investigate the source and recommend solutions to mitigate the issue.
- No box level or performance spec testing will be conducted.
- All conventional resources are existing tone control.
- CRS will provide 2-wire interface to a punch block for both the channel resources and operator positions. It is Caswell County's responsibility to interface to the existing logger.

911 Funding Committee Report David Bone

a) Caswell County 911 Funding Reconsideration

(vote required)

Standards Committee Update

Donna Wright

a) Training Update

NC 9-1-1 Board Peer Review Training

Getting Accurate Evaluation Data Through Cooperation and Teamwork

Housekeeping/Logistics

- Bathrooms
- Breaks
- Lunch
- Classroom Etiquette

Introductions

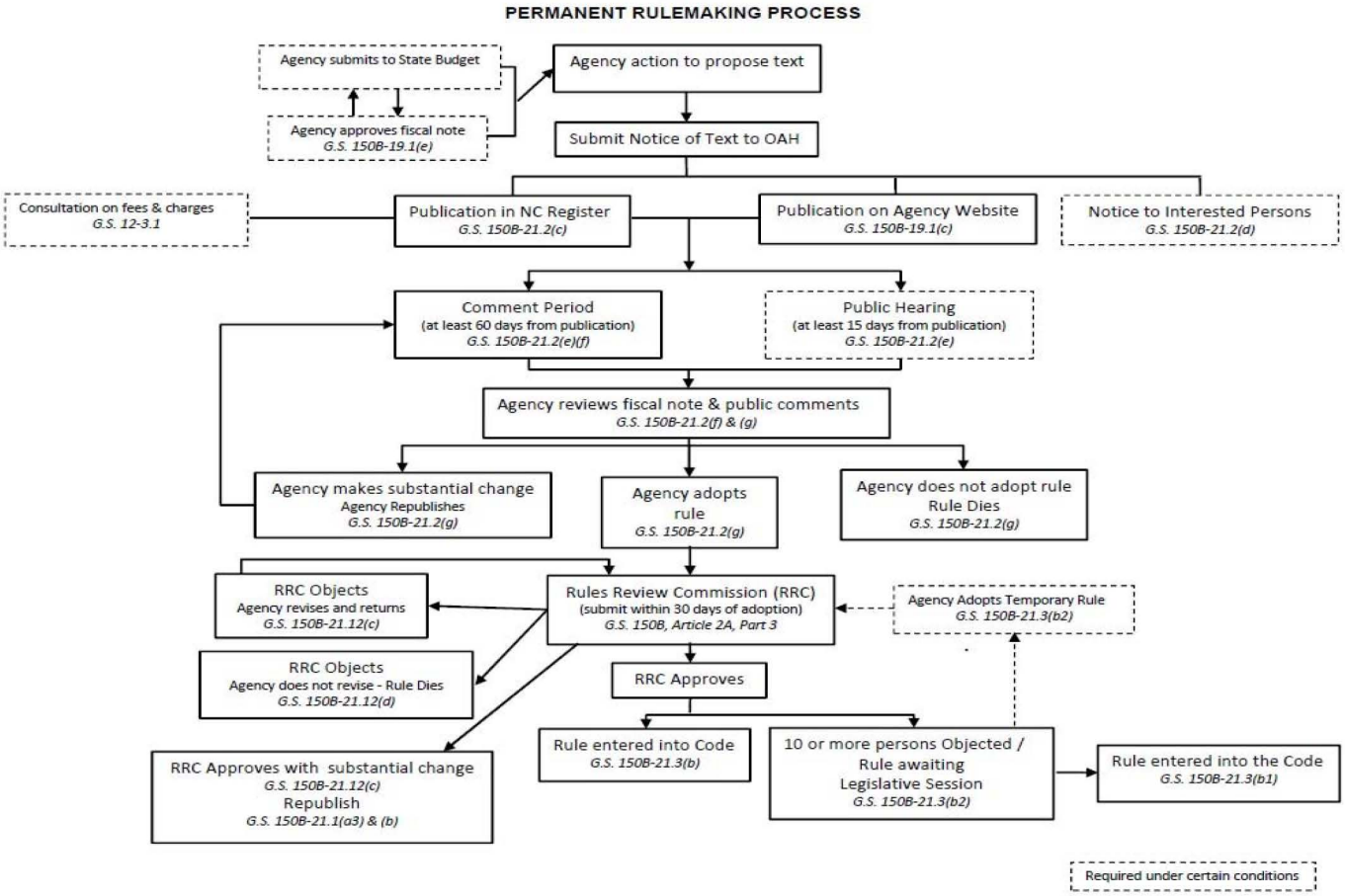
- Name
- Position
- Years of Service

Why did you want to be a Peer Reviewer?

Historical Data

- Why are we here?
- What requires this process?
- What is the purpose of this?
- Timeline of activities…the Rules process.

The Rules Process



The Review Process

So What Does the Review Process Consist of?

- Peer Review Document
- Pre Review Documentation
- Physical Review of PSAP
- After Action Review (AAR)/Improvement Plan (IP)
- Compliance Requirements

Scheduling the Review

- 9-1-1 Board Staff will schedule PSAPs for review
  - Sixty (60) days in advance of on site review
  - State deadline for receiving documentation
- 9-1-1 Board staff will gather statistical information such as Ecats information for the PSAP
- 9-1-1 Board staff will ask and schedule volunteers to participate in the review
  - One team will oversee the reviewing of the documents submitted by the PSAP
  - One team will take the pre assessment information and conduct the physical on site review

Pre-Review Documentation

- Peer Reviewers will review the documents that can be submitted before the on site visit
- Once these documents are reviewed, a report is created that documents success or failure of the reviewed items
- Example of these items would be:
  - Policies that need to be documented (Line 23)
  - Documents that indicate new equipment has been tested (Line 25)

Site Visit

- Attire
- Attitude
- Document what you observe, not what your opinions are on the PSAP's operation
- Show the PSAP management what you are writing and explain why you are writing it

The Assessment Team

We are a part of the team…not the coaching staff

Qualifications

- Must be part of the PSAP Management Team
- Letter of Support from their Manager
- Diverse but balanced set of Abilities and Strengths
- Standards Committee Recommendation
- NC911 Board Approval
- Complete Training

Application Process

- Complete Application
- Submit to NC911 Board Standards Committee
- Include Letter of Support
- Standards Committee will consider each application and make a recommendation to the NC911 Board.
- NC911 Board will select reviewers upon recommendation by the Standards Committee

Team Makeup

- One (1) North Carolina 911 Board Staff member
- One (1) Team Leader
- Two (2) Reviewers from North Carolina PSAPs

The Rules
09 NCAC 06C

Peer Review Form

NC 911 Board
PSAP Peer Review

Please complete the following information about your PSAP. The requested information is based on North Carolina Administrative Code Sub chapter 06C.09 NCAC 06C effective after July 1, 2016. If more space is needed to provide explanations, please provide an attachment.

General PSAP Information

Date of Review:

PSAP Name:

(Optional) FCC PSAP ID:

Categories of the Rules Requirements

- General PSAP Information
- Computer Aided Dispatch (CAD)
- Logging Recorder Information
- Customer Premise Equipment (CPE)
- Backup PSAP Plan
- Quality Assurance (QA)

General PSAP Information

- Date of the review
- PSAP Name
- FCC PSAP ID (Optional)
- PSAP Manager and Title (Optional)
- What Department within government does the PSAP Manager report?
  - Looking for Sheriff, City/County Council, etc.
- Who provides the PSAP's technical service?
  - Looking for who provides IT/Radio/CPE assistance when issues are encountered.

General PSAP Information

- Physical and Mailing addresses
- Telephone and Fax numbers.
- Email address of the PSAP Manager

- The above information is optional, however, it is urged that they submit this information for the After Action Report

General PSAP Information

1. How Many 911 Trunks?
2. How many telephone devices are in the PSAP?
   a) This incorporates all analog or digital phones including CPE console equipment, desktop phones, cellular or satellite phones.
3. Is there at least one outgoing line and device?
   a) Is there a means for the PSAP to dial an outside line in the event that all incoming lines are busy?
4. How many administrative lines does the PSAP have?

General PSAP Information

5. List the Administrative Lines
   a) This may be tricky if a PSAP has PRI lines. These are T1 connections that incorporate over 20 administrative lines.
   b) All lines will present with the published PSAP administrative line.
6. 911 Call Volume
   a) This can be obtained from ECats or another approved reporting software.
7. Abandoned 911 Calls
   a) This can also be obtained from ECats or another approved reporting software.
8. Call wait time from last month
   a) This information is to show compliance with the 90/10 rule.

General PSAP Information

9. Does the PSAP have the ability to receive and dispatch calls?
10. Where do 911 calls hunt to when all the 911 lines and 911 devices are in use?
    a) Where do 911 calls go if the system is inundated.
11. Explain the diverse routing for 911 trunks.
    a) Follow up with any other PSAP that is identified as a roll-over point.
    b) Ensure that any lapses in time between primary and backup PSAP is accounted for in routing.
12. Is there diverse routing between PSAPs when multiple PSAPS serve the same jurisdiction?
    a) Do PSAPs within the same jurisdiction have the ability to route calls to each other?

General PSAP Information

13. Does the PSAP have sufficient 911 trunk capacity to receive 99.9% of all calls during the busiest hour of the average week of the busiest month of the year?
    a) This information can be obtained by 911 Board staff through ECats reporting.
    b) This information will show any shortfalls in 911 trunk capacity.
14. Please show the operating procedures that ensure that Telecommunicators answer 911 calls before all other non-emergency operations.
15. Are there enough Telecommunicators to complete the calltaking process for 911 calls?
    a) Review ECats report for previous 12 months from 911 Board staff.

General PSAP Information

16. How do you provide the operating procedures to the Telecommunicators?
    a) Have the PSAP show any distribution or training methods to show how SOPs/SOGs are provided.
17. Are all the equipment and systems synchronized within 5 seconds of coordinated universal time?
    a) Is there a solution in place to synchronize all systems? If so document that in the AAR.
18. Is all equipment accessible for maintenance?
19. Is all equipment, software and services in good working order?
    a) If no, you will be required to document what is not in good working order.
    b) Be specific

General PSAP Information

20. Is equipment functional and in good working order?
    a) This is an observation point. Use your best judgment
21. Does the PSAP have valid and current written standard operating procedures for Telecommunicators?
    a) Verify the presence of these documents
22. Are the standard operating procedures manual and testing procedures for all systems in the PSAP available?
    a) Verify the presence of these documents

General PSAP Information

23. Please show the standard operating procedures that ensures that the telecommunicator stays on the line until the transfer is complete to another PSAP. Also show that if data isn't transferred that the telecommunicator relays the data as well.
24. Please show the standard operating procedures that ensure the PSAP takes appropriate stems to repair or isolate failures or poor performance. Also show that the persons responsible for repair or maintenance is notified with failures are detected.
25. Provide available documents that indicate new equipment has been tested in accordance with the manufacturers' specifications and accepted PSAP practices before being placed in service. Explain if necessary.

General PSAP Information

26. How does the PSAP handle peak workloads?
    a) Write a brief explanation based on how the PSAP operates during periods of high call volume. Be objective and state the facts of what they tell you.

Break Time

Computer Aided Dispatch (CAD)

27. Which CAD system does the PSAP use?
    a) Please include the version number if applicable.
28. Who maintains your CAD hardware?
29. Who maintains your CAD software?
30. Who provides the PSAP's technical support services?
31. Does the PSAP have a CAD that interfaces to the 911 system components?
    a) Can telecommunicators use pre-populated data from ANI/ALI information?

Computer Aided Dispatch (CAD)

32. Does the PSAP's CAD system store records relating to all 911 calls?
33. Does the PSAP's CAD system include data entry, resource recommendations, notification and tracking?
34. Does the PSAP's CAD system store records relating to all other calls for service and status changes?
35. Does the PSAP's CAD system track those resources before, during and after emergency calls?
36. Does the Telecommunicator have access to an indication of the status of all Emergency Response Units (ERU) at all times?

Computer Aided Dispatch (CAD)

37. Can a second call taker workstation complete CAD entry when the first call taker workstation fails?
38. Is the CAD system monitored for faults and failures?
39. When faults or failures occur, is there a visual and/or audible alarm?
40. How is physical and operational security maintained on the CAD?
41. Does the PSAP's CAD system recommend unit for assignments to calls?
42. Can the PSAP's CAD exchange data with other CADs?
43. Does the PSAP's CAD system ensure that the optimum response units are selected?

Computer Aided Dispatch (CAD)

44. Does the CAD system allow the telecommunicator to override the CAD recommendation for the unit assignment?
45. Does the CAD system have the ability to prioritize all system processes so that emergency operations take precedence?
46. Can the CAD system detect errors, faults and failures and automatically perform the appropriate reconfigurations and send a notification?
47. Does the CAD have automatic power-failure recovery capability?

Computer Aided Dispatch (CAD)

48. Please show the CAD maintenance agreement. What are the guarantees of performance?
    a) Request to see any documentation available for this rule.
49. Please show the installation, maintenance, and test records you have available for CAD.
    a) Request to see any documentation available for this rule.

Logging Recorder Information

50. Who maintains your recorder hardware?
51. Who maintains your recorder software?
52. Who provides the PSAP's technical services?
53. Are all incoming phone lines and radio channels recorded?
54. Does the logging recorder allow instant recall from every position?
55. Are dispatched 911 calls automatically recorded and does each call have a date and time stamp?

Logging Recorder Information

56. Please show the maintenance agreement for the recorder. What are the guarantees of performance?
    a) Request to see any documentation available for this rule.
57. Please show the installation, maintenance, and test records you have available for the recorder?
    a) Request to see any documentation available for this rule.

Console/Radio Information

58. Who maintains your radio hardware?
59. Who maintains your radio software?
60. Who provides the PSAP's technical services?
61. Please show the installation, maintenance and test records you have available for the radio system.

Customer Premise Equipment (CPE)

62. Who maintains your CPE?
63. Please show the maintenance agreement for CPE. What are the guarantees of performance?
    a) Please document what guarantees of performance are outlined by the maintenance agreement in the space provided on the form.
64. Please show the installation, maintenance and test records you have for CPE.
65. Who provides the PSAP's technical services?

Power Information

66. Does the PSAP have at least two independent and reliable power sources, each of which is adequate for operation of the PSAP?
67. Where are the power sources monitored?
    a) Locally within the PSAP?
    b) Third party monitoring?
68. What is the Primary Power Source?
69. What is the Secondary Power Source?
70. Is the transfer to the secondary power source automatic if the primary power source fails?

Power Information

71. Can the generator provide sufficient power to run the PSAP?
72. Ensure that the generator is installed, fueled and operating properly.
    a) Ask the site to show you the service/maintenance log for this information.
73. Does the PSAP have a Stored Emergency Power Supply system (SEPSS) or battery backup?
74. Where is the SEPSS monitored?
75. Is the backup power transfer switching means accessible only to authorized personnel?

Power Information

76. What does the PSAP use to protect communications equipment, computers, etc. from power surges?
77. Is all electronic equipment essential to the operation of the PSAP connected to an isolated ground?
78. Ensure a UPS system is installed to prevent power surges and provide power for all essential 911 center operations.
    a) This will be an observation by the reviewer.
79. Is there a UPS bypass switch?

Power Information

80. Is the UPS enunciated in the operations room?
81. How long can the UPS and battery systems provide power?

Backup PSAP Plan

82. Does the PSAP have an approved backup plan?
83. Provide backup plan testing documentation.
84. Please show that the failure of the primary dispatch system will not affect the backup dispatch system.
    a) This information can be obtained from the backup plan.
85. What is the CAD backup method?
    a) This information can be obtained from the backup plan.
86. Does the CAD server have a failover?
    a) This information can be obtained from the backup plan.

Backup PSAP Plan

87. Does the PSAP test all systems at least once per year?
    a) This information can be obtained from the backup plan.
88. Provide CEMP and testing documentation. Certification from the PSAP that testing has been completed in the appointed time frame and certification includes results and any action plans as a result of the testing.
89. Do Telecommunicators who dispatch calls have a back means to dispatch calls?

PSAP Records

90. Does the PSAP keep maintenance records for at least 5 years?
91. Does the PSAP maintain records of equipment maintenance for more than 5 years?
92. Does the PSAP have a management information system to track 911 calls and dispatch of 911 calls?
93. Does the PSAP have records including dates and times for test, 911 and dispatch signals, circuit interruptions and equipment failures, abnormal and defective circuit conditions?
94. Please show the approved access control plan.

Quality Assurance (QA)

95. Does the PSAP have a quality assurance process to ensure the consistency and effectiveness for 911 call processing?
96. Please show the monthly and annual measurements used in the quality assurance process to improve performance.
97. Does the PSAP show dispatch performance measurement statistically done monthly and compiled over a one (1) year period?

Compliance to
The Peer Review Process

Three Step Process

- Site Review
- PSAP Written Response and Corrective Action Plan (CAP)
- Standards Committee Action

Step 1 – Site Review

- Begins July 2017
- Immediate feedback
- Review Report Completed
- Review Report Delivered to PSAP

Site Review Process Cont….

Deficiency
corrected
within 30 days
= No review
for 3 Years

Deficiency
not corrected
within 30 days =
Additional Review
within 12 months

STEP 2- PSAP Written Response and Corrective Action Plan (CAP)

- Due within 30 days
- Identify actions taken
- Corrective Action Plan Submittal and Approval
- PSAP Compliance

STEP 3–
Standards Committee Action

- No Corrective Action Plan approved = referral to the Standards Committee for Action
- Notice to PSAP of Standards Meeting
- Notice/s of Recommendation by Standards Committee

No Response by PSAP= Referral to the NC911 Board with a recommendation for further action.

Consequences for non-compliance

<u>09 NCAC 06C .0104 FAILURE TO COMPLY WITH RULES</u>

- If the Board determines that a PSAP or CMRS service provider is not adhering to an approved plan or is not using funds in the manner prescribed in these Rules or G.S. 143B, the Board may, after notice and hearing, take action authorized by G.S. 143B affecting distributions or reimbursements until satisfactory evidence of compliance is provided to the Board.

PSAP FAILURE TO COMPLY WITH RULES

- Certified letter mailed to the PSAP to request justification or an explanation from the Primary PSAP for the apparent non-compliance.
- The Primary PSAP has15 calendar days to respond to the letter.
- Report Provided to the NC911Board for review
- Notification to the PSAP of non-compliance and consequences
- PSAP to appear before the Board for hearing

NC911 Board Appeal Process

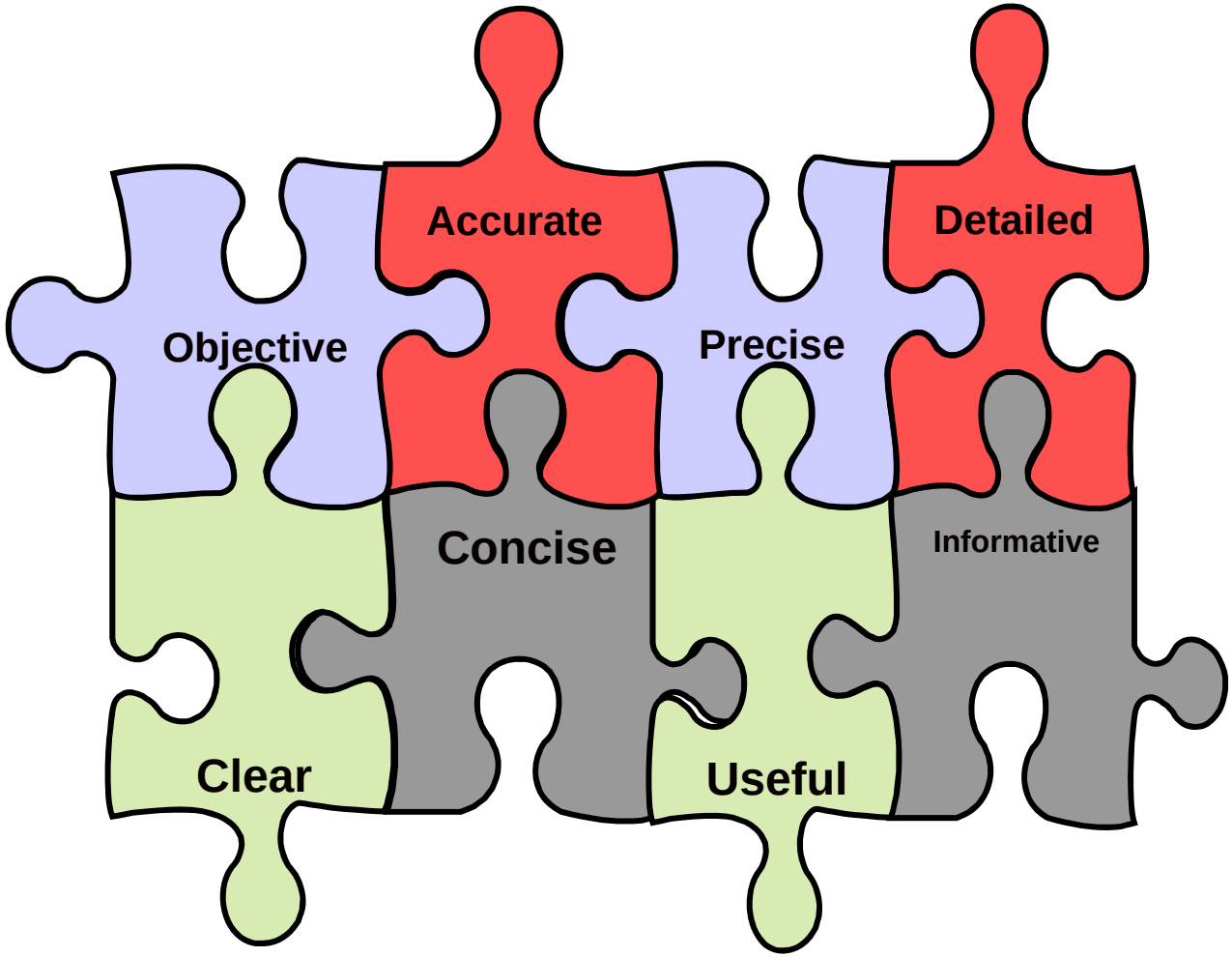
- Refer to Rules 09 NCAC 06C .0109 Hearings
  - Letter to the Board
  - Request a Hearing within 30 days
  - Provide any requested additional evidence or documentation
  - Decision made within 120 days after receipt of all documentation.

Developing Full, True and Actionable After Action Reports

The Value of Content

- The AAR/IP is the physical take-away from any exercise. It immortalizes where the participants were and where they needed to go
- Should be written in a detailed and rich fashion so that both participants and non-participants understand what happened, what needs to improve and why
- Don't neglect the Executive Summary
  - Written for a separate audience
  - Must address the high priority items clearly and succinctly

Assessment Expectations



Assessment Expectations

- Language Considerations
  - Active Voice
  - Attributory without being accusatory
  - Basic grammar requirements
    - Use whole sentences
    - Use complete paragraphs
    - Use proper punctuation
    - Write out all acronyms on first use
    - Avoid contractions
    - Avoid colloquialisms

Hallmarks of a Good Narrative

- Description
- Outcome
  - Success Factor(s)
    - Root cause(s)
    - Consequence(s)
  - Challenges
    - Root cause(s)
    - Consequence(s)
- Conclusion
- Recommendations

Leveraging Expertise

- Evaluators should contribute directly to converting their observations and documented feedback into complete AAR/IP content
  - Avoid asking one person to write the whole AAR/IP in a “vacuum”
  - Bring in additional expertise, where needed

Beneficial Alignments

4.2.2 Regional Notification Procedures

TCL Critical Task/Performance Measure: *ComC 4.2.1: Communicate incident response information.*

Description: On a daily basis, the NCR public safety professionals respond independently along discipline and agency lines in parallel to one another. They frequently operate as an integrated force when required to do so for an unusual or larger-than-routine event. Events such as those outlined in the exercise scenario detail the type of instances where moving information concisely and precisely among agencies, facilities, and functions become essential to the successful support of a large event or resolution of an incident. Information flow pathways needed to support this type of event or incident must, however, be clearly defined if
and communications specialists are expected to move infe
accurately, completely, and without unnec

- Document important grant or legal alignments directly in the AAR

Actionable Recommendations

- Recommendations must be
  - Direct & clear
  - Actionable: must start with a verb
  - Distinct from one another
  - Operationally and technically sound
  - Non-repetitive throughout the AAR
  - Designed to provide both “low hanging fruit” and “Cadillac” options
  - Written to promote accountability
  - Achievable and measurable

Follow Through

- Promote sharing exercise lessons learned and best practices with local, regional, and statewide partners
- Develop an information sharing mechanism to continue to share progress on improvement plan recommendations and the real-world applications of exercise items
- Set, track, and enforce timeframes
- Deliberately use pre-planned events to test improvement plan solutions in the future
- Don't let incomplete plans come back to haunt you or your evaluation participants

QUESTIONS? CONCERNS?

Standards Committee Update

Donna Wright

b) Approval of Peer Reviewers

(vote required)

Randy Beeman, Cumberland County
David Brown, Hertford County
Debora Cottle, New Hanover County
Tammy Dyles, High Point
Dominick Nutter, Raleigh-Wake
Teresa Ogle, Madison County
Rodney Pierce, Davie County
Brian Short, Vance County
Candy Strezinski, Iredell County
Stephanie Wiseman, Mitchell County
Brett Wrenn, Person County

Standards Committee Update

Donna Wright

b) Approval of Peer Reviewers

(vote required)

Updating State 911 Plan

Richard Taylor

Hurricane Matthew After Action Report

Greg Hauser

Other Items

Adjourn

Next 911 Board Meeting

February 24, 2017
Raleigh-Wake Emergency Communications Center
Westinghouse Blvd.
Raleigh, NC

School Safety Committee
Tuesday, January 31, 2017
1:30 pm
Lighthouse Conference Room
3700 Wake Forest Road
Raleigh, NC

Education Committee
Friday, February 10, 2017
10:00 am
3900B Conference Room
3900 Wake Forest Road
Raleigh, NC

911 Funding Committee
Thursday, February 9, 2017
2:00 pm
3900B Conference Room
3900 Wake Forest Road
Raleigh, NC

911 Standards Committee
Peer Reviewer Training
Thursday-Friday, February 16-17, 2017
10:00 am
Raleigh-Wake ECC
Westinghouse Blvd.
Raleigh, NC