# IOWA DEPARTMENT OF HOMELAND SECURITY & EMERGENCY MANAGEMENT

**Enhanced 911 Annual Report**

**Mark Schouten, Director**

**January 15, 2015**

*[This page is intentionally blank.]*

# Table of Contents

# Introduction

The Iowa Department of Homeland Security and Emergency Management (HSEMD) submits this Enhanced 911 (E911) annual report to the General Assembly's standing committees on government oversight pursuant to Iowa Code § 34A.7A (3) (a). This section of the Code requires the E911 program manager to advise the General Assembly of the status of E911 wireline and wireless implementation and operations, the distribution of surcharge receipts, and an accounting of revenue and expenses of the E911 program.

The State's E911 system consists of 115 public safety answering points (PSAP) across 99 counties that handle both landline and wireless 911 calls for the citizens of Iowa who make emergency calls. The wireline 911 system was started in Iowa in 1988, originally codified in Iowa Code Chapter 34, and is managed and financed by local 911 service boards through local funding and a landline surcharge system under Iowa Code Chapter 34A. The wireless system was added to the system in 1998, funded through a wireless surcharge on monthly users' bills, and managed by the Iowa Department of Homeland Security and Emergency Management under Chapter 34A.

The wireless portion of the 911 system is currently undergoing a significant upgrade to an IP-based system. The first phase of what is called the next generation 911 network has converted analog trunking to the local PSAPs to a statewide IP-based Ethernet network. This upgrade was completed in November of 2012. The second phase of the network upgrade is currently in progress and includes moving and upgrading the network's data centers to ensure greater redundancy. Individual PSAP equipment is also being upgraded to IP-enabled call-handling equipment. When completed, this upgrade will allow PSAPs to receive IP-based signaling for the delivery of emergency calls that include text, video, and picture messaging. Callers will be able to text emergency messages to select PSAPs within the next few months. The system improvements also include improved GIS mapping and database and address reconciliation to improve the automatic location services. When completed, this will allow a dispatcher to pinpoint the caller on recent GIS imagery of the geographical area the PSAP covers.

Local 911 service boards are responsible for the implementation of these equipment upgrades with funding provided by the E911 carryover fund. Sixty-seven of the 115 PSAPs have been updated as of December 31, 2014, and the upgrade program should be completed by December 31, 2015.

Chapter 34A of the Code of Iowa requires that each county in the state establish the joint enhanced 911 service board that has authority over the local PSAP. Each board has the responsibility to develop a countywide E911 service plan, detailing the manner and cost for the implementation of a wireline and wireless E911 system for the PSAP geographical area. However, the overall operation of the PSAP is left to the joint county service boards. As of today, all 99 counties have approved enhanced E911 service plans.

The Iowa Department of Homeland Security and Emergency Management has the responsibility to review and approve the countywide E911 service plans. HSEMD is also responsible for the overall administration of Chapter 34A through a program administrator appointment by the HSEMD director.

# History of Iowa 911

The Iowa 911 system got its start in 1986 when the Iowa General Assembly passed a law that created a 29-member State Emergency Telephone Number Commission that was directed to study the issue of statewide implementation of 911 services. The Commission issued its report in January 1987 and the legislative language contained in the report was introduced as House File 2400. House File 2400 was passed by the General Assembly and was signed into law by Governor Branstad on May 6, 1988. It was this law that set out the basic wireline 911 system in Iowa in Iowa Code Chapter 34 that is currently codified in Chapter 34A.

In 1996, the Federal Communications Commission (FCC) mandated that wireless 911 service be put in place and function similarly to the wireline 911 that Iowa had in place. The 1998 General Assembly amended Code of Iowa Chapter 34A in response to the FCC action to include wireless 911 services.

The state's initial 911 wireline system only directed callers dialing 911 to the local PSAP; it didn't include information about the caller to the 911 dispatcher nor did it require specific routing information to ensure that the call arrived at the correct PSAP. In 1989 the General Assembly encouraged local 911 service boards to include enhanced services dealing with the location of the person making the 911 call as part of their 911 service plan.

To meet the requirements of an enhanced 911 system set out in Iowa Code § 34A.2 (7), the system must be capable of automatically providing voice, displaying the name, address of location, and the telephone number of the incoming 911 call. The system must also be able to route the incoming call to the PSAP that corresponds to physical location of the caller. Currently, all landline 911 services in Iowa meet the enhanced definition.

With respect to wireless calls, the transition to enhanced services was a two-step process. Phase one of the transition to enhanced wireless 911, as set out in Iowa Code § 34A.2 (19), requires the system to display to the dispatcher the call-back number of the caller and the cell tower that received the call and transmitted it to the PSAP. Phase two of the transition, described in subsection 20, requires the cell company to provide the call-back number plus the latitude and longitude of the caller so that the call and address information can be tied to GIS imagery information. Since December 31, 2007, all 115 PSAPs in all 99 counties have accepted enhanced Phase two calls from the wireless service providers.

On July 8, 2011, the State of Iowa hired Tele-Communication Systems, Inc., (TCS) to begin the development and implementation of the next phase of Iowa's enhanced 911 system: the implementation of a statewide, IP-enabled, or next generation, 911 system that at its heart is digital rather than analog.

As part of this five-year $4.4 million contract, TCS is responsible for the design, programming, installation and maintenance of all components of the wireless 911 backbone and the delivery of both wireline and wireless 911 calls. TCS is currently in the third year of its five-year contract for the system upgrade.

# Current Status of E911 System

The current 911 system operating in Iowa is an enhanced 911 system that is transitioning to a next generation system. As an enhanced 911 system it can give the automatic address or location data and routing capabilities that an enhanced 911 system allows. As a next generation system it is IP or Internet-based rather than an analog system.

Iowa's enhanced 911 system is composed of two calling systems that both lead to the local PSAP dispatcher—the landline system and the wireless system. Although the 911 system started as a landline system in 1988, as the use of cell phones increased, the wireless portion of the system has grown to the extent that currently some 70 percent of the calls to local PSAPs come over the wireless system.

## Wireline 911

The wireline system has been developed and implemented by the local Joint E911 Service Boards. As such, the system is comprised of a variety of differing network elements. This has led to a system of disparate 911 networks. These networks include direct trunking to the PSAP, locally selectively routed calls and regionally selectively routed calls. Trunk-based legacy systems are only capable of delivering wireline 911 calls.

## Wireless 911

With advances in technology and the evolving use of wireless cell phones, a new network system was needed to allow for the transmission of 911 wireless calls. Beginning in 1998, HSEMD began the process of deploying a statewide wireless 911 network. This network was comprised of a single selective router that connected all PSAPs in Iowa.

As technology further evolved from a cell phone to a smartphone with enhanced capabilities, HSEMD recognized the desire of the public to use these enhanced capabilities to communicate with public safety agencies. These new capabilities include text, picture, and video. Thus HSEMD began the migration from an analog-based system to an IP-enabled next generation system.

Initial deployment of the next generation wireless 911 system had most of the 115 PSAPs connected to the 911 data centers using multiple carriers. Managing multiple carriers completed the connectivity, but had the inherent obstacles of increased potential for failure, duration of outages, and higher recurring costs. To minimize these obstacles, HSEMD has worked to establish a direct connection from each PSAP to the wireless 911 system. The Iowa Communications Network (ICN) was able to correct this by providing a direct circuit. The process of connecting PSAPs to the ICN has been underway for the past four years and by the end of 2015 all but one of the 115 PSAPs should be directly connected to the ICN, decreasing the potential for failure and costs.

The core wireless 911 network includes two redundant data centers connected by two 50 Mb circuits to handle the call volume and call routing. Data centers receive incoming 911 calls directly from the wireless carriers and route the calls based on the location of the caller to the corresponding PSAP. If a call is received at one data center and it is unable to process the call, it will be automatically rerouted to the other data center.

The two data centers are currently located in Newton and West Des Moines. To provide geo-diversity between the two data centers, and because the

# Current Status of E911 System

Newton location will be closing in 2015, HSEMD will relocate the data center in Newton to Davenport. Installation and testing of the PSAP equipment will begin in January 2015. The Newton location will be operational until all the installation and testing is complete and all wireless carriers have migrated their circuits to the new location. Once the Davenport location is operational, the Newton location will be decommissioned.

The Iowa Department of Homeland Security and Emergency Management has upgraded the wireless 911 network backbone to support the next generation 911 (NG911) emergency services IP-based system. The upgrade to a NG911 network will support the use of text, video, and picture messaging to access emergency care via 911 once these services become available from the wireless carriers. As of November 2, 2012, all 115 PSAPs have been migrated to the new next generation 911 network.

The Iowa Department of Homeland Security and Emergency Management plans to begin deploying text to 911 in April 2015 to counties that have completed necessary upgrades and are able to utilize this technology. Once the PSAPs complete the necessary equipment upgrades and training, HSEMD will submit the requests to the wireless carriers to provide text–to-911 services to identified counties.

## Geographic Information Systems and NG911

Geographic Information Systems (GIS) technology provides the critical data backbone of the NG911 network and is a key component for call routing, call handling, call delivery, location validation and emergency response. Data from the GIS also provides dispatchers and responders access to more information such as location, details about the caller, and additional information to include the caller's service provider or telematics. Information sharing is essential to building statewide GIS datasets, as more than 100 different data owners need to share information for the NG911 system. HSEMD has budgeted some $15,741,664 over the next six years to support data maintenance and creation, hardware and software, and aerial imagery needed to complete and maintain the GIS component of the NG911 system.

HSEMD has contracted with Geo-Comm Inc., to assist in developing the statewide E911 GIS standards. There have been five educational seminars held with the PSAPs, city and county GIS partners, and public safety stakeholders to provide information and gather feedback on the project. A committee of local GIS partners has been established to assist in the development of the standards.

As of December 31, 2014, Geo-Comm Inc. has completed 64 assessments and provided the data analysis reports to the counties. A final report to the Iowa Department of Homeland Security and Emergency Management is due by February 5, 2015, and will include the data analysis report for each county, the statewide NG911 GIS standard, and recommendations of next steps for continuing on the critical path to NG911 GIS completion.

## Local PSAP Upgrades to NG911

The call handling equipment at each PSAP must also be upgraded to meet the NG911 standards. Local 911 service boards are responsible for the implementation of these equipment upgrades with funding provided by the E911 carryover fund. Sixty-seven of the 115 PSAPs have been updated as of December 31, 2014, and the upgrade program should be completed by December 31, 2015.

# Current Status of E911 System

Attachment 1 of this report describes the progress made by local PSAPs in upgrading their call handling equipment. The deadline for PSAP equipment upgrades to IP-enabled equipment is December 31, 2015.

The transition to an IP or digitally-based 911 system has made it possible to receive 911 calls at any location, creating the potential for so-called virtual PSAPs. This improvement has allowed PSAPs to share the expense of 911 call processing equipment. For example, in south central Iowa, a consortium of seven counties has joined together to provide E911 services. By using NG911 equipment, the seven counties now use only three sets of call processing equipment without changing how they interact with 911 callers. By sharing call processing equipment, the seven counties saved some $400,000 in upgrade equipment costs.

To support these initiatives within the wireless network, HSEMD has projected the costs required to put in place all the elements described earlier in this section. As detailed in Attachment 2, HSEMD will be able to fully deploy the NG911 network to include network redundancy, GIS database development and maintenance and local PSAP equipment upgrades while maintaining a solid financial foundation for the entire program.

This process will increase the survivability of the wireless 911 network while also allowing state and local responders to fully leverage and utilize the statewide next generation 911 system for present technology as while also being positioned to effectively utilize future improvements.

# Subscriber Surcharges and Distribution

Funding for the wireline and wireless portion of the E911 system are set out in Iowa Code §§ 34A.7 and 34A.7A, respectively. The surcharge for both wireline and wireless 911 services was set at $1 per month per access line across the entire state in July 2013 by the General Assembly. The wireline surcharge attached to landline subscribers' bills is deposited in the local E911 service fund and disbursements are made by the joint E911 service board. The wireless surcharge is deposited in the State E911 Emergency Communication Fund administered by HSEMD.

As of December 31, 2014, service boards in all 99 counties were collecting wireline surcharges at the rate of $1 per month. For the 12 months ending September 30, 2014, the wireless surcharges totaled $27,283,315.35. In fiscal year 2014 the total of wireline surcharges was a projected $11,834,577.

The Iowa Department of Homeland Security and Emergency Management has the responsibility to order the implementation of the surcharge with each telephone service provider who provides service within the E911 service area. Within the state, there are 295 incumbent and competitive local exchange service providers. Each local telephone service provider remits collected surcharge funds directly to the respective joint E911 service board on a quarterly basis.

## Prepaid Wireless and VoIP Surcharges

In 2012 Iowa Code § 34A.7B authorized a surcharge on prepaid wireless phone transactions in the amount of 33 cents per prepaid transaction occurring in the state of Iowa. The prepaid surcharge is remitted to the Iowa Department of Revenue which transfers all remitted prepaid wireless 911 surcharges to the state treasurer for deposit in the E911 Emergency Communications Surcharge fund. In 2013 Iowa Code §34A.7A was amended to allow the prepaid wireless surcharge to increase or decrease proportionately to the wireless surcharge. As a result of that change the prepaid surcharge is currently 51 cents per prepaid transaction and the total revenue generated for this surcharge in 2014 is approximately $1,706,903.86.

In 2012 the definition of communication service provider in Iowa Code §34A.2 was amended to service providers that transported information over the Internet, including voice over Internet protocol (VoIP) companies, which are now required to collect and remit surcharges as a communications service provider.

Cable TV companies that sell VoIP services as part of a bundled package pay their collected surcharges to the local wireline E911 service board. The VoIP providers, such as Vonage, that are not restricted to a particular location, pay the surcharges assessed to their customers to the state E911 emergency communication fund.

## Wireless Surcharge Distribution

The bulk of the E911 surcharge revenue obtained is through the wireless surcharge. Under Iowa Code §34A.7A (2), the collected surcharges must be distributed in the following order:

1. To Homeland Security and Emergency Management for program administration, an amount equal to that appropriated by the General Assembly. In fiscal year 2015 this amount was $250,000.

# Subscriber Surcharges and Distribution

2.  To wireless service providers, 13 percent of surcharge funds generated for the three-year period of July 1, 2013, through June 30, 2016, to recover their costs of providing E911 wireless phase one services.  On July 1, 2016, this amount will no longer be distributed to wireless service providers. For the 12 months ending September 30, 2014, this amount was $457,961.94.

3.  To communication service providers, wireline carriers for eligible expenses for transport costs of calls between the E911 network routers and the local PSAPs.  For the 12 months ending September 30, 2014, this amount was $843,594.86.

4.  To wireline carriers and automatic location information database providers, for the costs of maintaining and upgrading E911 components and functionalities including the E911 selective routers and beyond and the costs of maintaining the automatic location information database.  For the 12 months ending September 30, 2014, this amount was $1,542,584.57.

5.  To joint E911 service boards, 46 percent of the surcharge funds generated for communications equipment utilized in the implementation and maintenance of E911 services within the local PSAP.  Iowa Code § 34A.7A (2) (e) (2) (a) − (c) sets out how the 46 percent amount is to be distributed among the 115 PSAPs in the state.  For the 12 months ending September 30, 2014, this amount was $12,697,540.18.

# E911 System Metrics

Attachment 3 to this report shows a map of PSAP locations.

Attachment 4 to this report shows the relationship among the annual volume of wireless calls received by PSAP counties, the annual wireless surcharge payment made to those counties, and the resulting cost per call for the period October 1, 2013, to September 30, 2014.

As indicated in Attachment 4, the annual cost per wireless call ranges from a low of $6.08 per call in Polk County to a high of $142.98 per call in Ringgold County. The median cost per call is $38.10. The number of calls to a PSAP per month ranges from a low in Audubon County of 41 calls per month to a high in Polk County of 14,155 calls per month, with the median monthly wireless call volume of 214 calls per month.

Iowa Code §34A.7A (5) (a) required the E911 program manager to establish a methodology for determining the actual costs to operate a PSAP and begin collecting data concerning the actual costs by January 1, 2014. HSEMD is now collecting that data with the cooperation of the local PSAP and will submit a report on those costs to the General Assembly by March 1, 2016. The purpose of the cost report is to assist the General Assembly in determining whether the E911 surcharges and other funding sources are sufficient to fund the actual costs of the E911 system.

Attachment 1 shows the PSAPs that have upgraded equipment to current standards, funds spent at the PSAP for 2014, and PSAPs that are now technologically capable of receiving text-to-911messages. PSAPs that are currently showing no equipment upgrades or funds obligated on Attachment 1 still have time to complete the upgrades. A few PSAPs are moving to new locations and are waiting to complete the upgrades once relocated to their new location. Other PSAPs had immediate equipment needs for items that had failed over the course of the previous year. HSEMD's 911 staff will begin working with those counties to assist them in the process to complete their equipment upgrades by the deadline.

Attachment 5 shows an accounting of income and expenses for the twelve months ending September 30, 2014.

Attachment 2 shows a five-year cost projection to support efforts to increase the survivability of the wireless 911 network by provisioning a limited secondary network and relocating a data center to ensure geographic diversity. These projections also include development of a GIS-based 911 database that will allow state and local responders to fully leverage and utilize the statewide next generation 911 system.

Attachment 6 details the cost savings achieved in moving from the legacy system to an IP-enabled next generation 911 system utilizing the ICN.

# Conclusion

Advancements in technology have enabled the use of these technologies to provide more accurate, timely, redundant systems that enable citizens to contact 911 in order to get much needed life-saving resources. The GIS enhancement of the 911 system uses common data that can be shared seamlessly from PSAP to PSAP to more effectively and accurately dispatch resources to the impacted caller's location. GIS will no longer be constrained by service areas and state lines.

Much of the infrastructure used to support the 911 system can also be utilized to reach out to the public through wireline and wireless capabilities to provide critical warning and life safety infor-

mation. Another initiative Iowa has undertaken is a statewide alerting system that can utilize GIS information to alert citizens in a defined polygon area. The GIS information gathered as part of the 911 system would greatly enhance this critical public alerting capability.

The Iowa Department of Homeland Security and Emergency Management will continue to work hand in hand with the Statewide 911 Communications Council, the Iowa Utilities Board, the Iowa Telecommunications Association, the Iowa Statewide Interoperable Communications System Board, and Local 911 Service Boards to maintain and improve the level of 911 services within the state.

## For More Information

**Learn more about Iowa's E911 program at the Iowa Department of Homeland Security and Emergency Management's website:**
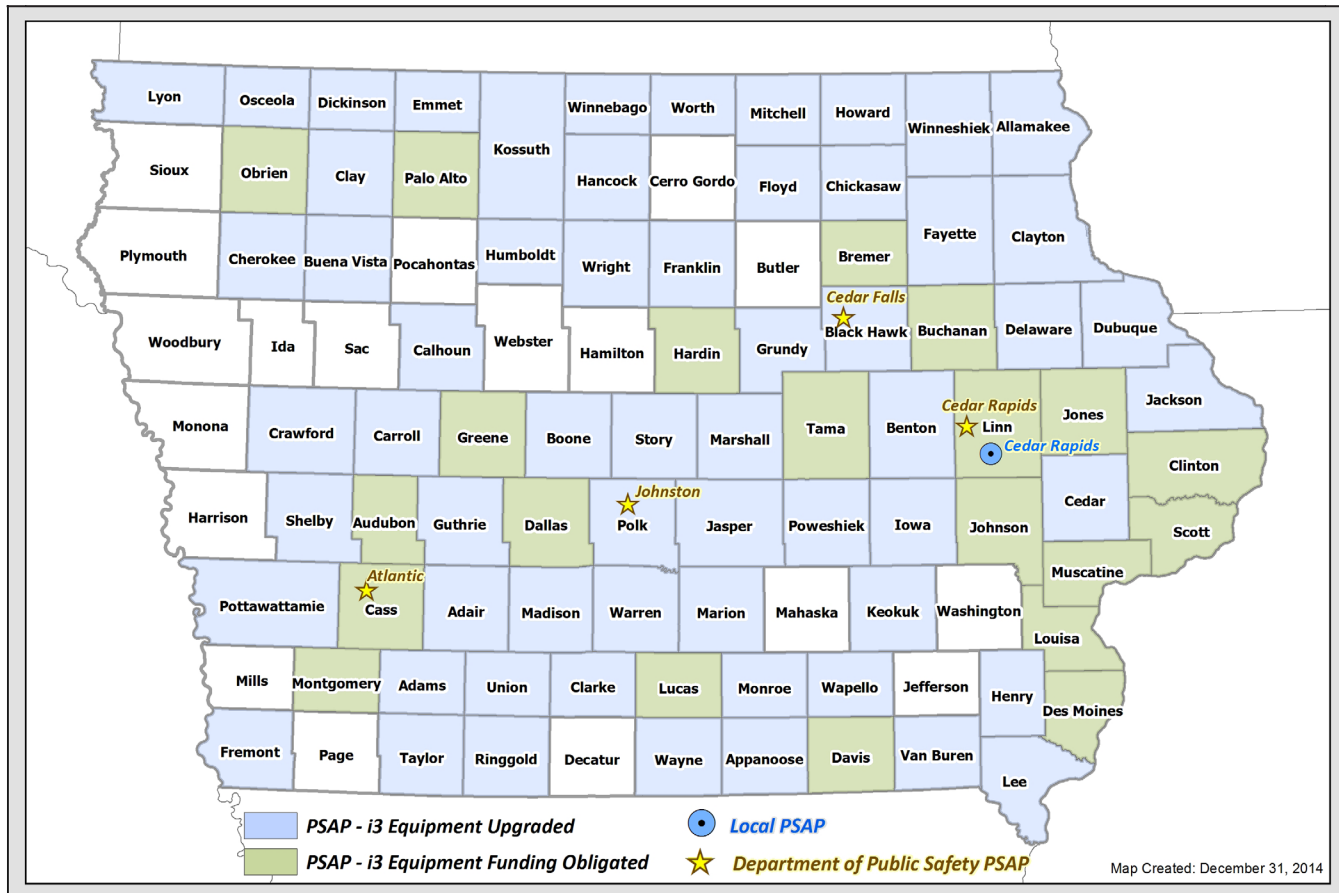
### www.homelandsecurity.iowa.gov

**Inquiries may directed to the E911 program administrator at 515.725.3231.**

# Attachment 1
# Map of Ugraded Public Safety Answering Points

## Equipment Upgraded to i3/Funding Obligated for i3 Upgrade

# Attachment 2
# Revenues and Expenditures Projection

| 46% PSAP pass through, $11.5 million a year Expended from Carryover for PSAP and E911 system improvements | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Projections | | |
| **Revenue** | **FY2015** | **FY2016** | **FY2017** | **FY2018** | **FY2019** | **FY2020** |
| Surcharge Collected | $26,000,000.00 | $26,000,000.00 | $26,000,000.00 | $26,000,000.00 | $26,000,000.00 | $26,000,000.00 |
| Prepaid Wireless | $2,000,000.00 | $2,000,000.00 | $2,000,000.00 | $2,000,000.00 | $2,000,000.00 | $2,000,000.00 |
| Interest | $45,000.00 | $45,000.00 | $45,000.00 | $45,000.00 | $45,000.00 | $45,000.00 |
| Carryover brought forward | $21,045,807.00 | $11,010,907.00 | $7,906,740.33 | $5,362,573.66 | $2,818,406.99 | $274,240.32 |
| | **$49,090,807.00** | **$39,055,907.00** | **$35,951,740.33** | **$33,407,573.66** | **$30,863,406.99** | **$28,319,240.32** |
| **Expenditures** | | | | | | |
| HSEMD | $250,000.00 | $250,000.00 | $250,000.00 | $250,000.00 | $250,000.00 | $250,000.00 |
| Wireless Service Providers | $560,000.00 | $560,000.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| Network transport | $2,400,000.00 | $2,400,000.00 | $2,400,000.00 | $2,400,000.00 | $2,400,000.00 | $2,400,000.00 |
| PSAP | $12,700,000.00 | $12,700,000.00 | $12,700,000.00 | $12,700,000.00 | $12,700,000.00 | $12,700,000.00 |
| Carryover Applications-Funds Obligated/Expended | $11,500,000.00 | $11,500,000.00 | $11,500,000.00 | $11,500,000.00 | $11,500,000.00 | $9,230,073.65 |
| | **$27,410,000.00** | **$27,410,000.00** | **$26,850,000.00** | **$26,850,000.00** | **$26,850,000.00** | **$24,580,073.65** |
| | | | | | | |
| **NG911 Future Enhancements** | | | | | | |
| Newton Data Center Move-equipment/installation/engineering (NRC) | $2,000,000.00 | | | | | |
| WDM Data Center upgrade equipment/installation/engineering (NRC) | $2,000,000.00 | | | | | |
| GIS PSAP Data Maintenance (Annually) | $1,115,000.00 | $1,115,000.00 | $1,115,000.00 | $1,115,000.00 | $1,115,000.00 | $1,115,000.00 |
| GIS Data Services and portal (year one) | $1,500,000.00 | | | | | |
| GIS Data Services and portal (Annual cost) | | $1,000,000.00 | $1,000,000.00 | $1,000,000.00 | $1,000,000.00 | $1,000,000.00 |
| HSEMD on site backup servers and data | $40,000.00 | $40,000.00 | $40,000.00 | $40,000.00 | $40,000.00 | $40,000.00 |
| Statewide Imagery Service (Immediate Service) | $1,000,000.00 | | | | | |
| Imagery Acquisition (1st collection years 1-3) | | $866,666.67 | $866,666.67 | $866,666.67 | | |
| Imagery Acquisition (2nd collection years 4-6) | | | | | $866,666.67 | $866,666.67 |
| Secondary ESInet (Annually) | $200,000.00 | $200,000.00 | $200,000.00 | $200,000.00 | $200,000.00 | $200,000.00 |
| Secondary ESInet (NRC) | $319,800.00 | | | | | |
| ICN Fiber Installs to remaining seven PSAPs | $1,803,600.00 | | | | | |
| Text to 911 TCS Emedia (Annually) | $517,500.00 | $517,500.00 | $517,500.00 | $517,500.00 | $517,500.00 | $517,500.00 |
| Text to 911 TCS Emedia (NRC) | $174,000.00 | | | | | |
| **Projected Future Network Expenses** | **$10,669,900.00** | **$3,739,166.67** | **$3,739,166.67** | **$3,739,166.67** | **$3,739,166.67** | **$3,739,166.67** |
| | | | | | | |
| **Starting Carryover Fund** | | 2016 Projection | 2017 Projection | 2018 Projection | 2019 Projection | 2020 Projection |
| **$21,045,807.00** | $11,010,907.00 | $7,906,740.33 | $5,362,573.66 | $2,818,406.99 | $274,240.32 | $0.00 |

# Attachment 3
# Iowa's Public Safety Answering Points
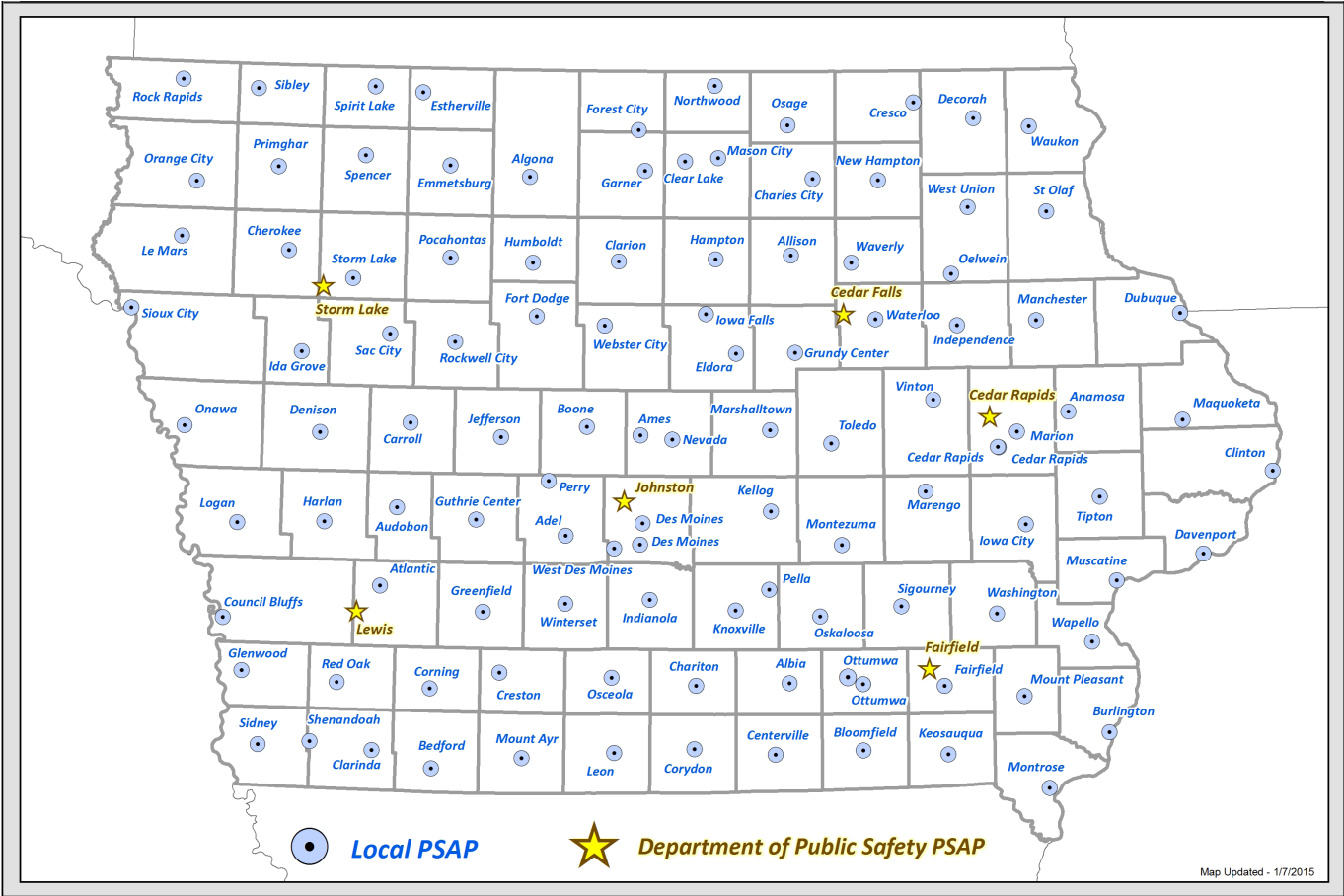
## Attachment 4

# Annual Wireless Call Volume and Cost Per Call

| County | Annual Number of Calls | Annual Payment | Yearly cost per call |
|---|---|---|---|
| Polk | 169,864 | $1,033,165.38 | $ 6.08 |
| Scott | 84,554 | $533,500.27 | $ 6.31 |
| Linn | 61,240 | $449,521.30 | $ 7.34 |
| Black Hawk | 40,485 | $307,810.80 | $ 7.60 |
| Johnson | 33,304 | $275,177.24 | $ 8.26 |
| Pottawattamie | 38,753 | $351,809.58 | $ 9.08 |
| Woodbury | 34,805 | $318,578.50 | $ 9.15 |
| Dubuque | 19,138 | $196,522.22 | $ 10.27 |
| Des Moines | 12,511 | $133,136.07 | $ 10.64 |
| Story | 15,640 | $175,284.85 | $ 11.21 |
| Muscatine | 10,770 | $126,470.32 | $ 11.74 |
| Wapello | 8,885 | $118,444.89 | $ 13.33 |
| Cerro Gordo | 10,795 | $148,688.29 | $ 13.77 |
| Clinton | 11,696 | $168,587.95 | $ 14.41 |
| Marshall | 9,518 | $137,399.84 | $ 14.44 |
| Warren | 9,077 | $134,976.27 | $ 14.87 |
| Lee | 8,436 | $126,538.86 | $ 15.00 |
| Jasper | 9,912 | $161,933.16 | $ 16.34 |
| Dallas | 7,893 | $135,191.82 | $ 17.13 |
| Webster | 8,218 | $150,637.01 | $ 18.33 |
| Public Safety | 1,144 | $22,358.52 | $ 19.54 |
| Mills | 3,732 | $86,797.51 | $ 23.26 |
| Cedar | 4,815 | $112,982.13 | $ 23.46 |
| Marion | 4,857 | $115,323.61 | $ 23.74 |
| Henry | 3,603 | $85,588.17 | $ 23.75 |
| Poweshiek | 4,608 | $112,151.35 | $ 24.34 |
| Bremer | 3,445 | $85,252.53 | $ 24.75 |
| Boone | 4,333 | $108,785.51 | $ 25.11 |
| Mahaska | 4,132 | $107,753.33 | $ 26.08 |
| Sioux | 5,330 | $141,847.66 | $ 26.61 |
| Dickinson | 2,817 | $76,319.30 | $ 27.09 |
| Iowa | 3,771 | $107,849.90 | $ 28.60 |
| Washington | 3,608 | $104,686.02 | $ 29.01 |

# Annual Wireless Call Volume and Cost Per Call

| County | Annual Number of Calls | Annual Payment | Yearly cost per call |
|---|---|---|---|
| Buchanan | 3,527 | $104,472.47 | $ 29.62 |
| Cass | 3,350 | $102,226.88 | $ 30.52 |
| Hamilton | 3,404 | $104,390.48 | $ 30.67 |
| Floyd | 2,913 | $91,134.41 | $ 31.29 |
| Jefferson | 2,498 | $79,478.43 | $ 31.82 |
| Harrison | 3,711 | $123,558.76 | $ 33.30 |
| Jones | 2,949 | $101,797.54 | $ 34.52 |
| Benton | 3,620 | $125,427.55 | $ 34.65 |
| Jackson | 3,251 | $113,724.57 | $ 34.98 |
| Tama | 3,524 | $125,452.33 | $ 35.60 |
| Worth | 1,942 | $71,604.06 | $ 36.87 |
| Buena Vista | 2,735 | $101,175.12 | $ 36.99 |
| Appanoose | 2,444 | $90,430.10 | $ 37.00 |
| Clay | 2,602 | $99,127.27 | $ 38.10 |
| O'Brien | 2,563 | $99,023.70 | $ 38.64 |
| Hardin | 2,574 | $102,749.16 | $ 39.92 |
| Fayette | 3,209 | $129,052.19 | $ 40.22 |
| Louisa | 1,777 | $72,892.35 | $ 41.02 |
| Carroll | 2,378 | $97,694.67 | $ 41.08 |
| Decatur | 2,011 | $90,535.77 | $ 45.02 |
| Franklin | 1,964 | $89,470.60 | $ 45.56 |
| Montgomery | 1,542 | $72,508.96 | $ 47.02 |
| Winnebago | 1,401 | $68,464.92 | $ 48.87 |
| Plymouth | 2,899 | $142,072.77 | $ 49.01 |
| Page | 1,908 | $94,105.99 | $ 49.32 |
| South Central Iowa Regional Board (includes Adair, Adams, Clarke, Guthrie, Madison, Taylor and Union counties) | 11,741 | $593,449.38 | $ 50.55 |
| Delaware | 1,856 | $96,139.84 | $ 51.80 |
| Crawford | 2,236 | $117,346.50 | $ 52.48 |
| Winneshiek | 2,142 | $113,387.35 | $ 52.94 |
| Wright | 1,795 | $96,234.78 | $ 53.61 |
| Clayton | 2,393 | $129,247.70 | $ 54.01 |

## Attachment 4 (continued)
# Annual Wireless Call Volume and Cost Per Call

| County | Annual Number of Calls | Annual Payment | Yearly cost per call |
|---|---|---|---|
| Emmet | 1,256 | $67,867.07 | $ 54.03 |
| Grundy | 1,495 | $83,229.92 | $ 55.67 |
| Lucas | 1,302 | $72,517.90 | $ 55.70 |
| Lyon | 1,704 | $96,406.23 | $ 56.58 |
| Fremont | 1,467 | $85,059.37 | $ 57.98 |
| Allamakee | 1,841 | $107,282.59 | $ 58.27 |
| Osceola | 1,140 | $66,693.70 | $ 58.50 |
| Monroe | 1,206 | $71,992.06 | $ 59.69 |
| Humboldt | 1,191 | $72,151.03 | $ 60.58 |
| Butler | 1,546 | $94,676.45 | $ 61.24 |
| Chickasaw | 1,343 | $82,930.96 | $ 61.75 |
| Hancock | 1,466 | $93,083.37 | $ 63.49 |
| Shelby | 1,467 | $95,657.88 | $ 65.21 |
| Cherokee | 1,409 | $93,316.30 | $ 66.23 |
| Ida | 1,060 | $70,908.35 | $ 66.89 |
| Howard | 1,126 | $77,174.72 | $ 68.54 |
| Monona | 1,500 | $111,001.27 | $ 74.00 |
| Greene | 1,201 | $91,325.19 | $ 76.04 |
| Keokuk | 1,173 | $92,418.88 | $ 78.79 |
| Calhoun | 1,147 | $91,174.97 | $ 79.49 |
| Van Buren | 949 | $78,509.88 | $ 82.73 |
| Sac | 1,082 | $91,719.49 | $ 84.77 |
| Palo Alto | 1,063 | $90,340.77 | $ 84.99 |
| Mitchell | 877 | $75,293.03 | $ 85.85 |
| Kossuth | 1,523 | $150,073.43 | $ 98.54 |
| Pocahontas | 903 | $90,791.35 | $ 100.54 |
| Wayne | 733 | $82,536.08 | $ 112.60 |
| Davis | 692 | $79,209.17 | $ 114.46 |
| Audubon | 495 | $69,396.57 | $ 140.20 |
| Ringgold | 583 | $83,355.44 | $ 142.98 |

# Attachment 5

# Revenues and Expenditures

| Revenues | 3rd Qtr 2014 | 2nd Qtr 2014 | 1st Qtr 2014 | 4th Qtr 2013 | |
|---|---|---|---|---|---|
| Surcharge Funds Received | $ 6,625,036.91 | $ 6,736,641.23 | $ 6,906,736.14 | $ 7,014,901.07 | $ 27,283,315.35 |
| Interest | $ 11,955.64 | $ 13,321.41 | $ 9,994.69 | $ 9,716.07 | $ 44,987.81 |
| **Total Revenues** | | | | | **$ 27,328,303.16** |
| | | | | | |
| **Expenditures** | | | | | |
| HSEMD Funding-used to administer 911 program, i.e. personnel costs, travel, supplies, equipment, Auditor fees for program audits | $ 62,500.00 | $ 62,500.00 | $ 62,500.00 | $ 62,500.00 | $ 250,000.00 |
| Wireless Service Providers-cost recovery for wireless Phase 1 services | $ 141,757.28 | $ 140,492.22 | $ 43,737.22 | $ 131,975.22 | $ 457,961.94 |
| Network and Selective Router-costs for ICN circuits, TCS contract, transport services, selective routing, and automatic location services | $ 557,842.58 | $ 609,022.99 | $ 596,917.36 | $ 622,396.73 | $ 2,386,179.66 |
| Carryover Fund Expenditures-future network and equipment upgrades and PSAP equipment upgrades | | | | | $ 4,054,381.94 |
| PSAP Distribution | $ 3,265,837.16 | $ 3,076,217.32 | $ 3,152,926.96 | $ 3,202,926.96 | $ 12,697,540.18 |
| **Total Expenditures** | | | | | **$ 19,846,063.72** |
| | | | | | |

## Attachment 6

# Cost Savings with Next Generation 911 System

| Wireless E911 Surcharge Expenditures | | |
| --- | --- | --- |
| | | |
| **Payment Types** | October 2010 | October 2014 |
| | | |
| Wireless Carrier Cost Recovery [1] | $   661,934.06 | $   141,757.28 |
| ALI, Routing and Transport [2] | $ 1,700,375.26 | $   557,842.58 |
| PSAP [3] | $ 1,066,231.70 | $ 3,265,837.16 |
| | **$ 3,428,541.02** | **$ 3,965,437.02** |
| | | |
| 1)  Costs are based on actual costs | | |
| 2)  Costs are based on actual costs. These numbers indicate a savings of $1,142,532.68 from October 2010 compared to October 2014 by migrating to an IP enabled Next Generation System provided by ICN | | |
| 3)  Pass through in 2010 was 25% of revenue, in 2014 it is 46% | | |
| | | |
| | | |