Kansas Statewide NG911 System: the technology and the cost

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Contents

1 Executive Summary

Why NG911. For more than 40 years, the current 9-1-1 system has served the nation's citizens during emergencies. Next Generation 9-1-1 ("NG911") uses the latest technology to move from this legacy 911 service to an emergency services NG911 System ("System") environment. NG911 will be faster, more resilient, and offer more functionality than 9-1-1. Kansas is committed to be among the first states to afford our citizens this new service. In fact, as shown in Figure 1, only about nine states lead us. More information on NG911 is contained in Section 6.

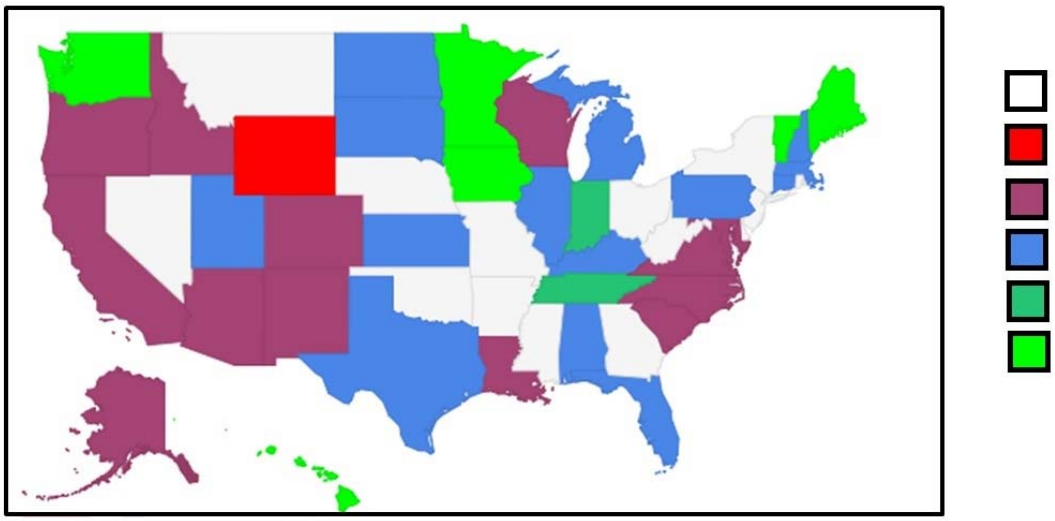

Figure 1 NG911 National Progress

Why Now. Now is the perfect time for Kansas to move from 9-1-1 service to the NG911 System for two reasons. The legacy infrastructure provided by Local Exchange Carriers is being phased out. Copper phones lines are rapidly being replaced with high-speed Internet Protocol (IP) networks. In addition, the legacy 911 equipment used by many of our PSAPs is either failing or has failed. Therefore, now is the optimum time to move from these "burning platforms" to an advance replacement system.

Why a Rate Increase. We need to increase the current 911 fee from a $0.53 rate to a $0.60 rate. This increase does two things simultaneously: (1) it helps pay for the new infrastructure that is replacing the legacy infrastructure, and (2) it sets aside funding to pay for new technology functionality as it becomes available over the next 2-4 years. Section 8 provides full details of why we need to increase our rate.

Fair and Affordable Funding. As our statewide Kansas NG911 is implemented, it is imperative that a viable cost recovery strategy exists. Our cost recovery model hinges on affordable and equitable cost sharing of common infrastructure by the Council and Public Safety Answering Points (PSAPs). The Council's Administrative Committee considered nine (9) different business models to arrive at the most cost effective strategic business model for the State. This fiscal plan adopted by the Council makes use of both 911 State Grant Funds and 911 Fee Funds for implementing and sustaining NG911. 911 State

Grant Funds are used to pay for non-recurring implementation costs. Local PSAP 911 Fee Funds pay for monthly recurring costs. The plan is cost effective for both the Council and the PSAPs:

- Council uses State Grant Funds to pay non-recurring costs for the Data Centers and PSAP networks; this incentivizes PSAPs to participate in NG911
- Council uses Fee Funds to pay monthly recurring costs for the core network
- PSAPs pay monthly recurring costs for their PSAP network and call handling services.

The five-year total sustaining cost of ownership[1] of the planned first steps is $25.8 million and will be paid with a combination of 911 State Grant Funds and PSAP 911 fund contributions in the form of an $18,000 per 911 workstation seat annual flat fee. This flat fee will generate reserve funds of approximately $1.4 million per year. These reserve funds will be used in concert with 911 State Grant Funds to pay for both the non-recurring and recurring costs of the NG911 i3 System as they are implemented on the Kansas statewide network over the next several years. Section 9 provides full details of our cost-sharing, cost recovery financial model.

Change from equipment ownership to a Solution as a Service solution. In the past, PSAPs purchased their 911 equipment and services from vendors. Generally, that required a significant initial capital investment with the purchase and the need for continuing expenditures to refresh 911 equipment. The NG911 system contracted by the Council is a Solution as a Service (SaaS) model in which all equipment, services, maintenance, and repairs are included in a flat monthly fee paid by PSAPs for their 911 call handling equipment which is owned by the vendor. The SaaS model provides for level and predictable expenditures by PSAPs over the term of the contract.

Cost Containment. By its very structure, our cost model encourages PSAPs to use 9-1-1 funding more effectively and efficiently than in our previous business model. Individual PSAPs may find that they will benefit financially by forming partnerships with a neighboring PSAP. For example, they may discover that by backing each other up during emergency situations, they can reduce their total seat count and reduce total operational cost. By revisiting the <u>way</u> we do public safety, as we improve <u>how</u> we do public safety, the overall cost of ownership is optimized for the State.

[1] Based on years one through five, with all 117 PSAPs, and all 348 answering positions on the system. Total maximum costs for years five through ten could total $37.7 million.

2 Introduction

After reviewing nine (9) financial models for funding our NG911 System, the Council decided on a cost-sharing, cost recovery financial model. This model provides the most cost effective and efficient method of migrating from our legacy E-911 environment to our NG911 System including:

- Data Center hosted 911 equipment serving all PSAPs
- Redundant IP-based networking connecting all PSAPs
- Call handling workstations for receiving 911 calls at the PSAP.

These initial components begin the migration to the NG911 platform with i3 services such as geospatial routing, text-to-911, picture and video messaging, added to the base System over time. A cost recovery plan that uses 911 State Grant funds and Local PSAP 911 Fee Funds finances our System. This document explains the various aspects of our strategy.

Our cost recovery model addresses both the implementation costs and sustaining costs associated with the System over the next five years.

3 Historical Perspective

3.1 Legacy E-911

Currently, the State of Kansas is served by 117 PSAPs that are independently operated by local units of government. These PSAPs use legacy, Centralized Automatic Message Accounting (CAMA) circuits to receive 911 calls. The CAMA circuits deliver voice and Automatic Number Identification (ANI) data. Automatic Location Information (ALI) circuits are used in conjunction with the ANI data to retrieve location information from an ALI database. The ALI data is delivered to the PSAPs with the call. The ALI data provides subscriber name, service address, the emergency response agencies associated with the location, and some other minor data. On wireless calls the ALI data initially delivered is associated with the tower site that the wireless device has accessed to complete the call. Through a rebid process the latitude and longitude of the wireless device's location is delivered to the PSAP. These coordinates are plotted onto a map display to provide location information for the wireless caller as shown in Figure 2.

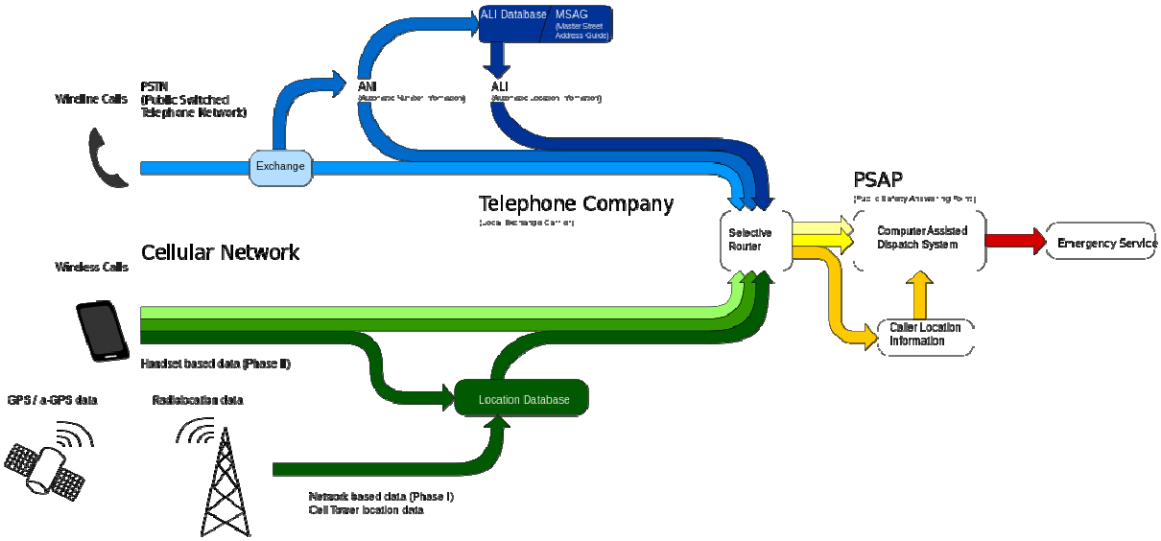

Figure 2 Enhanced 9-1-1 System (Wikipedia)

The CAMA and ALI circuits used in this legacy environment are all analog circuits. Due to the limitations of analog circuits, very limited data can be delivered with voice calls. In addition, existing and emerging digital communications protocols cannot be supported by legacy analog circuits.

The individual PSAPs are responsible for the cost of the 911 telephony equipment and maintenance, the CAMA and ALI circuit costs, and ALI database costs. These costs are normally covered with the use of 911 Fee Funds. The PSAPs are also responsible for personnel costs and additional equipment and maintenance such as administrative telephone systems, Computer Aided Dispatch (CAD) software, logging recorders, PSAP radio and radio infrastructure costs, and other similar costs. These additional costs are typically covered by a general fund budget, and in some cases and where allowable, with 911 Fee Funds.

3.2 911 Fees

Kansas 911 Act of 2011 (K.S.A. 12-5362 et. seq.) was enacted by the 2011 legislature and established a fixed fee designed to generate the same revenue as was previously realized under the wireline, wireless and VoIP fees. The "Act" currently sets a 911 fee of $0.53 per device capable of calling 911. The Act provides the ability for the Council to increase the fee, based on need, up to $0.60 per device. Additionally, the legislature sought to provide for a minimum of $50,000 annual funding per county, to reduce the need for grants to pay ongoing costs and to build surplus funds in the counties for future equipment replacement needs.

The purpose of the established 911 fee focuses first on 911 equipment and services:

- Implementation of 911 services
- Purchase of 911 equipment and upgrades

- Maintenance and license fees for 911 equipment
- Training of PSAP personnel
- Monthly recurring charges billed by service suppliers
- Installation, service establishment and non-recurring start-up charges billed by the service supplier
- Charges for capital improvements and equipment or other physical enhancements to the 911 system
- Original acquisition and installation of road signs designed to aid in the delivery of emergency service.

3.3 911 Coordinating Council

The Kansas 911 Act also created the 9-1-1 Coordinating Council ("Council"). The Council is made up of seventeen voting and nine (9) non-voting members. Their statutory duties are:

- Monitor the delivery of 911 services
- Develop strategies for future enhancements to the 911 system
- Distribute available grant funds to PSAPs
- Coordinate E-911 services and NG911 services for the State
- Implement statewide 9-1-1 planning
- Select the Local Collection Point Administrator (LCPA)
- Adopting rules and regulations necessary to effectuate the provisions of this act including but not limited to:
    - Create a uniform reporting form that designate how moneys, including 911 fees, are spent by the PSAPs
    - Require service providers to notify the Council of service provision
    - Set standards for coordinating and purchasing equipment
    - Recommend standards for training of PSAP personnel
    - Assess civil penalties for failure to comply with rules and regulations
    - Develop rules and regulations necessary for the distribution of moneys in the 911 federal grant fund
    - Lower the 911 fee, or raise the fee up to a maximum of $.60 depending on whether moneys generated by the fee are in excess of or below the costs required to operate PSAPs in the State.

3.4 State Grant Fund

The Kansas 911 Act created the State Grant Fund and defines the purposes for which its funds can be used. Funding for the State Grant Fund are derived from unobligated funds remaining from the Wireless Advisory Board Grant Fund, interest on funds deposited in the Grant Fund, pre-paid wireless fees up to $2 million, and moneys remaining after distribution of 911 Fee Funds and any moneys which cannot be attributed to a specific PSAP. Interest, pre-paid wireless fees and remaining 911 fee funds have historically amounted to approximately $2.1 million per year. Council-related expenses are covered from this fund, and may not exceed 2.5% of the total receipts from 911 fees imposed. These funds are also used to fund projects that benefit the State as a whole such as statewide aerial imagery and the GIS Enhancement Project. Statutorily, the grant funds may be used for:

- Projects involving the development and implementation of NG911 services
- Costs associated with PSAP consolidation or cost-sharing projects
- Expenses related to the 911 Coordinating Council
- Costs of audits.

4 Next Generation 9-1-1

The number of people using wireless communications devices has skyrocketed over the past 20 years. In 2012, 102.2% of the total populations of the United States (including Puerto Rico, Guam and the U.S. Virgin Islands) had an active wireless device[2]. Of the estimated 657,500 calls to 911 made each day, over 400,000 are made from wireless devices[3]. Many people have discontinued use of wireline phones, relying instead on wireless. In 2012, 35.8% of households in the United States were relying solely on wireless.[4]

The advent of wireless communications has resulted in new forms of communication coming into widespread use. There were over 171 billion Simple Message Service (SMS) text messages sent in the United States in 2012[5]. This does not account for multimedia text messaging and third party applications such as Snapchat, Skype Qik, Tango, Instagram, Vine, and many others. Because people have changed the ways in which they communicate, and because there is an expectation that they can communicate with 911 in the same manner that they communicate with others, it is imperative that 911 capabilities advance to accommodate these expectations.

The movement to digital communications technologies requires 911 to move from its current analog network to a highly redundant, secure, IP-based network technology. This network is referred to as an Emergency Services IP Network (ESInet). Additionally, a NG911-compliant call handling solution is required. The movement to NG911 will also dictate a change from the legacy selective router based call routing to geospatial call routing method that is based on a statewide GIS database. Additional, i3 services such as MMS messaging, telematics, and connection to third party databases for increased location information data will be added to the system as standards are developed and equipment manufacturers incorporate those standards into their equipment design.

5 Kansas NG911 System

One of the first steps in advancing to NG911 is the creation of an ESInet. Based on ESInet requirements, the Council issued a Request For Proposal (RFP) in June 6, 2014, for developing our NG911 infrastructure. This infrastructure system has four (4) primary components:

- Network Connectivity
- Data Centers
- Network Monitoring and Maintenance
- Statewide Call Handling as a Service.

[2] CTIA Wireless Industry Indices Report, May 2013
[3] *Ibid.*
[4] *Ibid.*
[5] *Ibid.*

The RFP closed in August 6, 2014. Six (6) vendors responded to the RFP.

The RFP responses were reviewed and evaluated by a 3-person Procurement Negotiating Committee (PNC) supported by an Advisory Team of 16 subject matter experts. After 6-months of intensive evaluation and over 50 review meetings, a contract was awarded on February 26, 2015, to AT&T as shown in Figure 3. The ESInet design will consist of a primary AT&T Virtual Private Network (AVPN); a wireless Commercial Connectivity Service (CCS) 4G-LTE connection is used for connectivity backup. Point-to-point T1 connectivity is offered as an optional backup solution.

Figure 3 NG911 Infrastructure Contract Signing

Due to the nature of the NG911, it is most cost effective and performance efficient if a central network infrastructure and its components are distributed among our PSAPs. With this in mind, the Council pursued a hosted call handling solution that allows the PSAPs to share the backroom equipment of the telephony, rather than each PSAP purchasing equipment for their individual use. This solution as a service strategy is far more cost effective. Assuming an average cost of $150,000 per PSAP for backroom and call handling equipment, and $4,000 annual maintenance cost for that equipment, the 5-year Total Cost of Ownership (TCO) of this equipment amounts to $19,890,000 for the 117 PSAPs in the State. In contrast, with the use of the hosted solution (backroom and call handling equipment) is only $10,418,240 TCO for the 117 PSAPs.

The NG911 System provides additional efficiencies at an operational level. The design of the System allows a call taker to log on at any workstation within the System as if they were in their home PSAP. This exceptional ability provides the opportunity to cost share backup workstations, share call handling responsibilities, and makes continuity of operations planning much easier and less costly. PSAP consolidation or collocation is simplified technologically, should PSAPs decide to move in that direction.

The AT&T solution provides two geo-diverse, hosted VESTA-4 call processing systems. PSAPs access these hosts through Vesta workstations, connected to the host through primary and backup IP circuits. The host platforms will be housed in Data Centers in Topeka and Wichita. Each PSAP will have, at a minimum, the following 9-1-1 hardware, features and software, as their basic equipment package:

- Airbus DS Vesta call handling positions with the most recently approved software and hardware
- 22” Monitor
- Instant Recall Recorder (IRR)
- Three (3) CAD spills
- Local administration line gateway (4 line)
- Sound Arbitration Module (SAM) audio device
- Genovation keypad
- Network printer
- Single power supply network router(s) and switch(es)
- Workstation and backroom Uninterrupted Power Supply (UPS) system(s)

- 24x7 managed services monitoring of the Customer Premise Equipment (CPE)
- Project management services for the duration of the agreement
- Full installation, testing and maintenance of equipment hardware and software
- Comprehensive training of functionality of all furnished equipment
- Emergency Call-Tracking System (ECaTS) Management Information System (MIS) reporting
- Service Management services for the duration of the agreement
- Vesta Locate Mapping with 22" Monitor.

In addition, the PSAP may chose a number of special options to supplement their basic equipment package:

- Automatic Call Distribution (ACD)
- PSAP call display wall board
- Dual power supply routers
- Redundant VPN circuits
- Circuits having increased bandwidth.

Analog CAMA 9-1-1 trunks, as well as future IP 9-1-1 "trunks" for the State of Kansas, will be terminated to the Host VESTA systems in the two Data Centers and then routed to the appropriate agency via the VESTA system. Administrative lines will remain local to each agency, terminated on local gateways with calls remaining local to the specific agency.

Upon initiation of the implementation phase of our NG911 System, a request will be made to the wireless service providers in the state for text-to-911 service. This will allow the wireless service providers to plan and implement the availability of this initial i3 service. Once a PSAP is brought live on the system, a request to implement text-to-911 for that PSAP will be made. This plan ensures that text-to-911 is implemented nearly coincidentally with a PSAP coming live on the system.

Geospatial routing will be added to the system beginning late in year two of the project with implementation expected in year three. Once geospatial routing is fully implemented, the CAMA and ALI trunks will be eliminated from the system. Additional i3 services such as MMS messaging, telematics, and other services, will be added to the system as the standards for the services are established and incorporated into system design by Airbus DS (formerly, Cassidian).

The implementation plan anticipates that 29 PSAPs will be brought onto the system in the first year, 2015, with approximately the same number being added in years two through four. We are attempting to expedite the delivery for the solution to PSAPs as rapidly as possible. PSAPs that currently have unsupported legacy call-handling CPE will be given priority in the implementation schedule.

6 Increase of 911 Fee

Table 1 shows the impact of the flat fee per 911 workstation and average annual expenditures for PSAPs of various sizes on 911 fund balances at the current 911 fee of $0.53 and at an increased 911 fee of $0.60. The flat fee for each 911 telephony workstation will result in a change in the amount of local 911 funds available for purposes outside of 911 telephony, such as for logging recorders. PSAPs will need to find additional funding for such other equipment needs even with the $0.60 rate increase.

Table 1 Impact of Flat Fee and Average Expenditures on 911 Fee Balances

# Seats	Flat Fee @ $18,000	Avg. Total Expenditures	Total Annual Expenditures	Balance of 911 Funds @ 53¢	Balance of 911 Funds @ 60¢
1	$18,000	$18,452	$36,452	$13,656	$13,948
2	$36,000	$53,307	$89,307	($29,404)	($25,647)
3	$54,000	$113,241	$167,241	($49,209)	($38,264)
4	$72,000	$153,419	$225,419	($24,124)	($5,044)
5	$90,000	$184,654	$274,654	($76,541)	$22,270
6	$108,000	$235,107	$343,107	($35,450)	$752
10	$180,000	$893,787	$1,073,787	$75,539	$253,999
19*	$378,000	$1,328,558	$1,670,558	$135,953	$339,961
*Average of 12 – 24 Seat PSAPs					

The Council is recommending that PSAPs explore cost sharing possibilities with other PSAPs within their region. Example of cost sharing might be common overflow and backup workstation seats and also the replacement of those seats with enhanced IP telephone sets. These IP telephone sets enable a call taker to answer 911 calls and receive location information via an LCD display on the phone and are considerably less expensive than full workstations.

Based on this impact, the Council recommends that the 911 fee to be raised to $0.60 to provide sufficient additional funding for PSAPs to participate in the Statewide NG911 System. Increasing the 911 fee to $0.60 per device is expected to generate approximately $2.5 million in additional revenue. Of this additional revenue, approximately $631,000 would be paid into the State Grant Fund.

7 Cost Recovery Plan

The NG911 System has two primary networks: the core network and the PSAP network. The core network is comprised of the Data Centers, the network connectivity between them, and the host call handling equipment. The PSAP network is comprised of the 911 call handling workstations and the network connectivity between them and the host. These two networks have both Non-Recurring Costs (NRC) and Monthly Recurring Costs (MRC).

The Administrative Committee of the Council reviewed nine (9) cost recovery financial models. In evaluating the alternatives, the Committee reached the conclusion that the following objectives should be met by the adopted cost recovery plan:

1. Plan must to be cost effective for both the Council and PSAPs
2. Council should use 911 State Grant Funds to pay the NRC for the Data Center and PSAP networks in order to incentivize PSAPs to participate
3. Council should use 911 State Grant Funds to pay MRC for the core network
4. PSAPs should pay the MRC for PSAP network/call handling
5. Increase the 911 Fee to 60¢ to offset additional costs of the new System to PSAPs.

The cost recovery plan adopted by the Council meets all of these objectives. Under this plan, the Council will cover all costs for both the core network and the PSAP network. The Council will recover the recurring costs of the PSAP network through an annual per call-taking position charge of $18,000 per seat. The PSAPs will remain responsible for the cost of CAMA and ALI circuits, as they are today, until such time as geospatial routing is fully implemented. PSAPs will be responsible for any charges, both non-recurring and recurring, for any optional equipment or service added to the base package as defined in Section 7.

The nonrecurring costs and recurring costs for the core network will be paid from the 911 State Grant Fund. This fund has a balance of $ 17,106,849 as of March 12, 2015. Annual revenues added to the 911 State Grant Fund are approximately $2.1 million. Total non-recurring costs for the complete system amount to $8,051,540.00 and recurring costs for the core network are $766,146 annually. Additional expenses to be paid from the 911 State Grant Fund are:

- Council operating budget
- DASC Services contract
- Statewide Orthoimagery contract
- GIS Enhancement Project contracts
- Consulting Services contract
- Program Management contract

For FY2015, these additional costs amount to $3,612,571. However, these costs will reduce by nearly half in FY2016 with the completion of the GIS Enhancement Project. The 911 State Grant Fund will cover all non-recurring costs and recurring costs of the core network during the 10-year life of the infrastructure contract. The evaluation of the sufficiency of the grant fund assumes a 3% annual increase in additional expenses for the Council from 2016 forward. The evaluation also anticipates that 911 State Grant Fund revenue will remain stable, as historically it has, over the past three (3) years. The planned 911 fee increase is projected to increase revenues for the State Grant Fund from the current $2.1 million to $2.7 million per year. The plan will result in a reduction in the 911 Grant Fund balance to approximately $6.6 million by the end of the 10-year contract period.

Total Costs for all PSAPs, based on the current number of total seats (348), are summarized in Table 2.

	Actual Total NRC	***Annualized Total MRC***	***Flat Rate of $18,000***	***Reserve Funds Generated***
Totals	***$6,918,240***	***$4,858,652***	***$6,264,000***	***$1,405,348***

Table 2- Total Cost Estimates

The reserve funds generated will be set aside to pay non-recurring costs of geospatial routing when added to the system, and will sustain the recurring costs going forward. This will allow the Council to add this i3 service at no additional cost to the PSAPs. AT&T has estimated the cost to add geospatial routing at between roughly $1.5 and $3 million dollars (recurring and non-recurring charges).

The system will provide three CAD spills in an RS-232 serial format for integration with CAD, voice recorders, radio systems, etc. Additionally, an application programming interface will be shared with

CAD vendors that will allow an enhanced level of CAD integration as migration to i3 is completed. Any costs associated with integration of the Vesta-4 call handling equipment to CAD or other systems will be the responsibility of the PSAP.

8 Invoice and Billing

Two alternatives of vendor billing were considered. The first alternative had AT&T billing the PSAPs directly for connectivity and call-handling equipment. The second alternative had AT&T billing the Council for all connectivity and call-handling costs. The second alternative, having AT&T bill the Council, is superior.

The first alternative, having AT&T directly bill the PSAPs for connectivity and call-handling equipment, has several drawbacks of which the most significant being reduced visibility into the overall system billing. This could result in duplicate charges or incorrect charges going unnoticed. Additionally, this alternative of invoicing would eliminate the generation of the reserve funds for implementation and sustainment of geospatial routing. PSAPs would also have time investment in reviewing and processing monthly invoices from AT&T and annual or quarterly invoices from the Council.

The second alternative, having AT&T bill the Council for all connectivity and call-handling costs, is superior because all of the drawbacks of individual PSAP invoicing are eliminated. The only disadvantage to this alternative is the potential for additional staffing needed at the Local Collection Point Administrator (LCPA).

PSAPs will be invoiced for their fair-share costs on an annual or quarterly basis, depending on the desire of the PSAP. The PSAP will be asked to choose their invoicing preference as a part of the site survey conducted at the beginning of the implementation process. The invoice will show the cost of the base package seats and any optional equipment or services elected by the PSAP. Annual invoices will be mailed to the PSAPs during the first week of January. Quarterly invoices will be mailed the first week of January, April, July, and October. All invoices will be payable within 30 days of receipt. Invoices will be created by the NG911 Administrator and forwarded to the LCPA for printing and mailing.

9 Expectations of PSAPs

A Memorandum of understanding (MOU) will be executed between the Council and any PSAP electing to subscribe to the NG911 System prior to ordering of related hardware, software, and connectivity. The MOU establishes the expectations of the Council for the PSAPs, and the responsibilities of the Council to the PSAPs. The MOU addresses:

- Acceptance of basic package pricing for the number of seats desired by the PSAP
- Identification optional equipment and/or services selected by the PSAP and acceptance of the associated recurring and non-recurring costs
- Requirement for compliance with the NG911 Governance Plan including underlying Policies (GIS, Operations, Administration and Infrastructure Technology)
- Requirement for participation in initial and on-going training related to system components such as Vesta call-handling equipment, ECaTS MIS, Orion Vela mapping equipment and any other
- Acknowledgement that support or replacement of PSAP equipment that is altered, modified, mishandled, destroyed or damaged by natural causes, or damaged due to a negligent or willful

act or omission by PSAP personnel or at the PSAPs direction, or use by the PSAP other than as specified in the applicable AT&T-supplied documentation is not covered by maintenance agreement and will be the responsibility of the PSAP

- Appoint a primary Local Customer Site Contact (LCON) and a secondary LCON
- Acceptance of the consequences of failure to comply with any of these requirements such as failure to pay invoices.

9.1 Local Customer Site Contact

The primary and secondary LCONs will perform the following duties:

- Provide building owner permission(s) necessary for any modifications required to support the solution especially for an historic site.
- Provide a minimum of twenty-one (21) business day notice for rescheduling equipment installations; cancellation or rescheduling with less than twenty one (21) business day notice may be subject PSAP to additional charges.
- Provide an adequate secured storage area on customer site for PSAP equipment for the duration of the PSAP equipment installation effort.
- Responsibility for connecting and configuring any customer-provided equipment that requires a CAD spill. It is the responsibility of the customer's vendors (CAD / Voice Recorder / Radio...) to terminate the CAD spill to their equipment and make any necessary configurations to the vendor's CPE.
- Provide a locally assessable #6 ground wire connection to terminate to the 9-1-1 equipment and rack.
- Provide a minimum of a 4x4 fire-retardant plywood backboard for equipment mounting if one is not already available.
- Provide a signature sign-off as concurrence of site completion.
- Provide a list of users, security levels and access privileges as needed for equipment configurations.
- Define the system administration, security policies and any other special requirements to be implemented in the Equipment. These parameters will be defined in consultation with the NG911 Administrator or his designee and appropriate AT&T personnel.
- Ensure that proper environmental conditions specified by product manufacturer are in place. This includes but is not limited to adequate power and grounding. AT&T will not proceed with the equipment installation until PSAP has made all modifications and changes required to protect the integrity of the equipment.
- Facilitate the interface of existing PSAP equipment or third party vendors during installation and test of the infrastructure to make any network changes required and/or to make the equipment and services operational. For example, PSAP shall engage Voice Recorder, CAD or Radio vendor as needed during NG911 implementation. Costs associated with such engagements are the responsibility of the PSAP.
- Assume sole responsibility, unless otherwise stated, for any reprogramming, licensing or configuration necessary to existing CPE not provided by AT&T such as legacy telephony systems as necessary to implement NG911.

- Assume sole responsibility for all existing data files and/or file structures, their storage, backup, and items such as PSAP-provided map data or others systems that are outside the AT&T-provided infrastructure.
- Provide for POTS lines for each managed router; this is in addition to the currently provided Abandoned Call Back line.

The LCONs must satisfy the following criteria:

- Familiarity with the location where service has been requested.
- Familiarity with the Access Provider's Minimum Point of Entry (MPoE) or Telco Demarcation.
- Have decision making authorization to address the service requirements requested.
- Have the authority to confirm the Room Ready Date (RRD) for all requirements that are the responsibility of the PSAP.
- Be present on site for the site visit and be prepared to discuss and address all site requirements with the AT&T or other Access Provider Engineering Representative and Council personnel.
- For multi-tenant buildings, the LCON is responsible to negotiate establishment of fiber MPoE or telco demarcation with building property owner. Note: fiber demarcation point may or may not be collocated with existing copper facilities.
- Disclosure of any of the following prior to the start of the project:
    - Building access information such as parking, unloading zones, elevators and route to work area
    - Any noise or time restrictions
    - Any asbestos or hazardous materials present in the work area.
- Provide a safe work environment.
- Ensure that all PSAP requirements have been met or will be completed by the agreed-to date.
- Have appropriate staff designated to test and accept service.
- Communicate successful testing and acceptance to the NG911 Administrator. Acceptance shall be based on the following criteria:
    - **Reliability**. The quality and reliability of the system has reached a level of stability such that the new 9-1-1 system has been cut over and has been in constant use as the primary source of 9-1-1 call processing for 48 consecutive hours without malfunctions with Network Failover tested. Malfunctions shall be defined as any feature, network element, or other problem that affects processing of 9-1-1 calls. Malfunctions will be mutually agreed upon between the Council and AT&T.
    - **Features**. The system is providing all features and capabilities required of the RFP, and associated executed contract.
    - **Transmission Levels**. The quality and level of transmission will be consistent with published specifications of the system.
    - **Equipment Installation and Grounding**. All wiring, grounding, and interface equipment installation has been completed, and is in accordance with industry standards.
    - **Training**. The training program for PSAP call takers, supervisors, and system administrators has been satisfactorily completed with the PSAP Personnel.
    - **Documentation**. User documentation is completed and on file with the PSAP.

- **Service Call Procedures**. Procedures have been established, and understood by the PSAP for the receipt and dispatch of AT&T service specific technicians.
- **Cleanup**. AT&T has cleaned the work area.

10 Conclusions and Recommendation

The Council has developed a strategy to transition the state of Kansas from legacy E-911 service to statewide NG911 in the most cost effective and efficient method available. Implementation of the strategy will begin with the development of an IP network and installation of a hosted call handling system. After the NG911 infrastructure is installed and turned up, the Council will authorize the implementation of text-to-911 in a next generation manner, and begin the transition to i3 geospatial routing. In support of the geospatial routing, the Council has already implemented a GIS Enhancement Project.

The 5-year total cost of ownership of the NG911 first steps is $25.8 million. The system will be paid for with a combination of 911 State Grant Funds and PSAP 911 funds in the form of an $18,000 per seat annual flat fee. This flat fee will generate reserve funds of approximately $1.4 million per year. These reserve funds will be used in concert with 911 State Grant Funds to cover non-recurring and recurring costs of i3 services as they are implemented on the network. PSAPs will be invoiced either annually or quarterly for the flat fee, at their discretion. PSAPs will be encouraged cost share with neighboring PSAPs and consider the use of half-positions to reduce overall cost to the PSAP. To partially offset the increased costs of the network, the Council will increase the 911 fee to $0.60 per device capable of accessing 911.

PSAPs will be expected to enter into a MOU as a prerequisite to participating in the statewide system. The MOU will cover the responsibilities and expectations of both the PSAPs and the Council.