King County Auditor's Office
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King County 911 System: Governance Structure and Plan Needed to Move Forward

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Executive Summary

King County has been an early leader in updating and enhancing its 911 system. However, it has moved forward without a clear plan and it lacks an effective governance structure that includes emergency dispatch centers. These issues, along with the added costs to implement newer technology, have resulted in strained relationships and lack of agreement on a path forward. We recommend King County temporarily suspend work on Next Generation 911 until these governance and planning issues are resolved and a financial plan can be developed.

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King County 911 System: Governance Structure and Plan Needed to Move Forward

Report Highlights

June 23, 2015

Why This Audit Is Important

King County's Enhanced 911 (E911) system provides emergency dispatch services to more than two million county residents. Telephone customers pay the more than $20 million cost for the system from monthly excise taxes. Personnel in the King County Enhanced 911 Program Office and 12 emergency dispatch centers – called Public Safety Answering Points (PSAPs) – manage and operate the system. King County and its PSAP partners are in the process of implementing Next Generation 911, a national initiative aimed at modernizing and improving the capabilities of the 911 system. The King County Council included a proviso in its 2015-2016 budget for the Auditor's Office to conduct a financial and technical audit of King County's 911 system.

What We Found

King County has been a national leader in updating and enhancing its 911 system. However, it anticipates the program will run out of money within the next three years and it faces a number of other challenges in its current efforts to implement Next Generation 911 services. The lack of an effective governance structure that includes King County and its PSAP partners is the most serious of these challenges. Because of this, while solutions exist for many of the financial and technical challenges that we identify in our report, there is currently no formal means for King County and its partners to make decisions. We also found that King County has not consistently followed its own guidelines and process for managing information technology projects.

What We Recommend

We recommend that King County temporarily suspend its implementation of Next Generation 911 until this governance issue can be resolved. In addition, we make recommendations to help King County and its partners move forward with implementation of Next Generation 911. Our recommendations focus on improving collaboration and planning as well as establishing a financial baseline that would allow stakeholders to agree on required spending and estimated revenue for the program.

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1. Program Faces Financial and Planning Challenges

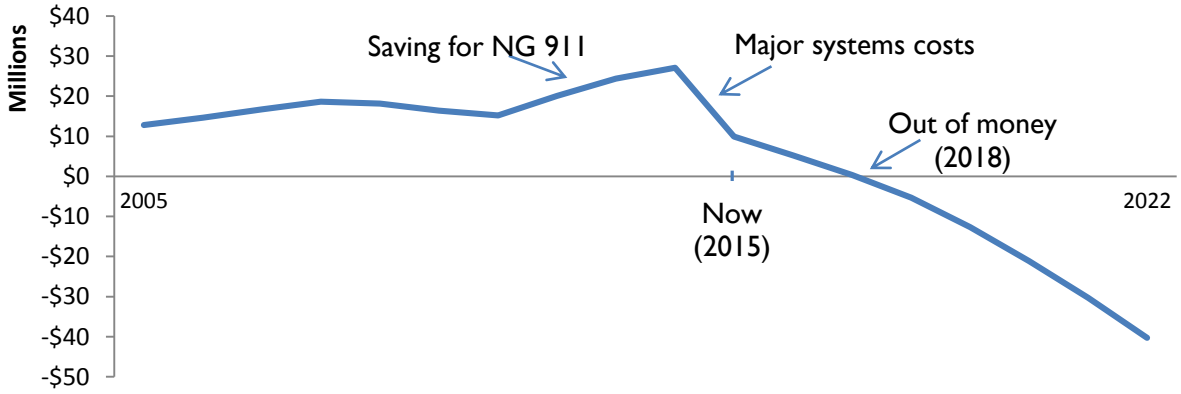
Section Summary

While King County has been an early leader in pursuing Next Generation 911 (NG 911) technology, it faces potential financial challenges that will require suspending implementation to establish a governance structure and detailed implementation plan.[1] The King County Enhanced 911 (E911) Program Office's financial plan indicates that it will run out of money by the end of 2018. There are several ways to modify or eliminate the unfunded expenditures projected to precipitate this financial crisis. However, the County lacks a decision-making structure that balances its responsibilities with the concerns of the 12 independent Public Safety Answering Point (PSAP) agencies. In addition, forward progress depends upon an agreed-upon financial baseline and detailed NG 911 implementation plan.

If it does not make changes, the E911 program will run out of money soon

Our financial consultant found that the E911 program will run out of money by 2018 if it does not make changes in planned spending.[2] Although revenues increased with the increase in telephone user fees in 2011, the E911 Program Office financial plan shows a negative fund balance in 2018.[3] The E911 Program Office has been aware of this financial challenge since 2011. The two main factors driving the balance negative are expenses related to NG 911 and high and rising levels of PSAP support. Exhibit A shows the E911 actual and planned fund balance between 2005 and 2022, and how the current approach to 911 spending is unsustainable.

Exhibit A: Planned unfunded expenditures would push E911 fund balance to zero by 2018



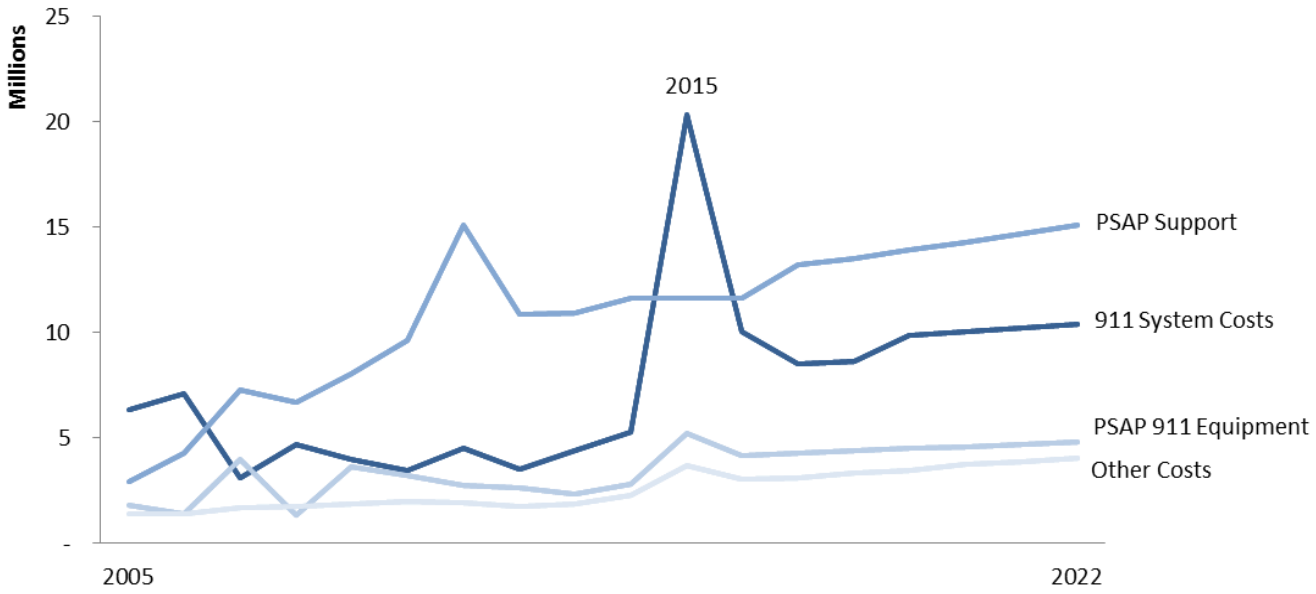
Source: King County Auditor's Office visualization of Miller & Miller analysis of E911 program ending fund balances using actual and projected financial data (not adjusted for inflation).

[1] Next Generation 911 (NG 911) refers to an initiative aimed at modernizing the 911 service infrastructure in the United States and Canada to improve public emergency communications services in a wireless mobile society. In addition to calling 911 from a phone, it intends to enable the public to transmit text, images, video, and data to 911 centers (referred to as Public Safety Answering Points, or PSAPs).
[2] Two consultants provided financial and technical expertise to this audit: Miller & Miller conducted the financial review, and Mission Critical Partners conducted the technical review.
[3] Under the current state law, cell phone, wireline, and Voice over Internet Protocol users pay $.95 per month in 911 excise taxes; $.70 goes to the counties and the remaining $.25 goes to the state of Washington.

1. Program Faces Financial and Planning Challenges

While some costs are one-time expenses, both the system costs for the E911 network and database and PSAP support costs, such as revenue distribution and on-location technical staff, continue to increase, as shown in Exhibit B. Spending peaked in 2015 with the hardware and network expenses needed to upgrade the system for NG 911.

Exhibit B: 911 system costs and PSAP support are the E911 program's major expenditures



Source: King County Auditor's Office visualization of E911 program actual and projected financial data (not adjusted for inflation).

It is important to note that while the effort to modernize 911 services is a national expectation, timing and service standards have not yet been finalized by the Federal Communications Commission. In addition, the level of PSAP support is discretionary and determined by the E911 Program Office. Revenue sharing is allowable under the King County Enhanced 911 Participation Agreement, but it is the lowest priority expense listed. In 2014, PSAP support accounted for over half of E911 expenditures.

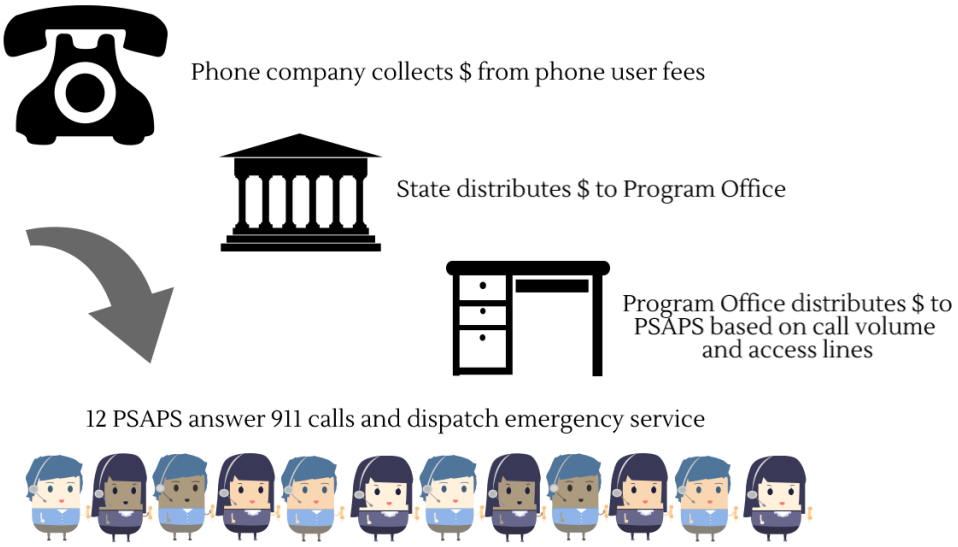
In 2013, the E911 Program Office and PSAP stakeholders convened a process to identify solutions to the impending financial crisis. They brainstormed some options, but lacked a functional decision-making process to move forward. We will discuss some options for addressing the financial challenges below.

1. Program Faces Financial and Planning Challenges

To move forward, the E911 program needs a functional governance structure

The current informal governance system used by the E911 Program Office to get feedback and provide information to the PSAPs is not working well. Under Washington state law, counties are given the primary responsibility for managing the 911 systems in their jurisdictions. In King County, the E911 Program Office coordinates and manages 911 services, while the 12 PSAPs answer 911 calls and dispatch emergency service as shown in Exhibit C.

Exhibit C: E911 Program Office supports PSAPs through distribution of excise taxes



Source: King County Auditor's Office

The current 911 system operation and the implementation of NG 911 requires a great deal of coordination and cooperation between the E911 Program Office and the PSAPs, however, there is not a formal structure for collaboration and decision-making. In a proviso in its 2015-2016 budget, the King County Council mandated the creation of a Regional PSAP Oversight Committee, which could be the basis for an ongoing governance structure. In addition, there are other examples of potential governance structures from public safety-related King County programs as shown in Exhibit D.

1. Program Faces Financial and Planning Challenges

While the current PSAP Director's Group provides a forum for discussing issues and disseminating information, it lacks a formal structure delineating which decisions should be made by King County and which require input from PSAPs and other stakeholders. This structure is especially important with the implementation of NG 911, as many of the decisions made about how and in what sequence to take the steps necessary to get to NG 911 will have a considerable impact on the PSAPs and how they conduct their day to day operations.

During interviews with both the Auditor's Office and our technical consultant, Mission Critical Partners (MCP), many of the PSAPs expressed frustration at the lack of input they had in both the selections and sequencing of projects that the E911 Program Office chose to pursue. They indicated that they were not always notified of the decisions that the E911 Program Office had made that impacted them and in cases where they did provide input, they did not think that their input was adequately considered. One consequence of this lack of formal governance system is that the formerly strong relationship between the E911 Program Office and PSAPs has, in some cases, deteriorated to the point that it has been difficult to work together on issues, such as implementing interim text-to-911 and broadening the use of Smart911 around King County.[4]

There are a number of governance models that have been effective in similar situations

There are a number of examples of effective regional governance organizations in King County that could serve as a model for the E911 system. King County and its regional partners work together to provide a number of public safety related services across the county. The governance bodies that are used to administer and provide oversight to these systems provide examples that can be used in creating a governance organization for the E911 system. Another potential governance system could be the Regional PSAP Oversight Committee mandated in a proviso in the 2015-2016 budget. While the County Executive has until July 1, 2015 to transmit an ordinance to the County Council to establish this committee, its membership is outlined in the proviso.

[4] Smart911 is an online database where citizens can provide information about their family or dwellings that can enhance emergency communication and response.

1. Program Faces Financial and Planning Challenges

Exhibit D: King County has several examples of regional public safety governance systems

System	Governing Body	Membership	Voting Authority
Regional Automated Fingerprint Identification System (AFIS)	Advisory Committee	• Bellevue Police Department • City of Issaquah • City of Seattle Budget Office • Federal Way Police Department • King County Council • King County Budget Office • King County Sheriff's Office • Kirkland Police Department • Seattle Police Department • South County Regional Jail	Each member has equal voting authority
Regional Emergency Management Radio System	Regional Communications Board	• King County • City of Seattle • Eastside Public Safety Communications Agency • Valley Communications[5]	Each member has equal voting authority
E911 System	Proposed Regional PSAP Oversight Committee	• Chair of the County Council • Vice Chair of Regional Coordination of the Council • Chair of the Law, Justice, and Emergency Management Committee • County Executive or designee • City of Seattle elected official appointed by the Mayor • Three elected officials from other jurisdictions appointed by the County Council • Representative of the Sound Cities Association • Representative of a public safety agency, appointed by the County Council • Nonvoting technical and facilitation consultant selected by the County Executive	To be determined

Source: King County Auditor's Office

[5]The Eastside Public Safety Communications Agency was established by the cities of Bellevue, Redmond, Kirkland, Mercer Island, and Issaquah to provide emergency radio service. Valley Communications is an agency consisting of the cities of Auburn, Federal Way, Kent, Renton, and Tukwila.

1. Program Faces Financial and Planning Challenges

Recommendation 1

The County Executive should create a governance mechanism that builds on the County Council-directed strategic planning group. This group should balance King County's statutory responsibilities under Washington state law, with providing a formal, clear, and transparent mechanism for the Public Safety Answering Points and other regional partners to participate in the decision-making process.

To resolve financial challenges, stakeholders must agree on a baseline budget

King County and the E911 stakeholders must agree on a baseline budget upon which to evaluate proposed solutions to the financial challenges facing the system. Our financial consultant verified that the historical financial data the E911 Program Office reported in the last ten years is accurate. Nonetheless, financial planning depends on an agreed-upon baseline of required costs and anticipated revenues. This baseline will provide a solid foundation for analyzing the implications of various options to address the financial challenges facing the 911 system.

Clear and accurate communication between the E911 Program Office and stakeholders is critical to developing and maintaining a functional financial relationship. King County's E911 stakeholders have expressed confusion about the system's finances. PSAP leaders have expressed frustration that they are not clear about what money is being spent on, which expenses are required, and which are discretionary. Further, they perceive that numbers have changed repeatedly without adequate explanation. Some of this confusion may stem from the lack of documented project management practices, as explored below.

In 2013, E911 stakeholders convened a committee to recommend options for how to address the potential unfunded expenditures. Although the committee did not finalize any recommendations, it did brainstorm some options. Our consultant's analysis of the quantifiable and feasible options found that reducing PSAP support costs has the greatest potential to reduce the projected deficit, but the magnitude of the needed reductions is dependent on developing a better estimate of the costs of implementing NG 911. For detailed information on the analysis of options to reduce the deficit, please see Appendix 1.

Recommendation 2

The Enhanced 911 Program Office should collaborate with stakeholders to agree on a financial baseline of required spending and estimated revenues. It should implement a systematic and documented process to regularly update the baseline as elements change, and communicate updates with stakeholders.

1. Program Faces Financial and Planning Challenges

Lack of a plan hinders implementation of Next Generation 911

The King County E911 Program Office initiated implementation of NG 911 without a clear and detailed plan. While King County has been at the forefront of NG 911 technology with its participation in national and state level work groups, it faces both financial and technical challenges to effectively implement NG 911. These challenges, in part, are the result of the lack of a clear and detailed NG 911 implementation plan. Because many of the details and requirements surrounding NG 911 are still being determined at the state and federal level, King County could suspend efforts to implement NG 911 without negative effect until it has developed an implementation plan that includes timelines, accountability, a collaborative requirements-gathering process, and a financial plan.

Planning is an essential step for implementing complex projects

The implementation of NG 911 is a complex multi-year process that will impact both the E911 Program Office and the 12 PSAPs. While increasing the capabilities of the 911 system, NG 911 is also expected to increase overall costs. Lack of planning and coordination was one of the primary issues that some PSAPs raised regarding their relationship with the E911 Program Office. They also questioned the utility of some of the projects that the E911 Program Office implemented. These issues could be mitigated through effective planning.

The importance of adequate planning is magnified because of the complex nature of implementing NG 911, which involves more than a dozen different stakeholders and a system that is essential for public safety. The Project Management Body of Knowledge, or PMBOK, defines the planning process as "those processes performed to establish the total scope of the effort, define and refine objectives, and develop the course of action required to attain those objectives."[6] These processes are important because they clearly define and outline what the project is trying to achieve, define and sequence activities necessary to achieve project objectives, estimate the resources necessary to complete project, define the project schedule, and identify risks and risk mitigation strategies.

Temporarily suspending implementation will not undermine King County's

King County should suspend implementation of NG 911 until it creates a clear and detailed NG 911 implementation plan. The details and requirements of NG 911 are still being determined at both the state and federal level. Therefore, slowing down implementation will not have negative consequences. Instead, delaying implementation will allow the vendors that King County's system relies on for 911 services and equipment

[6]PMBOK Fifth Edition. The PMBOK is a widely acknowledged and internationally recognized standard that details the application of knowledge, skills, tools, and techniques to meet project requirements.

compliance with federal and state requirements

to modernize and update their services and products to meet the emerging standards. For example, security has been a key challenge King County has faced in upgrading its 911 system. Many of the vendors of 911 services and equipment have not yet adequately addressed the security concerns raised by both the E911 Program Office and the PSAPs. Temporarily suspending NG 911 implementation efforts could give these vendors time to address security concerns.

Two efforts are nearly complete or required and should therefore continue. Two efforts currently underway, interim text-to-911 and compliance with Priority One Washington State mandatory security requirements should continue because they are either nearly complete or are required to receive state funding.

Recommendation 3

The Enhanced 911 Program Office should suspend projects intended to support or implement Next Generation 911 until it has created a Next Generation 911 implementation plan and vetted this plan with stakeholders.

2. KCIT Oversight of E911 Technology Projects

Section Summary

Submitting E911 technology projects to King County Information Technology's Project Review Board could mitigate challenges with planning and implementation. The Project Review Board (PRB) oversees all of the technology projects in King County. For agencies, the benefits of submitting projects to PRB include project management and technical assistance. However, the E911 Program Office has not submitted many of its recent technology projects to the PRB for review, so these projects have not received the benefits of the PRB process.

KCIT's Project Review Board could have helped E911 manage its technology projects

PRB is a part of the King County Department of Information Technology (KCIT) that oversees all technology projects at King County agencies. As part of this oversight process, agencies must prepare and submit a number of documents that help with project management, including:

- **Project Plans** that identify the scope, schedule, and budget
- **Business Cases** that justify the need for the project
- **Cost/Benefit Analyses** that weigh the strengths and weaknesses of different alternatives
- **Benefit Realization Reports** that compare the value of the project after a year to its expected value.

The PRB process also provides technical assistance by connecting agencies to technology experts at KCIT that can provide guidance on network and security issues.

The E911 Program Office has not submitted many of its recent technology projects to the PRB for review. In the past, the E911 Program Office submitted some of its technology projects to the PRB for review, but more recent projects related to the implementation of NG 911 have not gone through this process. Normally a technology project requires PRB approval to receive funding during the budget process, but projects implementing NG 911 already have a dedicated funding source. However, KCIT managers state that even separately funded projects should still go through the PRB process.

The PRB process could have saved the E911 Program Office and the PSAPs time, effort, and resources. Since recent technology projects did not go through the PRB process, these projects do not have the plans, business cases, or analyses that are helpful for effective project management. Similarly, the E911 Program Office has not benefited from oversight by the

network security experts at KCIT. For example, a recent project attempted to pair large PSAPs together so that there would be a backup in case of a system failure. However, shortly before this new system was set to go live, security defects were identified and the project was halted.

Recommendation 4	The Enhanced 911 Program Office should follow King County Information Technology policies, including the use of the Project Review Board process for all technology-related projects.

Appendix 1

Analysis of Financial Scenarios To Alleviate Projected Deficit

Although several of the scenarios brainstormed by a committee of PSAP representatives (called the Recommendations Committee) could make significant reductions in the projected E911 funding shortfall, only reducing PSAP revenue distribution could completely eliminate it.[7] To evaluate the scenarios the Recommendations Committee brainstormed to reduce 911 system costs, we performed the following steps.

1. **Identified the total projected deficit.** Our financial consultant normalized the current financial path to avoid artificially inflating projected expenditures by the unusually high 2015 spending on 911 system costs, Intergovernmental Services, and Communication Equipment Replacement ($14.8 million higher than the average of 2014 actual and 2016 projected amounts). The normalized current path results in a total ending fund balance deficit of $35.5 million in 2022. Keeping projected reserves of $5.1 million intact, the target amount to eliminate the deficit is $40.6 million.[8]

2. **Evaluated the quantifiable and feasible scenarios to determine which could alleviate this deficit.** We assessed the 13 financial scenarios the Recommendations Committee identified as appropriate to consider further, and eliminated the ones where we could not quantify the impact (Countywide Logging Recorder, Countywide CAD System, and PSAP Consolidation). We also eliminated those that were not likely to be possible to implement (Enact 1/10 of 1% Tax, Raise 911 excise taxes, Virtual PSAPs).[9] We asked our financial consultant to analyze the remaining scenarios:

#	Scenario
8-11	Reduce PSAP revenue distribution (0%, 25%, 50%, and 75%)
12	Eliminate funding for technical FTEs at PSAPs
13	Eliminate PSAP equipment funding
21	Further reserve account modification

[7] A Recommendation Committee of policy makers representing the jurisdictions of each PSAP in the county convened to make financial and policy recommendations to King County regarding future options for the E-911 Program. The committee met from fall 2013 through fall 2014 but did not produce formal or final recommendations.
[8] Although our consultant based his analysis on forecasted revenues and expenses based on historical actuals (which would not account for any acceleration in spending related to NG 911), the E911 Program Office projection for ending fund balance in 2022 is very close to the forecasted: -$40.2 million projected versus -$40.6 million forecasted.
[9] The King County E-911 & PSAP Planning Interim Recommendations Report Draft – v 10/7/14 describes the Virtual PSAPs option as "all call receivers working from remote locations, no centralized PSAP work locations."

Appendix 1

Analysis of Financial Scenarios To Alleviate Projected Deficit (continued)

3. **Determined which scenario can alleviate the projected funding deficit in 2022.** Our consultant analyzed the above scenarios by projecting a straight line trend based on historical actuals. This projection does not account for any additional costs related to NG 911. More targeted analysis depends on a clear and accurate implementation plan for NG 911. Based on historical projections, our consultant reported the following conclusion: reducing PSAP support revenue distribution is the only single option that can eliminate the $35.5 million deficit while preserving about $5 million of reserves. Eliminating or reducing funding for subcategories of PSAP support (on-location PSAP technical staff and PSAP equipment funding) could provide significant savings, but neither could generate enough savings individually to provide the $40.6 million needed to sustain the E911 program.

#	Scenario (implement 2016)	Savings in 2022
8-11	Reduce PSAP revenue distribution	Total PSAP funding of $107.7 million would need to be reduced by 38% to $67 million
12	Eliminate funding for technical FTEs at PSAPs	Up to $27.6 million
13	Eliminate PSAP equipment funding	$27.2 million
21	Further reserve account modification	Projected reserves in 2022 are $5.2 million, which provides little relief from the funding shortfall

As shown in the table above, reducing PSAP revenue distribution is the only single option that can alleviate the projected deficit. However, the calculated reduction in PSAP support payments illustrated above is a hypothetical number based on the consultant's projection methodology. It is not intended to be a recommendation. Decision-makers may wish to combine the above options (or others not included in this analysis) to identify a feasible solution.

Appendix 2

Mission Critical Partners Executive Summary and Recommendations

Under contract with the King County Auditor's Office, Mission Critical Partners (MCP) conducted a technical evaluation of King County's implementation of Next Generation 911 and summarized their findings in a report. The executive summary and recommendations from that report are included in this appendix and their full report is on the King County Auditor's Office website. MCP's findings and recommendations closely correspond and were used as evidence to support the findings included in this report.

Appendix 2

Mission Critical Partners Executive Summary and Recommendations (continued)

EXECUTIVE SUMMARY

Mission Critical Partners, Inc. (MCP) is pleased to present the results of the King County, Washington, Next Generation 9-1-1 (NG9-1-1) Technical Review. The primary goal is to provide King County (County) with observations and recommendations based on national standards that can be used to develop a solid and sustainable NG9-1-1 strategic plan going forward. The County also has engaged an outside firm to review historical financial information for the King County E9-1-1 Program Office (PO) and determine to what extent the program faces a budget shortfall over the next seven years.

MCP was tasked with reviewing the PO initiatives as they relate to the transition and implementation of NG9-1-1, and how those initiatives align with national standards and best practices. A key element of a program analysis is to assess the current strategy and planning processes that are being used to drive implementation decisions. Currently the PO does not have a formal strategic plan or NG9-1-1 project plan available for review.

King County has been engaged at the forefront of NG9-1-1 technology since its participation in the U.S. Department of Transportation (USDOT) NG9-1-1 Initiative Proof of Concept (POC) testing in 2008[1]. Since that time many agencies across the United States regard King County as a leader in the emergency communications industry. MCP acknowledges the willingness and dedication that the PO has demonstrated with regard to embracing new technologies and participating in national work groups that will assist the industry in improving our nation's 9-1-1 system.

The eagerness by which the PO has embraced new technology however has overshadowed the importance of first developing a solid and sustainable project plan for NG9-1-1-related activities. The absence of project planning, timelines, accountability and a collaborative requirements-gathering process are the primary barriers King County faces to successfully implement NG9-1-1. The expected upcoming budget shortfall is indicative of these and other problems the County faces.

Engaging multiple projects and highly visible activity such as participation in NG9-1-1 development working groups and ongoing trials of new technology can appear to indicate substantial progress toward NG9-1-1. The flurry of ongoing activity however can mask a lack of formal processes, planning and due diligence. Such is the case with the King County PO. During the review of multiple documents it became evident that the PO has taken on numerous projects over the last several years, but many projects are incomplete and numerous projects have begun to overlap. The State E9-1-1 Office also is working with an outside firm to assess the security of its Emergency Services Internet Protocol (IP) network (ESInet), which was deployed to all public safety answering points (PSAPs) in the state in 2010 and 2012. These security issues, perceived by agencies to have been preventable, have been referenced as one of the reasons that many agencies are hesitant to embrace further technology implementations for NG9-1-1.

[1] http://ntl.bts.gov/lib/35000/35600/35675/NG911_POC_DeployPlan_FINAL_v1.0.pdf

Appendix 2

Mission Critical Partners Executive Summary and Recommendations (continued)

MCP interviewed multiple representatives from County agencies and PSAPs to ascertain their views on NG9-1-1 and the progress toward implementation. Many of those interviewed expressed concern with what they view as a piecemeal approach to NG9-1-1 and technology-related projects. They also expressed concern with the level of technical and project management expertise possessed by the PO staff. Insufficient staffing of the PO also was described as a concern.

During the interviews it became apparent that there is significant discord between the PO and its member agencies, and between the agencies themselves. The discord has reached a point where it is directly interfering with the ability of the County to make progress regarding the transition to NG9-1-1. It is MCP's observation that unless resolved, this dysfunction will continue to hamper efforts to improve constituent service levels and will delay implementation of important transition elements such as interim text-to-9-1-1 service. Interim text-to-9-1-1 service currently has much higher visibility with the public than the transition to other components of NG9-1-1. It is in the best interest of King County to address the concern with this issue and develop an implementation strategy with stakeholder buy-in as soon as possible.

Based on our findings, MCP recommends:

1. **King County should temporarily stop the forward momentum of NG9-1-1 and reassess/reprioritize the projects in progress to assure viability and appropriate return on investment.** Given that the State plans to soon issue a Request for Proposal (RFP) for a new ESInet and likely will extend the timeframe for NENA i3 functionality until the 2019-2020 timeframe, King County should not feel pressured to continue moving forward with new NG9-1-1 projects until a strategic plan is in place and supported by relevant stakeholders.

2. **Efforts to improve communications between the PO and the PSAP community should continue to foster cooperation, and ensure accountability and progress.** King County may wish to employ neutral third-parties to help advance stakeholders' interests and lead to mutually beneficial solutions.

3. **The PO should continue to prioritize resolution to the identified security vulnerabilities within the ESInet.** Collaboration with County IT resources is recommended to assure that pending resolution is aligned with County regulations.

4. **The PO, working with its partners, should continue to implement interim text-to-9-1-1 service.** This service will likely become an expectation of King County's residents when other counties in the State announce their plans to implement this NG9-1-1 transition technology in 2015. The PO should identify a target implementation date and plan that is acceptable to its stakeholders. Allowing the issue to remain stalled at the PSAP Committee level is not in the best interest of stakeholder agencies or the public.

Appendix 2

Mission Critical Partners Executive Summary and Recommendations (continued)

5. **The PO, working with its partners, should establish a formal structure for collaboration and decision-making into planning and policy for NG9-1-1 services in the County.** The proposed Regional PSAP Oversight Committee appears to be a step toward establishing this structure. The Committee should collaborate with the PO, regional PSAP directors and public safety agencies to assure that the pending strategic plan for NG9-1-1 has the appropriate level of stakeholder support. The PO should undertake the following action items as part of the planning process:

    a. **Develop a stakeholder planning-and-implementation coordinating body.** This group would develop a needs assessment, determine the operational and system requirements, and identify the baseline functionality necessary for any proposed NG9-1-1 solution.

    b. **Develop a transition plan to ensure the successful transition from the current 9-1-1 system to the new system and the management and operation of the system for optimal health and security.** Transition-planning agreements also should be established. Agreements should address timelines, a statement of expectations, anticipated functionality, coordination of contingencies, and any cost considerations throughout the various levels of transition. PSAP agreements should be updated so that agency management will clearly understand their responsibilities and the responsibility of the PO. Service requirements and performance standards for all NG9-1-1 functional areas should be part of a comprehensive NG9-1-1 Plan. Functional areas should include standards related to GIS, call-handling procedures, policy-based routing rules, ESInet design, data sharing, security and privacy.

    c. **Develop performance metrics, to determine the effectiveness of the NG9-1-1 system and identify any modifications needed to meet the desired performance criteria.** Requirements for the necessary management information system (MIS) should then be drafted to assure that reporting is available to track system performance. These metrics should include system testing processes and system acceptance thresholds.

    d. **Initiate an ongoing review of the ALI, MSAG and GIS synchronization status to assure that the NENA required 98 percent match rate is maintained.**

    e. **Establish consensus on technical support, standards and procedures that will be used to assure the minimum level of system security.**

Appendix 3

Miller & Miller Executive Summary

Miller and Miller CPA conducted a financial evaluation of the E911 Program Office under contract with the King County Auditor's Office and summarized their findings in a final summary working paper, which is on the King County Auditor's Office website. Overall, they found that while the E911 Program Office had provided somewhat confusing and contrary financial information to its partners in the summer of 2014, the overall financial information reported more recently is reasonable and closely corresponds audited countywide financial reports.

Historical Financial Results

Miller and Miller found that the financial information reported by the E911 Program Office for the period from 2005 to 2014 closely matches the information reported in King County's Comprehensive Annual Financial Report (CAFR), which is audited by the Washington State Auditor's Office.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Beginning Fund Balance	$ 9,941,647	$ 12,776,003	$ 14,650,615	$ 16,673,202	$ 18,653,051	$ 18,178,206	$ 16,353,040	$ 15,189,400	$ 20,055,001	$ 24,333,733
Revenues										
E911 Switched Access Lines	6,873,434	6,781,758	6,251,586	5,612,605	4,973,377	4,402,344	5,482,150	5,184,655	4,824,410	4,241,264
E911 Wireless Access Lines	7,741,820	8,654,330	9,251,750	10,035,322	10,171,815	10,273,340	14,779,362	15,249,172	15,515,864	17,161,106
E911 VoIP Access Lines				467,362	1,384,782	1,492,723	2,570,996	2,882,050	3,174,284	2,744,937
Investment Interest	306,602	575,599	837,589	371,718	379,318	160,121	101,829	77,830	89,116	112,549
State E911 support	280,428		65,000			6,705	43,556	29,434	39,220	79,831
Miscellaneous	13,515	840	1,567,719		2,390					
Total Revenues	15,215,799	16,012,527	17,973,644	16,487,007	16,911,682	16,335,232	22,977,893	23,423,141	23,642,894	24,339,687
Expenditures										
Wages, Benefits & Retirement	(475,397)	(531,690)	(578,861)	(678,252)	(709,689)	(746,387)	(739,504)	(800,089)	(897,529)	(1,033,846)
Supplies	(10,248)	(11,689)	(14,334)	(26,515)	(31,763)	(129,954)	(38,849)	(61,715)	(88,507)	(373,033)
Direct Services	(335,192)	(248,069)	(392,449)	(306,315)	(302,359)	(346,326)	(410,071)	(317,193)	(267,304)	(263,615)
911 System costs	(6,319,615)	(7,084,950)	(3,070,064)	(4,689,396)	(3,968,538)	(3,438,153)	(4,481,666)	(3,497,840)	(4,347,126)	(4,967,650)
PSAP Support	(2,899,527)	(4,285,210)	(7,249,271)	(6,642,440)	(8,042,165)	(9,623,555)	(15,074,366)	(10,836,146)	(10,885,168)	(11,584,125)
911 System Maintenance	(859,490)	(876,082)	(1,084,193)	(1,293,793)	(1,681,735)	(1,820,702)	(2,236,212)	(1,402,495)	(1,738,913)	(1,875,545)
Intergovernmental Services	(576,556)	(605,637)	(669,562)	(700,930)	(809,564)	(715,772)	(701,768)	(570,020)	(608,322)	(618,828)
Capital										
Comm Equip Replacement	(905,418)	(494,588)	(2,892,323)	(30,134)	(1,905,922)	(1,382,407)	(488,192)	(1,202,236)	(604,837)	(911,235)
Total Expenditures	(12,381,443)	(14,137,915)	(15,951,057)	(14,367,775)	(17,451,735)	(18,203,256)	(24,170,628)	(18,687,734)	(19,437,706)	(21,627,877)
Excess (Deficiency) of Revenues over Expenditures	2,834,356	1,874,612	2,022,587	2,119,232	(540,053)	(1,868,024)	(1,192,735)	4,735,407	4,205,188	2,711,810
Other Fund Transactions	-	-	-	(139,383)	65,208	42,858	29,095	130,194	79,001	3,240
Ending Fund Balance	$ 12,776,003	$ 14,650,615	$ 16,673,202	$ 18,653,051	$ 18,178,206	$ 16,353,040	$ 15,189,400	$ 20,055,001	$ 24,339,190	$ 27,048,783

Appendix 3

Miller & Miller Executive Summary (continued)

Revenues and Expenditures Are Increasing

As shown in the table above, total revenues have consistently increased since 2011, when the Washington State Legislature increased the excise taxes on switched access lines (land lines), wireless access lines (cell phones), and Voice over Internet Protocol (VoIP). The share of revenue from each of these sources has changed over time, as usage of land lines has declined while cell phone usage has increased.

While revenues have increased, expenditures have also increased, but at a lower rate, causing the program's fund balance to grow over this period, from almost $13 million in 2005 to more than $27 million in 2014.

Executive Response

King County

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KING COUNTY AUDITOR
JUN 18 2015
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June 18, 2015

Kymber Waltmunson
King County Auditor
Room 1033
COURTHOUSE

Dear Ms. Waltmunson:

Thank you for the opportunity to provide a response to the "King County 911 System: Governance Structure and Plan Needed to Move Forward" report. I, along with the Department of Executive Services (DES) and the E911 Program Office, appreciate your review and recommendations.

As noted in your report, the E911 Program Office recognized in 2011 that the current financial plan was not sustainable in the future Next Generation 911 (NG911) environment. In coordination with my office and DES, the E911 Program Office initiated a process with the Public Safety Answering Points (PSAPs) to assess the current system and make recommendations for a future NG911 system that would be financially suitable and continue to provide effective 911 service to the public. Prior to this process, the E911 Program Office and the PSAPs had a long history of cooperatively working together to coordinate this important life-safety service. As indicated in your report, although the sharing of 911 revenue with the PSAPs is the lowest priority expense in the current policies, in 2014 PSAP support accounted for over half of E911 expenditures, demonstrating the commitment to partnering with the PSAPs due to their critical role of answering the 911 calls.

We recognize the importance of establishing a new governance structure for the E911 Program, and have outlined governance as an important component of the work plan for the new Regional PSAP Oversight Committee. This committee will recommend a strategic plan for the implementation, governance, and operation of the NG911 system in King County.

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Executive Response (continued)

Kymber Waltmunson
June 18, 2015
Page 2

The Auditor's Office financial consultant verified that the historical financial data reported by the E911 Program Office in the last ten years is accurate. We concur that agreement on a financial baseline and a process to update the baseline is a critical step in the Regional PSAP Oversight Committee's work plan. The E911 Program Office's 2015/2016 biennial budget included the addition of a Finance Manager FTE, and the hiring process for this position is in progress. The Finance Manager will be in place prior to the initiation of the committee's meetings, so he/she will be available to assist in providing financial information to the committee and stakeholders.

Knowing that NG911 was imminent in the future, the E911 Program Office has implemented projects over the past ten years to prepare the E911 System infrastructure for this new technology. As NG911 is becoming more fully developed and it will soon be feasible to implement NG911 technology and services, we agree that the development of an NG911 implementation plan in coordination with the PSAPs and other stakeholders is necessary. The Regional PSAP Oversight Committee will develop and recommend a sustainable 10-year strategic plan for the NG911 implementation in King County.

In addition, the E911 Program Office's 2015/2016 biennial budget included the addition of a Project Manager FTE, and the hiring process for this position is in progress. The Project Manager will be in place and available to manage the implementation of the projects identified in the NG911 implementation plan. The E911 Program Office's 2015/2016 biennial budget also included the addition of a Systems Engineer and a PSAP Equipment Administrator to assist in the implementation and ongoing operation and maintenance of the upgraded E911 System. The addition of these FTEs will ensure that the Program Office has sufficient staff resources to support the system and the PSAPs.

The E911 Program Office has followed King County Information Technology policies, including the use of the Project Review Board process as outlined in those policies, for E911 technology projects. We agree that it is important for this practice to continue. The Program Office will work with the King County IT Governance Manager to examine the policies and develop a plan for the review of appropriate E911 technology projects.

I am committed to ensuring that our E911 System continues to provide the best 911 service possible to the people of King County as we continue to progress into the NG911 environment.

Executive Response (continued)

Kymber Waltmunson
June 18, 2015
Page 3

Thank you for your review of the King County 911 System and for your recommendations. If you have questions regarding this report, please call Caroline Whalen, County Administrative Officer, Department of Executive Services, at 206-263-9750.

Sincerely,

Dow Constantine
King County Executive

Enclosure

cc: Fred Jarrett, Deputy County Executive, King County Executive Office (KCEO)
Rhonda Berry, Chief of Operations, KCEO
Diane Carlson, Director of Regional Initiatives, KCEO
Caroline Whalen, County Administrative Officer, Department of Executive Services (DES)
Walt Hubbard, Director, Office of Emergency Management, DES
Marlys Davis, E911 Program Manager, E-911 Program Office, DES

Executive Response (continued)

Auditor Recommendation	Agency Position	Schedule for Implementation	Comments
Recommendation #1 The County Executive should create a governance mechanism that builds on the County Council-directed strategic planning group. This group should balance King County's statutory responsibilities under Washington State law, with providing a formal, clear, and transparent mechanism for the Public Safety Answering Points and other regional partners to participate in the decision-making process.	Concur	The Regional PSAP Oversight Committee is expected to complete their recommended Strategic Plan, which includes governance, by February 29, 2016. The Executive estimates that the new governance structure will be implemented by July 31, 2016.	
Recommendation #2 The Enhanced 911 Program Office should collaborate with stakeholders to agree on a financial baseline of required spending and estimated revenues. It should implement a systematic and documented process to regularly update the baseline as elements change, and communicate updates with stakeholders.	Concur	Based on the estimate that the new governance structure will be implemented by July 31, 2016, the Executive estimates that a financial baseline and a process to update the baseline will be established by December 31, 2016.	

Executive Response (continued)

Auditor Recommendation	Agency Position	Schedule for Implementation	Comments
Recommendation #3 The Enhanced 911 Program Office should suspend projects intended to support or implement Next Generation 911 until it has created a Next Generation 911 implementation plan and vetted this plan with stakeholders.	Concur	The Enhanced 911 Program Office has already suspended Next Generation 911 projects and will continue to do so until an implementation plan has been developed and approved through the new governance structure referenced in Recommendation #1 above, with the exception of continuing the implementation of interim text-to-911 and compliance with Priority One Washington State mandatory security requirements as recommended by the Auditor's Office.	In addition to interim text-to-911 and State security requirements, the Enhanced 911 Program Office will also continue: • Implementation of Smart911, which has been implemented in 7 of the PSAPs for over 2 years, and the remaining PSAPs will be completed later this year. In addition, Seattle is planning to launch their campaign to encourage people to sign up beginning August 4, 2015. • Implementation of an Enhanced 911 System security solution to ensure that King County's portion of the statewide system meets national security standards to reduce vulnerabilities.
Recommendation #4 The Enhanced 911 Program Office should follow King County Information Technology (KCIT) policies, including the use of the Project Review Board process for all technology-related projects.	Concur	The Enhanced 911 Program Office will continue to follow Information Technology policies, including the use of the Project Review Board (PRB) process, for all new technology-related projects. The E911 Program Office will also actively seek guidance from KCIT staff to ensure that all PRB policies and procedures are consistently applied.	

Statement of Compliance, Scope, Objective & Methodology

Statement of Compliance with Government Auditing Standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Scope and Objectives

In its 2015-2016 biennial budget, the King County Council directed the King County Auditor's Office to conduct a review of King County's Enhanced 911 (E911) program. Specifically, it directed us to conduct:

A. A financial review of the King County E911 program, its reserves and financial policies, including an evaluation of the county's systems compared to national best practices.

B. A technical audit of King County's implementation of Next Generation 911 policies, standards, technology, and implementation timelines, including evaluation of King County's program compared to state requirements and actions and national best practices.

Methodology

To conduct this review, we hired experienced financial and technical consultants to provide subject matter expertise and address the scope items above. In addition, we interviewed management and key staff from the King County Office of Emergency Management, the E911 Program Office, the Departments of Executive Services and Information Technology, and the Office of Performance, Strategy and Budget.

We conducted site visits to Public Safety Answering Points (PSAPs) of varying sizes and types, including Valley Communications Center, the North East King County Regional Public Safety Communication Agency (NORCOM), University of Washington, and Seattle Police Department. We also interviewed key staff from the Redmond, Issaquah, and King County Sheriff's Office PSAPs.

We reviewed documents produced by the E911 Program Office, groups of stakeholders, and discussed the content with both PSAPs and E911 managers. We also reviewed national literature about 911 and Next Generation 911 and relevant local, state, and federal legislation to understand the parameters and context the King County E911 system operates in.

We assessed the E911 Program Office's information technology project management processes by reviewing available documentation and interviewing managers and key staff in both the E911 Program Office and the King County Department of Information Technology.

Scope of Work on Internal Controls

We assessed internal controls relevant to the audit objectives. This included review of selected policies, plans, processes, and reports. In performing our audit work, we identified concerns related to the accuracy of some historical documentation, and did not rely upon these documents in shaping our analysis. Our financial consultant tested the reliability of financial data provided by the E911 Program Office using a variety of techniques relevant to the type of data, its source, and our potential purposes. We determined that the historical financial data presented in the report were reliable, and the financial plan figures were reliable for our purposes.

List of Recommendations & Implementation Schedule

Recommendation 1: The County Executive should create a governance mechanism that builds on the County Council-directed strategic planning group. This group should balance King County's statutory responsibilities under Washington state law, with providing a formal, clear, and transparent mechanism for the Public Safety Answering Points and other regional partners to participate in the decision-making process.

> **Implementation Date:** July 31, 2016
> **Estimate of Impact:** A functioning governance system will facilitate identification and review of the options that the E911 program has to address its impending financial shortfall. It will provide a venue that stakeholders can use to evaluate potential options and agree on a course of action.

Recommendation 2: The Enhanced 911 Program Office should collaborate with stakeholders to agree on a financial baseline of required spending and estimated revenues. It should implement a systematic and documented process to regularly update the baseline as elements change, and communicate updates with stakeholders.

> **Implementation Date:** December 31, 2016
> **Estimate of Impact:** A baseline of required spending and estimated revenues is a necessary first step in determining feasible options to address the expected financial shortfall. It will allow stakeholders to understand the magnitude of the shortfall and how much flexibility they have in addressing this shortfall.

Recommendation 3: The Enhanced 911 Program Office should suspend projects intended to support or implement Next Generation 911 until it has created a Next Generation 911 implementation plan and vetted this plan with stakeholders.

> **Implementation Date:** Ongoing
> **Estimate of Impact:** Suspending implementation of Next Generation 911 will allow the E911 Program Office and other stakeholders to focus on developing and reviewing an implementation plan. Creation of this plan will facilitate coordination among stakeholders and potentially identify more efficient and effective means to implement Next Generation 911.

Recommendation 4: The Enhanced 911 Program Office should follow King County Information Technology policies, including the use of the Project Review Board process for all technology-related projects.

Implementation Date: Ongoing

Estimate of Impact: King County has dedicated time and other resources toward improving and maturing its management of IT projects. By using the Project Review Board processes, the E911 Program Office will be able to take advantage of this work and of other King County resources like information technology (IT) security and enterprise architecture. These steps could improve the planning and implementation of E911 IT projects and facilitate the transition to Next Generation 911.