

## IT Project Benefits Achievement Plan (Version 2)

### Section 1. What are the purposes of the Benefit Achievement Plan (BAP)?

1. To achieve a clear understanding and focus on the benefits of a project prior to its beginning
2. To update projected benefits of the project as it moves through stages of project approval, implementation, and post-project closure
3. To establish accountability for identifying and achieving benefits
4. To ensure that benefits are achieved

To complete this document fully, please read all of the colored sections and fill in the white cells. For assistance in completing this form, please contact your PSB analyst.

<b>King County Department/Agency Name</b>	KCIT
<b>Project Title</b>	PSERN (Puget Sound Emergency Radio Network) Project
<b>EBS Project Number</b>	1115920

### Section 2. Business Owner Accountability

Business Owners are responsible for achieving project benefits and ensuring this Benefit Achievement Plan (BAP) is regularly updated and completed when benefits are achieved. Business Owners are required to be at the deputy department director or higher.

Business Owner Name and Title: Bill Kehoe, CIO

### Section 3. Who is involved in developing the Benefit Achievement Plan?

The development of the BAP should include significant involvement from the business operations or management staff related to this project and the services it will support. Consider involving staff who will be using the technology to help identify the benefits of the project. KCIT business analysts or technology project staff may assist in benefit identification and documentation. List the staff who contribute to the benefit achievement plan below:

Name	Title / Agency	Project Role
Tony Minor	Manager/KCIT	Technical Input (O&M)
Sean Douglas	Electronic Communications Specialist /KCIT	Technical Input (O&M)

#### Section 4. When should the Benefit Achievement Plan be started, updated and completed?

The BAP is intended to be an iterative, evolving document that will be updated as the project evolves, as information is refined or scope changes, and when benefits are finally achieved. Department and agencies (the business owners of project benefits) are required to update this document at the following times or actions:

1. To support initial project request during “gate two” phase of conceptual review.
2. For the annual Benefits report that PSB compiles.
3. To support funding release requests. If there are no changes, simply indicate “review only” in the revision table.
4. When a material scope change is identified and reported.
5. Up to one year after project completion and then annually until it is determined by the business owners that anticipated benefits have been achieved or no further benefits are expected.

Once the project is complete and benefits are achieved and reported, no additional reporting is required.

Please update the document online. Do not delete your previous text. Update the text as necessary and date those updates. Make sure that you upload the updated version to Innotas. The intent is for this single document to show the history of benefits over the course of the project. List any changes in the table in section 5. (If there are no changes, type none)

#### Section 5. How long will it take to complete the benefit achievement plan?

*Completion of the BAP depends on the project’s complexity. In general, it should take a few hours to complete this BAP form once there is a shared understanding of the project and what value it will bring to the County. More complex and costly projects may require more extensive analysis. To improve this process in the future, please record the time spent on this in the table below at each stage of revision:*

**Revision History Table**

Stage	Date	Revised By	Description	How long did it take?
<i>Please use conceptual review, budget process, funding release, annual report, project implementation, or project completion.</i>	<i>Date this document was updated</i>	<i>Who did the document updates?</i>	<i>A brief summary of what changed in the document. If this is an initial draft, please indicate new. If nothing has changed, indicate “review only”.</i>	<i>How long did it take to complete or revise the form at this stage?</i>
<b>Example:</b> Conceptual review	7/1/13	Jack Smith	New, initial draft	2 hours
<b>Example:</b> Funding release	11/1/13	Jack Smith	Changed the metrics we will measure	2 hours
Funding Request – Phase 2	07/15/13	Amy Martin	New, Initial Draft	3 hours
Funding Request – Phase 2	10/09/13	Amy Martin	Updated Initial Draft	1 hour
Annual Reporting	12/12/13	Amy Martin	No Changes Required	N/A
Annual Reporting	2/18/15	Hai Phung	No changes required	N/A
Update	6/19/15	Hai Phung	Add benefit description to Category 2	1 hour

## Section 6. Description of Project Benefits

Identify the category(ies) of benefits your project will provide and include narrative descriptions of estimated benefits. The benefits of IT investments generally fit into the following four categories:

- 1) External service benefits: Improving the quality or quantity of services provided to the public
- 2) Internal service benefits: Improving internal operations, including the quality or quantity of internal services
- 3) Maintaining service levels by replacing or upgrading older technology, reducing risk of system failures, or providing regulatory compliance
- 4) Reduced cost to produce services (internal or external)

Each category is described below. Most projects will have benefits in one or two categories. If the project does not have benefits in a category, there is no need to provide information for that category.

**What is the primary benefit of your project?** After reviewing the benefit categories below, please identify the primary type of benefit for the project. For most projects, the primary type benefit will be Category #2 improving internal operations or Category #3 replacing or upgrading older technology.

**Primary project benefit?** (Check only one)

- Category #1: External service benefits: Improving the quality or quantity of services provided to the public
- Category #2: Internal service benefits: Improving internal operations, including the quality or quantity of internal services
- Category #3: Maintaining service levels by replacing or upgrading older technology, reducing risk of system failures, or providing regulatory compliance
- Category #4: Reduced cost or cost avoidance to produce services

**Category #1: External service benefits: Improving the quality or quantity of services provided to the public. This category is intended for projects that directly benefit the public. This includes improved quality of service, such as faster response times and better access to services for the public.**

*Example: If this project to upgrade our licensing software is approved, licenses will be issued in two business days instead of the four days currently required. This is largely due to the ability of the new software to check national and state databases more efficiently. About one-quarter of our customers currently complain about the delay in obtaining a license and this time reduction is expected to eliminate almost all complaints and allow staff resources to be directed to other customer services.*

*Example: If this project to accept on-line reservations is approved, residents will be able to schedule athletic fields over the Internet and make payments by credit card. This will allow scheduling to occur at any time, rather than the current limited hours available for in-person or phone reservations. In-person and phone reservations will still be available.*

**The above examples are summaries. Please respond to each question listed below rather than provide a summary.**

1. *Describe why you expect the proposed IT investment to produce the benefit(s).*

The criteria for the system design calls for a more stringent level of radio signal throughout the radio service areas. Because of this the system vendor has been asked to design a network that will increase the amount of signal present in any given location within the service area. The service area is also defined in a new and enhanced manner which also equates to a greater probability that signal will be present at locations within the service areas. Rather than having a single large area of coverage, the county was divided into 43 separate areas (39 Cities, 3 major highways in the mountains, plus a large portion of unincorporated county) with each of these areas having specified coverage requirements.

2. *How will you measure the benefit(s)? (How will you know if the benefit has been achieved?)*

Extensive coverage testing will be completed over several months after all infrastructure operational and functional testing is complete and before users are placed on the system. During this testing teams of testers will conduct several types of tests in “test tiles” that are 1/10th of one mile by 1/10th of one mile square. Each test tile accessible by automobile or boat will be tested by measuring the radio signal strength (for informational purposes only), by measuring the data accuracy (called a Bit error rate, or BER test) and lastly in a subjective “can you hear me now” test (known as a delivered audio quality, or DAQ test). For each accessible test tile both the BER and DAQ tests must both pass to pass the tile. 97% of all tiles must pass the testing to be considered a pass. This compares today with approximately 94% coverage of the county where there is a single coverage area is specified. With a single coverage area coverage holes can be very large and yet still meet the standards. By splitting the county into 43 coverage areas, this will ensure not only increased coverage but that these coverage holes are much smaller.

3. *What is the current baseline for this measure?*

The current baseline is 94% coverage.

4. *What is the target for this measure? (How much improvement will this project achieve?)*

97 % Coverage of the Primary Bounded Coverage area, which is the area of the county west of a line at 1250’ above sea level. Also, the 3 highways heading to the east (US-2, I-90, and SR-410) will have 95% coverage requirements.

*When is the benefit likely to be achieved?*

The benefit will be achieved when the infrastructure is completely built, all radio sites have been proven to be operating according to specifications, system optimization has been completed and testing has been satisfactorily completed.

**Category #2: Internal service benefits: Improving internal operations, including the quality or quantity of internal services. Be sure to explain the value of such improvements to your operations.**

*Example: If this project to acquire hand-held devices and develop custom software is approved, inspectors will be able to check an average of 10 sites per day compared with the average of 6 currently checked. This will allow the agency to handle the 20% increase in workload projected in the next three*

years without adding more staff.

**Example:** If this project to implement a systems management tool for the Service Center is implemented we will be able to reduce the duration of technology outages during major incidents by 30 percent. We also will reduce the wait time for customers on hold with the Service Center. These improvements will allow us to redirect an existing position to other priorities.

**Example:** The Active Directory Consolidation project is part of an overall effort to promote IT standardization. This project will make the current management of user accounts, applications, and devices easier for IT administrators at Public Health because the end user experience will also be improved by having a single sign-on to applications such as Lync, SharePoint, and Outlook. Our success will be measured by having a single set of procedures and security models rather than the multiple ones that now exist.

**The above examples are summaries. Please respond to each question listed below rather than provide a summary.**

1. Describe why you expect the proposed IT investment to produce the benefit(s).

The criteria for the system design calls for a more stringent level of radio signal throughout the radio service areas. Because of this the system vendor has been asked to design a network that will increase the amount of signal present in any given location within the service area. The service area is also defined in a new and enhanced manner which also equates to a greater probability that signal will be present at locations within the service areas. Rather than having a single large area of coverage, the county was divided into 43 separate areas (39 Cities, 3 major highways in the mountains, plus a large portion of unincorporated county) with each of these areas having specified coverage requirements.

2. How will you measure the benefit(s)? (How will you know if the benefit has been achieved?)

Extensive coverage testing will be completed over several months after all infrastructure operational and functional testing is complete and before users are placed on the system. During this testing teams of testers will conduct several types of tests in “test tiles” that are 1/10<sup>th</sup> of one mile by 1/10<sup>th</sup> of one mile square. Each test tile accessible by automobile or boat will be tested by measuring the radio signal strength (for informational purposes only), by measuring the data accuracy (called a Bit error rate, or BER test) and lastly in a subjective “can you hear me now” test (known as a delivered audio quality, or DAQ test). For each accessible test tile both the BER and DAQ tests must both pass to pass the tile. 97% of all tiles must pass the testing to be considered a pass. This compares today with approximately 94% coverage of the county where there is a single coverage area is specified. With a single coverage area coverage holes can be very large and yet still meet the standards. By splitting the county into 43 coverage areas, this will ensure not only increased coverage but that the coverage holes are much smaller.

3. What is the current baseline for this measure?

The current baseline is 94% coverage.

4. What is the target for this measure? (How much improvement will this project achieve?)

97 % Coverage of the Primary Bounded Coverage area, which is the area of the county west of a line at 1250' above sea level. Also, the 3 highways heading to the east (US-2, I-90, and SR-410) will have 95% coverage requirements.

5. *When is the benefit likely to be achieved?*

The benefit will be achieved when the infrastructure is completely built, all radio sites have been proven to be operating according to specifications, system optimization has been completed and testing has been satisfactorily completed.

**Category #3: Projects that maintain service at current levels by either replacing or upgrading older technology, reducing the risk of system failures, or providing regulatory compliance. If the project will result in improvements to external or internal services or cost savings, please note those benefits in the appropriate categories.**

*Example: This project will upgrade PeopleSoft from 9.0 to 9.2. This upgrade is necessary because vendor support for 9.0 will be ending in 2015 and that creates a large risk for the County. Without vendor support the County will not receive tax and regulatory updates and will likely result in errors in complying with tax and regulatory issues.*

*Example: This project will implement an Advanced Authentication solution which will allow King County to comply with U. S. Department of Justice - Federal Bureau of Investigation, Criminal Justice Information Services (CJIS) Security Policy Version 5.0, Section 5.6.2.2. Effective September 30, 2013, advanced authentication (AA) must be in place in order to access sensitive CJIS information.*

1. *Describe why you are proposing to upgrade or replace existing technology. Please include age of existing technology and the average life cycle replacement for this type of technology.*

The current emergency radio system (ERS) contains electronic components that are eighteen (18) years old. Typically emergency radio systems have a life cycle of approximately twenty (20) years. The likelihood and frequency of component failures is increasing as the system ages and Motorola no longer sells or supports some of the system's critical components and plans to discontinue the sale and repair of all components in phases over the next few years. Components are still available on the secondary market; however, reliance upon the secondary market equipment is risky because the needed version of a critical component may not be available and the condition and service history of the components is unknown. In addition, certain geographic areas within the service region require improved radio coverage to meet the needs of a growing population within King County to include boundary limits that were not considered when the initial ERS was built eighteen years ago. At this time, radio sites cannot be added to expand coverage because Motorola no longer sells the necessary new equipment.

2. *If the primary reason for the project is risk reduction project, please estimate the probability of the risk or describe how likely it is to occur.*

Radio System technology is extremely complicated. There are layers of operability, failure modes and redundancy that are purposely built into the system to ensure that it will meet end user needs. Today, when something breaks, it often does so without indication to the end users because of the requirements for 99.999% reliability. Single components in the radio system fail nearly every

day. This could mean that one radio channel in one location is no longer available, but 22 other channels are available. It could also mean that a device called a “system controller” fails, but a redundant device takes over operations for the failed component. Again, these could go unnoticed by end users in nearly all “normal” use scenarios today. What is clear is that as time advances, the risk of failures increase due to system component age. Simultaneously, the ability to repair parts and get new parts is decreasing. The ability of the County to get parts on any secondary market is fraught with problems such as incompatibility, parts unavailability, and lack of functionality of the parts with our system. It is therefore probable that at some point after the secession of parts support from the vendor, the system will begin to suffer failures that will decrease capacity, reliability and/or coverage if something is not done to address this. It is not a sudden “event” that will occur on a certain date, but rather is likely to be a gradual chain of events that will impact the radio system over a period of time. By implementing a new more reliable system with new components, the potential for the risk of equipment and software failures, service outages and system interruptions will be reduced. The need for replacement parts will no longer be a concern and the risk of using secondary parts will be eliminated.

#### **Category #4: Reduced cost to produce service (external or internal) or cost avoidance**

This category is for those projects that will reduce the costs to deliver a county service (external or internal). The information provided here should be consistent with the information in the cost-benefit analysis (CBA) form. Please describe how the cost savings will be used by your organization. This category also includes cost avoidance. Cost avoidance is those costs that the County would need to pay, has the capacity and intent to pay, but will be avoided due to the project.

***Example: Reduced cost to produce service.** If this project to install accounts payable software is approved, we will automate three tasks that are currently done manually by agency and central purchasing employees. Based on experience of other users of the software, this will reduce processing time from the current average of ten days to less than one. This will allow us to take advantage of prompt payment discounts for over \$15,000,000 of annual purchases. These discounts average 2%, yielding annual savings of about \$300,000. This will result in savings in department expenditures for those items qualifying for prompt payment discounts.*

***Example: Cost Avoidance.** Moving to this new vendor that uses a SaaS product, we will avoid the need to upgrade the system to the newest version which goes end-of-life at the end of next year. We were required to make this upgrade due to regulatory reasons, so this represents a cost avoidance of \$100,000.*

**The above examples are summaries. Please respond to each question listed below rather than provide a summary.**

1. Describe why you expect the proposed IT investment to reduce costs?
2. How will you measure the cost reduction or cost avoidance? (How will you know if the benefit has been achieved)
3. What is the current baseline?
4. What is the target for this measure? (How much savings will this project achieve)
5. When is the cost reduction likely to be achieved?

## Section 7. Benefit Achievement Summary

### Benefit Achievement Summary

*To be completed when benefits have been achieved or no further benefits are expected. For each of the benefits you identified above, explain whether benefits were achieved at target levels. Please include both quantitative measures and qualitative descriptions of benefits, including any monetary benefits. Use the measures identified above. If not achieved, explain why.*

**Example:** This project, to repair an emergency radio tower, was successfully completed in April 2014. The anticipated benefit was to maintain current service levels at 99.999% up time for an additional five years. This project is currently functioning at 99.999% up-time and will report annually for the next five years on up-time levels.

*If one of these towers failed physically, the cost to the county would be enormous, generally in the neighborhood of \$500K - \$1 Million per tower depending on the construction techniques and size. User agencies on the emergency radio system will benefit by having infrastructure systems in place that will be assured of not experiencing catastrophic failures due to lack of maintenance.*

**Example:** This project to automate accounts payable software was implemented and did improve the processing time average. The average time was reduced from 10 days to 2 days, not quite reaching the 1 day target. Additionally, only 20 percent of purchases received a prompt payment discount resulting in less cost swings than anticipated. We did not meet the target because there were fewer purchases that qualified for prompt payment than originally estimated.

**Example:**

Metric Description	Metrics	Baseline	Target	Actual
Reduce cost to deliver service. This project reduced processing time from the current average of ten days to less than one allowing us to take advantage of prompt payment discounts.	Processing Time annual savings, and percentage of purchases receiving prompt payment discounts	<ul style="list-style-type: none"> <li>• 10 days processing time</li> <li>• 10 percent of purchases are receiving discount</li> <li>• Savings of \$100,000</li> </ul>	<ul style="list-style-type: none"> <li>• 1 day processing time</li> <li>• 30 percent of purchases are receiving prompt payment discounts</li> <li>• \$400,000 savings</li> </ul>	2 day processing time 20 percent of purchases are receiving prompt payment discounts \$200,000



				<i>savings</i>	