Attachment A

King County
METRO

Next Generation ORCA
Project Update

Response to a Proviso in Ordinance 18409
(Section 132, P2, and amended by Ordinance 18544, Section 77)

March 2018

Prepared for: King County Council

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Next Generation ORCA Project Update

County Council Direction

This report responds to the following proviso in King County's 2017-2018 budget, Ordinance 18409, Section 132, Proviso 2, and amended by Ordinance 18544, Section 77:

> *Of the appropriation for capital project 1124456, ORCA Replacement Project, $10,000,000 shall not be expended or encumbered until the executive transmits a report on project cost estimates, risk mitigation strategies and reporting plans, and a motion that approves the report and a motion approving the report is passed by the council. The motion shall reference the subject matter, the proviso's ordinance, ordinance section and proviso number in both the title and body of the motion.*

> *The report shall include, but not be limited to:*

> *A. An updated business case, cost benefit analysis, and benefit achievement plan based on cost estimates and project information obtained during the preliminary design phase of the project;*

> *B. A project risk assessment and mitigation plan, informed by: (1) the risk and issues register to be developed by the Next Generation ORCA Regional Project Team, including but not limited to the team's risk manager and quality assurance consultant; and (2) the risk identification and mitigation activities described in the Next Generation ORCA Risk Management Plan dated 7/28/16; and*

> *C. A plan for keeping the King County council informed quarterly of project progress and expenditures.*

> *The executive should file the report and motion required by this proviso by March 31, 2018, in the form of a paper original and an electronic copy with the clerk of the council, who shall retain the original and provide an electronic copy to all councilmembers, the council chief of staff and the lead staff for the transportation, economy and environment committee, or its successor.*

Project Background and Status

ORCA (One Regional Card for All), the regional smart card fare collection system implemented in 2009, is approaching the end of its useful life in its current form. The current operations and maintenance agreement with Vix, the ORCA vendor, will expire at the end of 2021. In 2014 the seven ORCA member agencies, including King County Metro Transit, began preparing for a replacement fare system. The ORCA Replacement

Project, regionally referred to as The Next Generation ORCA Project, was developed to plan, scope, procure and implement a replacement fare collection system.

The ORCA agencies agreed to a number of strategic objectives for Next Generation ORCA. Of these objectives, the following are designed to improve the quality of services provided to the public:

Improve customer experience
- Programs for unbanked/underbanked—create programs that make it easier for customers without banking relationships to use ORCA to purchase tickets, take advantage of ride discounts, and participate fully in any services ORCA may offer.
- Business and institutional programs—continue to provide programs that cater to the needs of local businesses and leverage the scale that their constituents provide
- Instantaneous availability of loaded value—increase customer satisfaction by eliminating the waiting period for value added to the ORCA cards

Increase ORCA usage
- All modes—make ORCA easily usable on all modes of transport
- Market penetration—make ORCA available through as many venues as possible in addition to the current retail network and ticket machines

The following strategic objectives are concerned with efficient and cost-effective operation of the new system:

Fiscal responsibility
- Lower total cost of ownership (TCO)—ensure that the new system is cost-effective to implement and efficient to operate
- Lower upgrade and improvement cost—increase use of state-of-the-art technology to create efficiencies and design a system that is modular enough to be easily upgraded as technology changes

Operational efficiency
- Roll out new functionality and upgrades faster—use technology and administration to enable the region to quickly assess and pilot new technology features and implement them efficiently
- Make data easier to access for agencies and public—allow agencies to find, analyze and report information easily

The ORCA agencies also defined a process and schedule for the Next Generation ORCA Project that includes planning, procurement, design, development, testing, transition, and operations and maintenance phases. Figure 1 shows the schedule as updated in May 2017. The schedule is driven by the approaching end of life of the current ORCA system; the time required to design, test, and produce the Next Generation ORCA system; and the time required to change system hardware across agency fleets and stations. The next update to the project schedule is expected in the

third quarter of 2018, after the Systems Integrator contract is executed. The ORCA agencies are currently working to extend the current ORCA contract through 2023. The extension of the current ORCA vendor contract is necessary to accomodate the transition schedule to Next Generation ORCA and the time required to outfit Metro's fleet.

Fig. 1. Next Generation ORCA Project Schedule

System Integrator

Task	2016	2017	2018	2019	2020	2021	2022	2023
	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4
PLANNING								
PROCUREMENT								
DESIGN								
SI Conceptual Design Review								
SI Preliminary Design Review								
SI Final Design Review								
DEVELOPMENT								
TESTING								
SI Factory Testing								
SI Integration Testing								
SI Acceptance Testing								
TRANSITION								
OPERATIONS AND MAINTENANCE								

DARe Phase 1 and 2

Task	2016	2017	2018	2019	2020	2021	2022	2023
	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4
PLANNING								
PROCUREMENT								
Data Integrator								
Data Platform								
Data Evironoment								
3) Phase 1 (Legacy ORCA)								
Requirements Gathering								
Extract Data from Legacy ORCA (Vix)								
Build Data Store								
Build Reports								
Training								
Operations & Maintenance								
4) Phase 2 (Next Generation ORCA)								
Requirements Gathering								
Build Data Interchange with supplied APIs								
Incorporate Phase 1 Data								
Build Data Store								
Build Reports								
Training								
5) OPERATIONS AND MAINTENANCE								

OTHER PROCUREMENTS

Task	2016	2017	2018	2019	2020	2021	2022	2023
	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4
Retail Network								
Merchant Bank								
Fare Media								

The Next Generation ORCA Project has concluded its planning phase. Figure 2 compares the current ORCA system with the planned features of the Next Generation ORCA system. The figure highlights what shifting from a card-based system to an account-based system will mean for both customers and the ORCA agencies.

For customers, the new system will increase their access to account management functions, improve their travel experience, and be easier to navigate.

For agencies, Next Generation ORCA will be an open architecture system and will be owned and operated by the ORCA agencies. This means that making changes and updates to the system and adding functionality—such as integrating ORCA with other transportation-related functions to make payment seamless for customers—will be much easier than in the current ORCA system.

Figure 2 summarizes the Next Generation ORCA project at a high level and highlights the benefits to customers and to the ORCA agencies. The Next Generation ORCA Steering Committee, comprised of representatives from the ORCA agencies, worked to formally define the project scope during the planning phase. However, there may be updates to the project scope once the Systems Integrator contract is awarded, based on the capabilities they offer at the time the contract is executed.

Fig. 2. Next Generation ORCA Overview

next generation ORCA

WE SURVEYED THOUSANDS OF CUSTOMERS ABOUT ORCA
We're keeping all the great things customers like about ORCA. We're also working to address our customers' wish list.

Customers' biggest ORCA dislikes:	In response, next gen ORCA will offer:
1 Card loading delay Waiting 24-48 hours for value to be loaded	**Instant loading** To your ORCA account
2 Limited sales locations	**More retail locations** (At least 4x!) to get ORCA and load value
3 Website challenges	**New and improved website** With an easier interface
4 No mobile solution	**A new mobile app** Add and pay fare from your device – card optional!

KEY PROGRAM FACTS

Why	How	Investment
• Current ORCA near end of life • Current ORCA devices no longer available • Current ORCA cannot scale with transit demand • More features and convenience	• Delivered in phases, beginning transition in 2021 • Launch with essential functions PLUS new tech features • Seamless cutover for customers • Meets all seven agencies' needs	• Early estimate is ~ $95M • Current ORCA in today's dollars ~ $88M • Estimated additional agency costs are ~ $25M • next gen ORCA will cover more stations, vehicles • Project 4X ridership and revenue than when ORCA started

Currently, the Next Generation ORCA Project is transitioning to the design phase. The Regional Program Team has identified a short list of respondents to a request for proposals for the Systems Integrator contract. This is the contract for a vendor that will design and ultimately deliver the Next Generation ORCA system to the region. The current estimate is that the Systems Integrator contract award will occur in the third quarter of 2018. This milestone will drive revised scope, schedule, and budget estimates, which will be available in the third quarter of 2018. The Quality Assurance vendor will provide project oversight and risk management support to the Regional Program Team and to the System Integrator. The Regional Program Team estimates that the Quality Assurance contract will be executed in the second quarter of 2018. These two procurements are currently meeting project schedule plans.

Updated Business Case, Cost Benefit Analysis, and Benefit Achievement Plan

The ORCA Replacement Project Conceptual Review and Business Case (Version 3), as updated on January 26, 2018, is appended to this report as Appendix A. This version has minor text changes and minor milestone date updates. The updates reflect the completion of work concerning project requirements and the procurement process. The project completion date of 2023 has not changed. Any significant updates to this document will be available following execution of the Systems Integrator contract, expected in the third quarter of 2018 as part of the 2019-2020 budget request.

The ORCA Replacement Project Cost Benefit Analysis is appended to this report as Appendix B. It has not been changed since its initial submission. As with the Business Case, any significant updates to this document will be available following execution of the Systems Integrator contract.

The ORCA Replacement Project IT Projects Benefits Achievement Plan (Version 2) is appended to this report as Appendix C. It has not been changed since the Project Review Board approval of the Pre-Design Phase Funding Release in April 2017. This document will be updated as part of the Design Phase Funding Release request of the Project Review Board in the third quarter of 2018 and as part of the 2019-2020 biennial budget request to the King County Council.

The execution of the Systems Integrator contract will provide important information to the ORCA agencies about which assumptions and estimates made in the project's planning phase were accurate and which need adjustment. Metro proposes to initiate updates to the King County Council about these new developments in the third quarter of 2018. Details about Metro's proposal for updating the Council about the project status are provided in the Plan for Informing the King County Council Quarterly of Project Progress and Expenditures section of this report.

Updated Risk Assessment and Mitigation Plan

The updated Next Generation ORCA Risk Management Plan, dated January 24, 2018, is appended to this report as Appendix D. The original risk management plan was issued on July 28, 2017. The updates to the Risk Management Plan are minor:

- A streamlined risk register, removing several unneeded fields
- A better-defined role for the regional program manager, as the coordinator of communication and work between the quality assurance consultant and individual project managers
- Added detail about quarterly risk review meetings.

The Quality Assurance consultant contract is likely to be executed in April or May 2018. The Regional Program Team and agency staff are evaluating proposals now and plan

to select a consultant in the coming weeks. Updates to the Risk Management Plan will follow from this process.

Plan for Informing the King County Council Quarterly of Project Progress and Expenditures

Metro proposes to keep the King County Council informed via the following activities:

- Quarterly briefings for the chairs of the Transportation, Economy, and Environment Committee and the Regional Transit Committee, starting in the third quarter of 2018

- Regular project updates at Interbranch staff meetings, or as requested

- A project dashboard that may be shared with key stakeholders, including King County councilmembers and staff on a quarterly basis.

In addition to the activities listed above, standard project review and oversight activities are built into the Next Generation ORCA Project. Table 1 shows key project oversight events that are planned for the life of the project.

Table 1: Project Oversight Events

Checkpoint Event	Approval Required By	Scheduled Timeframe
Planning phase funding release	Project Review Board (PRB)	September 2015
ORCA Replacement Report accepted	King County Council	Approved 2/9/2016
Implementation phase appropriation	King County Council	Approved 11/9/2016 for 2017/2018 Biennium
Pre-design phase funding release	PRB	Approved 4/2/2017
Council proviso report submitted	King County Council	1Q 2018
Design funding release	PRB	3Q 2018
2019-2020 biennium appropriation	King County Council	4Q 2018
Implementation funding release	PRB	1Q 2020
2021-2022 biennium appropriation	King County Council	4Q 2020

Conclusion

Once the Next Generation ORCA Project selects a System Integrator and a Quality Assurance consultant and executes contracts for these vendors, more will be known about any changes to the project's scope, schedule, budget, and risks. Regional Program Team staff and Metro expect that the capabilities of the system at rollout and in subsequent phases will be more clear, costs associated with system development and of equipment will be better defined, and risks associated with transition from current ORCA to Next Generation ORCA will be more clear.

The proposal for keeping the King County Council apprised of project staus on a quarterly basis and for keeping Council staff updated reflect this sequence of events.

Next Generation ORCA is a critical project for business continuity, collection of revenue for transit, improvement of the customer experience, and keeping Metro and partner agencies up to date with evolving technology. Metro plans to keep the King County Council informed of developments over the life of the project to ensure critical oversight and support for the project's successful conclusion.

Conceptual Review and Business Case
for Information Technology (IT) Projects for the 2017-18 Budget Cycle

GENERAL GUIDELINES

Use this form to provide information about your project for both **conceptual review** and your **business case**.
Conceptual Review Instructions: Answer questions #1 to 21 in Sections 1 to 5 below. You must submit this completed form via email to Karl Nygard in PSB. King County's Office of Performance, Strategy and Budget (PSB) and Chief Information Officer (CIO) will evaluate your proposed concept. **If** your concept is **approved**, you will later use this same form to develop your business case.
Business Case Instructions: Answer questions #21b to 26 in Sections 6 to 9. Additionally, complete a Cost-Benefit Analysis (CBA) workbook and Benefits Achievements Plan (BAP). Submit this completed form, CBA, and BAP via email to Karl Nygard in PSB. If your business case, CBA, and BAP are approved, your project will be included in the County Executive's budget proposal for the 2017-2018 budget cycle.

CONCEPTUAL REVIEW QUESTIONS (1-21a)

Section 1: Proposal/Contact Information

1	**Department/Agency Name**	DOT	**Division**	DOT-Transit
2	**Project Sponsor** (Last, First)	Obeso, Victor	**Job Title**	Deputy General Manager
3	**Project Contact Name** (Last, First)	Randy Boshart	**Job Title**	Project Manager
4	**Date Submitted** (MM/DD/YYYY)	01/26/2018		

Section 2: Project Background

5	**Project Title**	ORCA Replacement			
6	**Target Dates**	6.1	**Start (Quarter # Year)** Q1 2015	6.2	**End (Quarter # Year)** Q4 2022

7	**Business Need/Problem Statement** (250 word max) Describe how this concept will transform your business to solve a business problem? What external factors (e.g., compliance guidelines, legal mandates, and audit findings) exist to drive this concept?
	The regional ORCA transit fare collection system was deployed in 2009. The system includes field devices (ORCA readers and other devices) that are operated by the ORCA agencies. In addition, there is a central clearinghouse that stores ORCA data and distributes fare revenue based upon a complex set of business rules established by the ORCA agencies. This clearinghouse is hosted and operated by the ORCA contractor under an operating and maintenance (O&M) agreement. The O&M agreement ends in 2021.
	King County and its six partner agencies (Sound Transit, Washington State Ferries, Community Transit, Pierce Transit, Kitsap Transit and Everett Transit) are planning for the next generation of fare collection in the Puget Sound region. Since King County is the largest transit operator in the region and has significant interest in influencing the design and strategic direction for the new system, its participation in the planning and procurement for the new system is critical. This request for the ORCA Replacement project is to fund King County's participation in the regional planning process, the development of detailed requirements, and participation in the procurement, design and implementation of the replacement system.
	This is a follow-on request with system procurement and design costs in the 2017/2018 budget cycle, leading to implementation in 2019/2020.
8	**Project Description** (250 word max) Describe the proposed project and IT investment and how it will solve your business need/problem. List any system(s) that will be replaced. What business function(s) will this proposed investment support?
	This project will conduct detailed planning and scoping to replace the existing ORCA fare collection system. The project will then participate in the vendor procurement process, followed by detailed requirements development and implementation. The project will ensure that Metro can continue to collect fare revenue beyond 2021, using modern, supportable technology. Since farebox revenue (including ORCA) represents approximately 29% of Transit's total revenue (as of 2013), this system is considered critical to Transit business continuity and ongoing financial viability.

The ORCA replacement planning efforts are being led by Sound Transit, the ORCA Regional Program Administration Agency.

Planning is complete and included:
- Development of detailed requirements.
- Development of a regional procurement approach.
- Development of cost estimates for procurement and implementation of the replacement system.

Procurement is in progress and is expected to include:
- Development of Request for Proposals (RFP)
- Review and analysis of RFP responses
- Vendor evaluation and selection

Design is expected to include:
- Development of detailed design specifications
- Integration planning
- Installation planning

Implementation is expected to include:
- Hardware installation
- Integration with existing systems

The future fare collection system is expected to include:
- Fare card readers or validators at all fare collection points (buses, rail stations, etc.);
- Bus operator displays and functionality to collect and manage fares;
- Fare inspection equipment for fare enforcement officers;
- Agency servers and other equipment needed to collect fares from readers and manage system devices and functions;
- A central clearinghouse and associated financial processing to manage, reconcile and settle transactions;
- Websites for agency management, business accounts and customer uses; Reporting and processes required for system implementation and ongoing maintenance.

9	**Project Value and Anticipated Benefits** (250 word max)
	Describe the value that your solution will provide to King County's constituents and organizations. What are the anticipated, tangible benefits (i.e. new revenue, reductions in cost or time, customer service delivery improvements) and intangible benefits (i.e. cost avoidance) of your proposed IT investment?
	List expected outcomes, and when will the results be measured for each to the best of your ability using the information available now?

The project will implement detailed requirements and install new equipment and technology to replace the current vendor-supported system when the contract expires in 2021.

The regional ORCA Needs Assessment and Technology Survey identified the following strategic objectives for the new system:
- Improve customer experience
  - Programs for unbanked/underbanked customers
  - Business and institutional programs
  - Instantaneous availability of loaded value
- Increase ORCA usage
  - All modes
  - Marketing penetration
- Fiscal responsibility
  - Lower Total Cost of Ownership (TCO)
  - Lower upgrade and improvement costs
- Operational efficiency

- Roll out new functionality and upgrades faster
- Make data easier to access for agencies and public

10	**Business Process Impact(s)** (250 word max)
	Describe the business process(es) impact this concept will have. How significant the business process/processes change will be? Will the business change include Lean efforts and/or continuous service improvement?
	- Fare Collection: The process for fare collection will change from a closed-loop system to an account based system. This will require near-real-time communications to process fare transactions. New on vehicle hardware and back-office hardware and software will be required. - Customer Service: Customers will have greater access to account information and account management using modern technologies. - Fare Media Sales: The processes for distributing fare media will be expanded and changed due to the nature of account based fare payment systems and expanded open-payment options. - Special Programs: Modern payment options will allow for additional transit programs to take payment using the ORCA program. While decisions on which programs will be included have not been made, these could include; vanpool, carpool, transit parking, bike share, community shuttles, and others. - Fare Policy: Potential changes to fare policy and fare simplification strategies are under consideration. Elimination of zone fares and peak fares are under review for approval by all participating agencies. - System Management: There are potential changes to management of back-office system components currently hosted and/or managed by King County, which could become regionally managed and staffed. Decisions have not been made on these changes.

Section 3: Funding Sources and High-level Cost Estimates

11	**Project Funding Sources**	
	Identify the potential funding sources for this project.	
	☐ King County General Fund ☒ King County Non-General (Agency) Fund (Capital) ☐ King County Non-General (Agency) Fund (Operating)	☐ Debt Financing ☐ Unknown
	☐ External, non-King County funding (e.g., grant):	

12	**Project Cost Estimates**
	Use the drop-down list below to select the estimated initial project cost, not including ongoing annual operations and maintenance costs
	Level 3 - More than $10M

13	**Ongoing Annual Operations and Maintenance Cost Estimates**
	Use the drop-down list below to select the estimated ongoing annual O&M cost of your project.
	More than $100K

Section 4: Strategic Alignment

14	**Alignment with King County's Strategic Plan (KCSP)**	
	Select the Guiding Principle or Goal that your project best helps to accomplish. Click the link to view the **King County Strategic Plan**.	
	Financially Sustainable	Efficient, Accountable Regional and Local Government

15	**Alignment with Your Organization's Mission and Goals**
	Describe how the proposed investment will contribute to achieving your organization's mission and goals.
	Financial Stewardship: The next generation ORCA project (which is the formal regional name for the ORCA Replacement Project) will use a decentralized approach to system design which will allow for greater flexibility in future changes. This flexibility will make it easier to adapt the Next Generation ORCA system to future changes without the need for wholesale replacement of the system. Additionally, Next Generation ORCA will allow for greater visibility into the financial impacts of the regional fare payment system through the use of modern data collection and data analysis tools which are not available in the current system.

16	**Measuring Strategic Impact** (250 word max)	
	Please describe how you will measure the strategic impact of the areas impacted in King County and within your agency or department as well as how much of an impact you anticipate this project having toward this goal.	

	KCM will measure strategic impact using discrete, quantifiable metrics identified in the Strategic Plan for Public Transportation 2011-2021. KCM will measure and compare findings to past practices to determine if the Next Generation ORCA system is having the intended impact. Objective 5.2: Improve public awareness of Metro products and services. • Strategy 5.2.1: Use available tools, new technologies and new methods to improve communications with customers. The Next Generation ORCA project will implement new technologies which will provide customers with additional tools not currently available. These tools will allow passengers to purchase fare products, add value to existing accounts, and view account history in near real-time using a variety of means including on-line, in person, and mobile applications. Objective 6.2: Control Costs • Strategy 6.2.2: Provide and maintain capital assets to support efficient and effective service delivery. This project will procure new hardware and software to replace existing near end of life equipment used in fare collection. Strategic investments in new infrastructure allow Metro to enhance the efficiency and effectiveness of the public transportation system.
17	**Risks** (250 word max) Identify the risks of this concept and what will be planned to mitigate risks in the project? Some of the areas that you should consider when assessing the risk of this project to be included in the formal risk plan to be developed during the project are: The number and type of business process changes required, the number and type of integrations and with what types of systems, the need for external Q&A, managerial and staff capacity both for the business and technology, training and change management within your agency and externally if required, key staffing and retention risks, the ability to support the technology implementation and ongoing needs, and how these risks are reflected in the project budget.
	The ORCA Replacement Project is a regional project that is being managed by Sound Transit. Due to the size and complexity of the project, there is significant technical and schedule risk. To mitigate this at the regional level, a project team has been engaged to manage the overall project. This team includes a project manager and full-time subject matter experts to support all phases of the project. In addition, an experienced consultant team has been obtained, and a quality assurance consultant will be hired soon. At roughly 60% of the overall capacity of the region, King County will have a significant role in the project. A King County management team, the ORCA Management Group, has been assembled with management representatives from multiple Transit and other impacted County groups. An experienced project manager from the Systems Development and Operations group has also been assigned to manage the King County portion of the project and will report directly to the ORCA Management Group.

Section 5. Technology Alignment

18	**Alignment with King County's Strategic Technology Plan** Select the "What" goal that best aligns with your project. Click the link to view the **King County Strategic Technology Plan**, slide 2.	
	Systems Effectiveness	
19	**Alignment with King County's Enterprise Architecture (EA)Principles** Select the overarching **EA principle** that is most important for this effort. The purpose of this section is to elicit meaningful discussions with King County's CIO and the EA Team during the evaluation of your business case.	
	Partner interoperability	
20	**Are you aware of a technology, solution, or application in use at the County that provides similar functionality to this project?** If a potential technology solution or product that would likely meet the needs of the proposed concept been identified, describe the technology solution or product.	Yes
	The current ORCA system	
21.a	**Have potential systems (i.e., Oracle EBS, PeopleSoft, Hyperion) that may need to integrate with the proposed solution been identified?** If yes, identify the organizations and describe the impact of this project on other business systems. If your project impacts **Oracle EBS, PeopleSoft, or Hyperion**, you **must** provide the following information in the space below: 1) Central business system Change Management Board (CMB) review date and 2) the business or system expertise you anticipate needing for this project and target dates for required resources.	No

<END OF CONCEPTUAL REVIEW QUESTIONS>

BUSINESS CASE QUESTIONS (21b-26.17)

21.b	**Have you consulted with Records Management to verify that the records retention plan and policy for the solution proposed with this project is in accordance with standard county procedures?** If yes, please describe how the records retention needs, that proposed solution would have, are considered as a part of the project budget and how resourcing requirements are considered as a part of the ongoing cost. If no, please describe why this solution is exempt from records retention requirements.	Yes
	We have discussed the retention plan and policy and identified proposed solutions with the County Records Manager, Gail Snow. We have also transmitted the Conceptual Review Document to Records Management for their involvement and review, and will follow up as needed.	

Section 6. Project Planning

22	**Major Milestones and Estimated Costs**
	In accordance with King County Code, Section 2.16.0757, this information will be used to develop King County's Annual Technology Business Plan to report progress against milestones. Identify at least two major milestones (e.g., planning, preliminary design, design, implementation, and/or close out) for each year of the project and the estimated costs associated with each milestone.

Start Date (select from calendar)	End Date (select from calendar)	Major Milestones (enter descriptions)	Estimated Cost ($) (no commas)
01/02/2015	06/03/2016	Planning	1157866
07/01/2016	08/01/2018	Preliminary Design	4876875
08/02/2018	05/18/2020	Design	6459031
06/12/2020	06/30/2021	Implementation	44740520
07/01/2021	12/31/2022	Closeout	303492

Section 7: Alternatives Analysis

23	**Alternative Solution(s) Analysis**
	Identify any alternative solutions considered to solve your business problem. You must provide a brief description, a high-level cost estimate, and the pros and cons for each alternative listed. Alternative A should describe your preferred alternative, followed by a brief statement why it is your preferred solution.

Alternative A		Pros	Cons
Name:	ORCA Replacement	Allows continued non-cash fare collection and participation in regional fare collection system.	High integration and equipment costs.
Estimated Cost:	$58M		
Description: This alternative design and implement the replacement of the current smart card fare collection system			

Describe why Alternative A is your preferred solution: This project will support the regional efforts required to implement a new technology to replace the current vendor-supported ORCA system when the contract expires in 2021.
What is the expected useful life, in years, of the proposed technology associated with Alternative A? 10 or more years

Alternative B		Pros	Cons
Name:			
Estimated Cost:			
Description:			

Alternative C		Pros	Cons
Name:			
Estimated Cost:			
Description:			

Alternative D		Pros	Cons
Name:			
Estimated Cost:			
Description:			

Section 8: Required Attachments in Innotas

24	**Cost-Benefit Analysis (CBA) Workbook**	
	Check the box below to confirm that you have uploaded a completed CBA in Innotas.	
	☒ A completed cost-benefit analysis workbook is included with this business case document	
25	**Benefits Achievement Plan (BAP)**	
	Check the box below to confirm that your agency has uploaded a completed BAP in Innotas. The project sponsor will be responsible for updating this plan.	
	☒ A benefits achievement plan is included with this business case document	
Section 9: Additional Technology Considerations		**Drop-down Values**
26.2	**Will the solution introduce a new technology(s) to the County?**	Yes
	This project will be implementing a new fare collection system using open architecture.	
26.3	**Can the project result in an enterprise solution for multiple groups in the County?** In other words, does it have functionality that might be re-used by others?	No
26.4	**Will the solution replace existing system(s)?** If yes, list the system(s) being replaced.	Yes
	The current ORCA Regional Fare Collection System	
26.5	**Have you considered requirements beyond immediate needs?** For example, have you factored in the likely growth in the number of users and amount of data over the estimated life of the solution? Have you taken into account any known or predicted future requirements of other County departments that may leverage the solution?	Yes
26.6	**Have you discussed your project and requirements with the appropriate group(s)** that will support the technology (e.g., security, KC Information Assurance staff, records management, server team)?	Yes
26.7	**Will the solution use or leverage technologies or applications from vendors in which the County has a significant investment?**	Unknown
	Solution providers have not been selected.	
26.8	**Will the solution allow the County to get a more holistic view of County processes and data?**	Unknown
26.9	**Have you reviewed KCIT's IT policies that may be applicable to your project?** Refer to the following link for more information regarding King County's IT policies. **http://kcweb.metrokc.gov/oirm/policies.aspx**	Yes
26.10	**If you answered "yes" to question 21.a, describe the proposed method(s) to interface/integrate with other systems.**	
26.11	**Will the solution require a client installation on a computing device?**	Unknown
26.12	**Will the solution be available in a format optimized for mobile devices to enhance the customer experience?**	Yes
26.13	**Will the solution require the movement of additional large amounts of data across the network?** If yes, use the space below to describe the # of records, type of processing, or type of files (e.g. voice, video) being transmitted.	No
26.14	**Will this project introduce any new type of information asset risk for which the County must develop a plan to manage?** If yes, describe the approach to accessing, storing, managing or using data that the County has not managed before and identify potential mitigation strategies.	No
26.15	**Will the solution create another version of existing data?** If a replica of an existing database must be made, use the space below to describe why it is necessary.	No
26.16	**Does the solution follow any applicable industry standards or Community of Interest (COI) standards** (e.g., HL7 standards for health records) that apply to the data in your project?	Yes
	The solution must be PCI compliant	
26.17	**Will the solution use protected information?** (e.g., Personally Identifiable Information (PII), credit card information, Protected Health Information (PHI), or Criminal Justice Information)	Yes
	The solution will use PII	
<END OF BUSINESS CASE QUESTIONS>		

Summary - Form 1

King County

Project Name ORCA Replacement Planning						**1**			
Submittal Date Mar-2018			**Version**			2017/2018 Bienniel Council Proviso			

Input data in white cells only

Year	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
Project Costs - *Current Request*	14,814	1,143,052	4,876,875	4,073,912	20,898,707	9,283,700	3,453,594	1,867,535	**45,612,189**
Contingency % (See Tab A)									**0.00%**
Contingency $	0	0	0	2,385,119	2,385,119	2,385,119	2,385,119	2,385,119	**11,925,595**
Project Costs - P*rior Appropriations*	0	0	0				0	0	**0**
Total Project Costs	14,814	1,143,052	4,876,875	6,459,031	23,283,826	11,668,819	5,838,713	4,252,654	**57,537,784**
Operating Costs	0	0	0	0	0	0	0	0	**0**
Total Cost Outflows	14,814	1,143,052	4,876,875	6,459,031	23,283,826	11,668,819	5,838,713	4,252,654	**57,537,784**
Benefits	0	0	0	0	0	0	0	0	**0**
Net Annual Cash Flow	(14,814)	(1,143,052)	(4,876,875)	(6,459,031)	(23,283,826)	(11,668,819)	(5,838,713)	(4,252,654)	**(57,537,784)**
Cumulative Cash Flow	(14,814)	(1,157,865)	(6,034,740)	(12,493,772)	(35,777,598)	(47,446,417)	(53,285,130)	(57,537,784)	**(57,537,784)**
Net Present Value	(14,814)	(1,103,434)	(5,526,904)	(11,106,458)	(30,262,119)	(39,404,944)	(43,761,882)	(46,784,164)	**(46,784,164)**
Identify Revenue Sources									
Project **Prior CIP Appropriation**	748,000								**748,000**
Project **2016 Omnibus**		409,866							**409,866**
2017/2018 Appropriation			21,466,584	21,466,584					**42,933,167**
Project									**0**
Total Project Revenue	748,000	409,866	21,466,584	21,466,584	0	0	0	0	**44,091,033**
O&M									**0**
Total Revenue	748,000	409,866	21,466,584	21,466,584	0	0	0	0	**44,091,033**
Total Project Cash Needed	(733,186)	733,186	(16,589,709)	(15,007,552)	23,283,826	11,668,819	5,838,713	4,252,654	**13,446,751**

Cost of Capital	Breakeven Per iod- yrs.* Non-Discounted	Breakeven Per iod- yrs.* Discounted	NPV $ (7 yr)	IRR %
5.00%	No Payback	No Payback	(46,784,164)	NA

* - IRR% will display as #num if an error has occurred. Contact PSB for help.

Project Costs - Form 2

Project Submittal		ORCA Replacement Planning 5/17/2016		**Solution Alternative Version**		1 2017/2018 Bienniel Council Proviso				

Input data in white cells only

PROJECT COSTS	Account	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
IT - Salaries, Wages & Benefits	511XX	0	0	150,000	150,000	150,000	150,000	150,000	150,000	750,000
Business Salaries, Wages & Benefits	511XX	14,814	311,766	337,050	345,496	355,841	364,737	373,856	383,202	2,103,560
Total Salaries and Benefits		14,814	311,766	487,050	495,496	505,841	514,737	523,856	533,202	2,853,560
Supplies	52110			10,000	10,000	160,000	60,000	10,000		250,000
EDP Supplies	52212									0
Consulting IT Services	53104		541,092	30,000	60,000	5,367,728	1,809,243	0		7,808,063
Regional Staffing	53102		223,824	197,790	202,735	207,803	212,998	218,323	223,781	1,487,254
Travel	53310									0
Hardware/Software	56740			0	0	10,918,648	3,639,549	0		14,558,197
System Vendor Equipement/Work	56780			3,997,035	2,584,237	1,979,971	1,979,971	1,979,971	389,107	12,910,293
Capital IT Lease - Principal	57303									0
Sales Tax @ 9.5%	TBD	0	0	0	0	1,037,272	345,757	0		1,383,029
Legal	TBD			75,000	75,000	75,000	75,000	75,000	75,000	450,000
Vehicles	TBD									0
Procurement	TBD									0
Quality Assurance	TBD		66,370	80,000	80,000	80,000	80,000	80,000	80,000	546,370
Reimbursable Costs	TBD									0
Warehouse for installation activities	TBD									0
Subscriber Radio Extended Warranty	TBD									0
Optional System Vendor Equipment/Services	TBD			0	566,444	566,444	566,444	566,444	566,445	2,832,221
Other	TBD									0
CAPITALIZED Project Costs		14,814	1,143,052	4,876,875	4,073,912	20,898,707	9,283,700	3,453,594	1,867,535	45,078,987

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Project Labor Costs - Form 2A

See attached sheet

Project	ORCA Replacement Planning			**Solution Alternative**	1									
Submittal Date	5/16/2016			**Version**	2017/2018 Bienniel Council Proviso									

Input data in white cells only

A	B	C	D	E	F	G	H	I	INPUT the Total Months from Column G for each Year (Months FTE/TLT will be on Project)									Total should = Col G
Business or IT	*PersonPer Month*	*FTE, TLT, or Loan-In Labor*	*Job Title*	*Work Start Date*	*Work End Date*	*Total Months on Project*	*Monthly Salary $*	*Monthly Benefit $*	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	
Business	1.00	FTE	IT Project Manager - Reg Bus Lead	1-Oct-15	31-Dec-15	3.00	8,783	5,561	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3
Business	1.00	FTE	IT Project Manager - Reg Bus Lead	1-Jan-16	31-Dec-16	12.00	9,090	5,756	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	12
Business	0.75	FTE	IT Project Manager - KCM	1-Mar-16	31-Dec-16	10.00	9,090	5,756	0.0	12.0		0.0	0.0	0.0	0.0	0.0	12
Business	1.00	FTE	IT Project Manager - Reg Bus Lead	1-Jan-17	31-Dec-22	72.00	8,110	5,592	0.0	0.0	12.0	12.0	12.0	12.0	12.0	12.0	72
Business	1.00	FTE	IT Project Manager - KCM	1-Jan-17	31-Dec-22	72.00	8,110	5,592	0.0	0.0	12.0	12.0	12.0	12.0	12.0	12.0	72
						0.00											0
						0.00											0
						0.00											0
						0.00											0
						0.00											0
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						0.00											0
						0.00											0
						0.00											0
	4.75							Total	3.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	171.0

Project Labor Costs - Form 2A

See attached sheet

Project	ORCA Replacement Planning	**Solution Alternative**	1
Submittal Date	5/16/2016	**Version**	2017/2018 Bienniel Council Proviso

Input data in white cells only

King County

Project Costs - Regular Positions (FTEs/TLTs)

Labor Dollars Summary - (Input Escalation Rate By Year Below)

A	B	C	D	E	F	G	H	I		0.00%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	
Business or IT (Drop Down Menu)	*PersonPer Month* (ie 1, .5, .3 etc)	*FTE, TLT, or Loan-In Labor*	*Job Title*	*Work Start Date* (Input Format M/D/Y (5/1/06))	*Work End Date* (Input Format M/D/Y (5/1/06))	*Total Months on Project* (Column F - E)	*Monthly Salary $* (Note: ITS and other project staff charging the project a rate should input the full monthly rate in this column, nothing in column I, and indicate org and role in D)	*Monthly Benefit $*	2015	2016	2017	2018	2019	2020	2021	2022	Total
Business	1	FTE	IT Project Manager - Reg Bus Lead	1-Jul-13	31-Dec-15	3.0	8783	5561	14,814	-	-	-	-	-	-	-	14,814
Business	1	FTE	IT Project Manager - Reg Bus Lead	1-Jan-16	31-Dec-16	12.0	9090	5756	-	178,152	-	-	-	-	-	-	178,152
Business	0.75	FTE	IT Project Manager - KCM	1-Mar-16	31-Dec-16	9.0	9090	5756	-	133,614	-	-	-	-	-	-	133,614
Business	1	FTE	IT Project Manager - Reg Bus Lead	1-Jan-17	31-Dec-22	60.0	8110	5592	-	-	168,535	172,748	177,067	181,493	186,031	190,681	1,076,555
Business	1	FTE	IT Project Manager - KCM	1-Jan-17	31-Dec-22	60.0	8110	5592	-	-	168,535	172,748	177,067	181,493	186,031	190,681	1,076,555
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
0	0	0	0	0-Jan-00	0-Jan-00	0.0	0	0	-	-	-	-	-	-	-	-	-
								Total	14,814	311,766	337,069	345,496	354,133	362,987	372,061	381,363	2,479,689

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Ongoing Operations and Maintenance Costs - Form 3

King County

| | Project | ORCA Replacement Planning | **Solution Alternative** | 1 |
| | Submittal D | 3/31/2018 | **Version** | 2017/2018 Bienniel Council Proviso |

Input data in white cells only

O&M COSTS	Account	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
IT - Salaries & Wages	511XX	0	0	0	0	0	0	0	0	0
Business Salaries & Wages	511XX	0	0	0	0	0	0	0	0	0
Total Salaries		0	0	0	0	0	0	0	0	0
Employee Benefit Costs	511XX	0	0	0	0	0	0	0	0	0
Supplies	52110	0	0	0	0	0	0	0	0	0
EDP Supplies	52212	0	0	0	0	0	0	0	0	0
Consulting IT Services	53127	0	0	0	0	0	0	0	0	0
Subcontract IT Services	53179	0	0							0
Travel	53310	0	0	0	0	0	0	0	0	0
Printing	53806	0	0	0	0	0	0	0	0	0
Training-IT	53813	0	0	0	0	0	0	0	0	0
IT - Internal Service	55xxx	0	0	0	0	0	0	0	0	0
Hardware/Software	56740	0	0	0	0	0	0	0	0	0
Communication Equipment	56780	0	0	0	0	0	0	0	0	0
Capital IT Lease - Principal	57303	0	0	0	0	0	0	0	0	0
Capital IT Lease - Interest	57304	0	0	0	0	0	0	0	0	0
Other (specify)		0	0	0	0	0	0	0	0	0
Other (specify)		0	0	0	0	0	0	0	0	0
Other (specify)		0	0	0	0	0	0	0	0	0
TOTAL O&M Cost		0	0	0	0	0	0	0	0	0

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Benefits Analysis - Form 4

Project	ORCA Replacement Plann *Additional instructions as comments*
Submittal Date	3/31/2018 Version 2017/2018 Bienniel Council Proviso

Input data in white cells only

	2015	2016	2017	2018	2019	2020	2021	2022	
Real Dollar Benefits $									
Revenues (specify)									
									0
									0
Reimbursements (specify)									
									0
									0
Cost Reduction (specify)									
									0
									0
									0
									0
									0
									0
Other (specify)									
									0
									0
Total Real Dollar Benefits	0	0	0	0	0	0	0	0	0
Intangible Benefits $									
Cost Avoidance (specify)									
									0
									0
									0
									0
									0
Other (specify)									
									0
									0
Total intangible Benefits	0	0	0	0	0	0	0	0	0
TOTAL Cost Benefit Inflows	0	0	0	0	0	0	0	0	0

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A. Contingency Calculation

King County

Project	ORCA Replacement Planning
Submittal Date	3/31/2018

Solution Alternative 1

Version 2017/2018 Bienniel Council Proviso

Input data in white cells only

Instructions: Fill in project self-rating and estimating accuracy - contingency will automatically be filled in on the summary sheet.Review the guidelines below if you feel a different contingency is warranted. For different contingencies, enter the percentage directly onto the Summary - Form 1 tab, row 7.

Background: Contingency is utilized to reduce the risk associated with completing a project. The intent is that creating a financial buffer will enable projects to deal with un-anticipated issues/activities, with higher risk projects needing larger contingencies. Contingency is added on top of project estimates/expectations to be utilized should unplanned activities occur. Project teams should strive to complete projects without using any contingency. When this happens, contingency is returned to the original funding source.

Contingency Determination

Project self-rating Organization historical estimating accuracy		See PRB self-rating guide on the intranet (1 or 2)
		http://kcweb.metrokc.gov/oirm/tools_templates/PRB-ProjectOversightSelfRatingForm.doc
		Average estimating accuracy of prior projects sponsored by this organization - as determined by project benefit realization reports to PRB. 1 = actuals within 10% of PRB phase 2 estimates, 2 = within 20%, 3 = greater than 20% or no history.
Score	0	Scores of 1-3 = 10%, 4 = 20%, 5 = 30% contingency

NOTE: A higher contingency factor can be assigned manually based on the contingency guidelines presented by the PRB- see link below for full details. To assign manually, enter % on Summary - Form 1 tab line 7

10% Contingency
· Project team is very experienced in estimating and completing this type of project
· Technology to be implemented is not complex, requirements are clear, user procedures will not change significantly
· Involves a single agency
· Project risk is mitigated through a fixed bid with a vendor

20% Contingency
· Project team has some experience in estimating and completing this type of project
· Technology to be implemented is moderately complex, involves multiple systems and some changes to user procedures
· Involves multiple agencies
· Part of the risk is mitigated through a fixed bid, but the project schedule and budget assume county staff will be available to support the project

30% Contingency
· Project team has little experience in estimating and completing this type of project
· New or very complex technology will be implemented; user processes and procedures will change significantly
· Involves many agencies or is countywide
· Most of project staffing is from loaned county staff where there is a risk the staff will become unavailable when needed due to, for example, competing priorities for their time

B. Cost supporting calculations

Project	ORCA Replacement Planning	**Solution Alternative**	1
Submittal Date	3/31/2018	**Version**	2017/2018 Bienniel Council Proviso

Enter supporting information below

King County

KCIT Services Estimates:

$150K has been set aside for KCIT labor each year starting 2017

2017 and 2018 are expected to be primarily for document review related to Networks, Database, Desktops (for CST terminals).

A00666 ORCA REPLACEMENT.xls

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C. Benefit supporting calculations

Project	ORCA Replacement Planning	**Solution Alternative**	1	
Submittal Date	3/31/2018	**Version**	2017/2018 Bienniel Council Proviso	

Enter supporting information below

King County

INSTRUCTIONS

Steps
1 - Review all Business Case and TQR guidelines prior to starting.
2 - Enter project name, submittal date, solution alternative, and version number on tab 'Summary - Form1'.
3 - Determine project contingency by filling in boxes on tab 'A. Contingency Calculation' or overiding as described.
4 - Complete Forms 2, 2A, 3 and 4 with cost and benefit figures for each year.
  Existing projects can enter project costs directly onto the 'summary - Form1' tab.   New projects must use tabs 2 & 2A.
  Adjust the starting year on the summary tab if needed.
5 - Include key calculations used to derive cost and benefit figures on tabs ' B.cost supporting calcs' and 'C. Benefit supporting calcs'.
  (Supporting calculations should clearly explain how the numbers in the Forms were derived/determined. Narrative is encouraged.)
6 - Review Summary information to verify overall costs and benefits.
7 - Copy summary information to appropriate section of business case or TQR for the recommended alternative.
8 - Create additional CBA for each solution alternative that warrants one.
  (projects over $250,000 should complete CBA for un-recommended but viable solutions. Depth of detail will depend each project)

Overview

The Cost Benefit Worksheet (CBW) document is a structured way of comparing the costs with the benefits of a proposed technology solution over time. Some government projects are not driven by financial motives, but other equally or more important factors. For this reason, some projects may not have monatarily quantifiable benefits related to the project. In that case, the benefits tab in this worksheet should be left blank and the cost sections completed. Non monetary benefits and metrics will be captured in the Benefits Realization Plan. A CBW should be performed on all technology solution alternatives that are considered feasible in order to more effectively identify the preferred technology solution. If the preferred solution is obvious, less rigor can and should be applied to the non-preferred solutions. For small projects, it may be appropriate to only fill out this sheet for the recommended solution. The CBW is then included within the Technology Qualifications Report supporting the business case. Typical areas to include are:
  · Cost
    o Hardware/Software
    o Personell (IT, Vendor, business - regardless of funding source, include capital and operations)
    o Business process re-engineering required for the implementation to be successful
    o Training on new tools and procedures
    o Overhead including project management, quality oversight, documentation, communication, etc…
    o New operational costs
  · Benefits
    o Cost reduction (support costs no longer required, reduced user staffing due to solution, etc….)
    o Cost avoidance (penalty and fee avoidance, planned expenditures no longer required, etc…)
    o Increased revenue
    o Re-imbursements

Also, continually re-ask what costs/benefits or other characteristics are different between this solution alternative and other solution alternatives and how those differences might benefit or hurt customers. Calling out these differences will improve the ability to accurately select a preferred solution alternative, and justify that selection to the business case and sponsors.

IT Project Benefits Achievement Plan (Version 2)
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.

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

King County Department/Agency Name	DOT/Transit
Project Title	ORCA Replacement Planning
EBS Project Number	1124456

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: Victor Obeso, Deputy General Manager, Transit

Section 3. Who is involved in developing the BAP?

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 BAP below:

Name	Title / Agency	Project Role
Dan Overgaard	Supervisor, DOT Transit Division	Stakeholder
Kathleen McMurray	Supervisor, DOT Transit Division	Stakeholder
Jill Krecklow	Finance Manager, DOT Transit Division	Finance Manager
Randy Boshart	IT Project Manager II, DOT Transit Division	King County Project Manager

Section 4. When should the BAP 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 BAP?

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?
Please use conceptual review, budget process, funding release, annual report, project implementation, or project completion.	*Date this document was updated*	*Who did the document updates?*	*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".*	*How long did it take to complete or revise the form at this stage?*
Conceptual review	09/04/2014	Kathleen McMurray	New, initial draft	6 hours
Annual Report	02/18/2015	Catherine Boon	Review only	.25 hours
Funding Release	08/27/2015	Catherine Boon	Update	.5 hours
Annual Report	01/22/2016	Kathleen McMurray	Corrected the end of the current vendor operating contract from 2020 to 2021	.25 hours
2016 Supplemental Budget	03/28/2016	Kathleen McMurray	Review only	.25 hours
2017/2018 Budget	07/22/2016	Randy Boshart	Updates to reflect that project includes detailed design and implementation.	2 hours
2017/2018 Budget	10/6/2016	Randy Boshart	Updates in response to council review evaluation	1 hour
2017/2018 Budget	10/16/2016	Jill Krecklow	Updates in response to council staff feedback	2 hours
Funding Release	1/18/2017	Randy Boshart	Update	.25 hours
Proviso Response	1/26/2018	Randy Boshart	Review. No changes.	.25 hours

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 underline 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

X 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 primary benefit of this project is replacing the existing system to maintain existing functionality (Category 3), with the measurable result of no loss of ORCA market share or apportioned fare revenue. The current state of electronic fare collection will likely provide some improvements to the customer experience with ORCA and those are the benefits explored in this section.

   This project is to fund King County's participation in the detailed planning and scoping to replace the existing regional ORCA smart card fare collection system. The ORCA agencies have agreed to a number of strategic objectives for the ORCA replacement project of which the following are designed to improve the quality of services provided to the public. These benefits include impacts from the updated system as well as functional enhancements and/or policy changes that could be supported by the new system.

   BENEFIT 1 (secondary): Improve customer experience by:
   - Making it easier for customers without banking relationships to get the benefits provided by an ORCA card (for example, intersystem transfers);
   - Providing an infrastructure that allows customers almost instantaneous availability of loaded value; eliminating the waiting period that exists with the current system.
   - Allowing payment from a variety of devices (smartphone, ORCA card, etc.);
   - Providing more options for off-board fare payment, allowing customers to pay without waiting in line to board the bus

2. ***How will you measure the benefit(s)? (How will you know if the benefit has been achieved?)***
   Customer satisfaction with ORCA and features above are implemented

3. ***What is the current baseline for this measure?***
   King County Metro Customer Satisfaction with fare payment is currently 77%

4. ***What is the target for this measure? (How much improvement will this project achieve?)***
   The target for customer satisfaction is more than 90% of customers are very or somewhat satisfied with ORCA.

5. ***When is the benefit likely to be achieved?***
   One or two years following project completion, estimated to be in the 2021-2022 timeframe.

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%. 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).***
   As stated above, the primary benefit of this project is replacing the existing system to maintain existing functionality (Category 3).

   BENEFIT 2 (secondary): System efficiencies will result in lower costs for agencies.

2. ***How will you measure the benefit(s)? (How will you know if the benefit has been achieved?)***
   System operating costs will be lower.

3. ***What is the current baseline for this measure?***
   Current system operating costs are $7.6 million with half of the expense coming from the vendor for the operations and maintenance of the system and the other half being agency costs for services provided to the region to support the system (e.g. fiscal agent services from Sound Transit; Mail center charges from King County Metro)
   While all the efficiencies will be identified during system design, a small one that can be baselined at this time is the cost of uncollectable fares resulting from bad credit card transactions in the autoload process. Currently system design of the autoload process results in value added to ORCA

cards before the credit card transaction is processed.   For 2017, the impact to the region is ~$320,000 including 2 FTE.

4. ***What is the target for this measure? (How much improvement will this project achieve?)***
   The target for the system operating costs is that they are lower than the baseline when that is developed. The target for autoload transactions being uncollectable will be $0.

5. ***When is the benefit likely to be achieved?***
   Some benefits, such as the uncollectible autoload costs will immediately be realized, others will likely take one to two years following project completion to be fully realized.

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 ORCA fare collection system was implemented in 2009 on technology platforms that were prevalent in 2003 when the system was designed.   A 10-year operating and maintenance agreement was signed with the vendor. The current ORCA system is proprietyary and individual components have already reached the end of their useful life and, while the vendor is making repairs, new devices are not available without starting a new development effort.
   Examples of system functionality that are at end of life or based on antiquated technology platforms include:
   - Analog communications with third party retailers. In order to support the system, a third party retailer must provide a phone and fax line over which data is sent. With the onset of digital technology, hardware and software that communicate over analog networks are getting harder and harder to find and support.
   - Back office computers are operating on software that is no longer supported. This includes some software that, due to security concerns, KCIT will not allow to be resident on devices that interact directly with the King County network.
   - Devices no longer available for purchase. Examples include devices such as onboard fare transaction processors and driver display units have reached the end of life and while the vendor is making repairs, we are not able to purchase new devices so are limited to the inventory on hand which could limit our ability to expand service.
   - No device inventory available. Stand Alone Fare Processors are no longer available as the original inventory has been deployed. Expansion of Rapid Ride or Link service rely on the ability to collect fares off the vehicle and stand alone fare processors are required.
   - Limited ability to modify system functionality.   With the proprietary system, the vendor is required when any system modification is needed.   This creates the inability to provide

updated functionality for customers and limits the business process improvement that agencies can implement.   In some cases, side systems are being developed in order to respond to changing circumstances.
-   Increased security risk and cost increases. The Customer Service Terminals are essentially personal computers that connect to the system.   In 2014, the devices were upgraded to eliminate a security risk at a cost of $1.1 million.   Additionally the back office computers recently had to be upgraded because they were operating on software that, due to security concerns, KCIT would not allow to be resident on devices that interact directly with the King County network. This could become an issue again in the future if the devices are not able to be updated.

At the end of the contract, the vendor will no longer be supporting the system and components.

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.***
Implementing a new system will remove the risk that is inherent with the current 10-year vendor contract. The proprietary system components make us dependent upon the vendor to provide, not only system services such as revenue apportionment, but also equipment such as stand alone fare processors which have reached the end of their useful life and are no longer available without a substantial new, proprietary development effort.   There is a risk that the new system will not be available before the vendor contract for the current system expires. Regionally, this risk is being addressed through development of transition plans and other risk mitigation activities.

BENEFIT 3 (primary): Maintain regional fare collection functionality.   Customers have come to rely upon the ability to seamlessly transfer if they pay their fare with an ORCA card.

BENEFIT 4 (primary): Customers continue to be satisfied with fare collection.

How will you measure the benefit(s)? (How will you know if the benefit has been achieved?)
Benefit 3: ORCA market share is currently calculated annually. The measure will be measured through no loss of ORCA market share. This will indicate that customers are continuing to use ORCA to pay for public transit.

Benefit 4: Customer satisfaction is measured annually in the survey of riders.

What is the current baseline for this measure?
Benefit 3: Baseline for the ORCA King County Metro market share is ~65%. Baseline will be examined during design and implementation to determine that if travel patterns and other changes may have changes to market share.

Benefit 4: Customer satisfaction in 2015 was 77% very satisfied. Customer satisfaction will be reviewed during the design and implementation phases to determine if the baseline needs to be revised.

What is the target for this measure? (How much improvement will this project achieve?)
Target is no loss of market share and no loss of customer satisfaction.   .

When is the benefit likely to be achieved?
Benefits will be achieved one year following system implementation.

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

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% 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 % of purchases receiving prompt payment discounts*	• *10 days processing time* • *10% of purchases are receiving payment discounts* • *$100,000 savings*	• *1 day processing time* • *30% of purchases are receiving prompt payment discounts* • *$400,000 savings*	• *2 day processing time* • *20% of purchases are receiving prompt payment discounts* • *$200,000 savings*

See next page

Summary – **ORCA IT Project**

Benefit	Measure	Baseline	Target	Actual
PRIMARY (Category 3): **Maintain use of ORCA for fare collection**	Increased ORCA market share	Baseline ORCA King County market share is ~65% at King County Metro.	No loss in market share	1 year following implementation
PRIMARY (Category 3) **Continued satisfaction with Fare collection**	Customer Satisfaction with Fare Collection	Baseline is currently 77% very satisfied	No loss of satisfaction	1 year following implementation
SECONDARY (Category 1): **Improved customer experience**	King County Metro Customer Satisfaction	77%	>90% of customers being very or somewhat satisfied with ORCA	1-2 years following project completion
SECONDARY (Category 2): **Lower costs for agencies due to system efficiencies.**	Lower system operating costs (e.g., cost of uncollectable fares resulting from bad credit card transactions in the autoload process)	Currently system design of the autoload process results in value added to ORCA cards before the credit card transaction is processed. For 2017, the impact to the region is ~$320,000 including 2 FTE.	Target for autoload transactions being uncollectable is $0. Others are to be determined.	1-2 years following project completion

Next Generation ORCA

Risk Management Plan

Date: 1/24/18

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TECHNOLOGIES

Table of Contents

Document Control

Rev.	Date	Author	Comment
0.1		Craig Jaffe/Curtis Pierce	Outline
0.2		Craig Jaffe	First Draft
0.3		Curtis Pierce	Comments/ Suggestions
0.4		Craig Jaffe	Not Used
0.5	June 14, 2016	Liz Malliris	Edit/format draft Risk Plan; to RPT Team for review
0.6	July 12, 2016	Craig Jaffe	Updates based upon feedback
0.7	July 24, 2016	Curtis Pierce	Reviewed open comments and resolved
0.8	July 27, 2016	Craig Jaffe	Updates based upon feedback
1.0	July 27-28, 2016	Curtis Pierce/Liz Malliris	Review; edit/format; to RPT Team for review
1.1	January 24, 2018	Brittany Esdaile/Scott Corbridge	Update based on risk register modifications

Purpose of Document

This Risk Management Plan will be used to manage program risks associated with the next generation ORCA design, procurement and implementation. The plan will describe the approach for identifying, and communicating risks (see definitions, below), and will support the program by identifying foreseeable risks, estimating their impacts and defining responses to the challenges associated with each risk. The document will capture the process, tools, owners, and roles and responsibilities within the team. This document will cover items to manage both risks and issues as defined below. When the program moves to the implementation phase issues will move to a tool for management, this plan will be updated by the team to reflect the change and the process for managing issues in a separate tool.

> *"The purpose of risk management is to change the future, not to explain the past."*
> The Book of Risk, Dan Borge

Document Definitions

- Risk – An event or condition that, if it occurs, could have a positive or negative effect on a program or project's objectives.
- Issue – An event or condition that has occurred and now either requires action or no action, depending on the impact on program or project's objectives.
- Risk Management – The process of identifying, assessing, mitigating, monitoring, and reporting risks.

The intended audience of this document is the Regional Program Team (RPT), the consulting team, and the ORCA Steering Committee.

Risk is not a science; it is a continuous process that must be part of the daily activities with ownership across all team members. The areas highlighted below are designed to establish processes for identifying, analyzing, mitigating, monitoring, reporting and communicating risks. Tools and roles and responsibilities are identified as well. This document is designed to establish definitions to start risk management activities, but the success of risk management is placed in the team and their continued management of the risk and issues matrix for the duration of the program.

Scope

As part of the next generation ORCA Plan it is critical to create a Risk Management Plan that manages risks and includes mitigation strategies. This will include identification of risks and analysis (both qualitative and quantitative) to identify responses or mitigation for the risks, and constant monitoring and control of risks through the program as part of the project management methodology. This Risk Management Plan will include the management of issues for this phase of the program.

This document covers the processes to identify areas that pose schedule, cost, institutional or technical risks. Institutional risks include stakeholder concerns such as stakeholder buy-in, business process assessment, and staffing. Technical risks affect the completeness and correctness of the resulting output, schedule risks address slippage, and cost risks include excess budget expenditures. This plan covers roles and responsibilities and the registers used to manages risks and issues.

The Risk and Issues Registers will be located within the Program's SharePoint site. The attributes of the registers are described the Risk and Issues Registers section at the end of this document. The RPT and consulting team will initially populates Registers. In addition, the entire program team will collaboratively maintain the Risks and Issues Registers, and review and update them periodically during the course of the program.

Processes

The processes identified below follow the traditional risk management methodologies of the Project Management Institute (PMI), International Organization of Standardization (ISO) 31000, etc. The graphic below captures the key areas that are then summarized below.
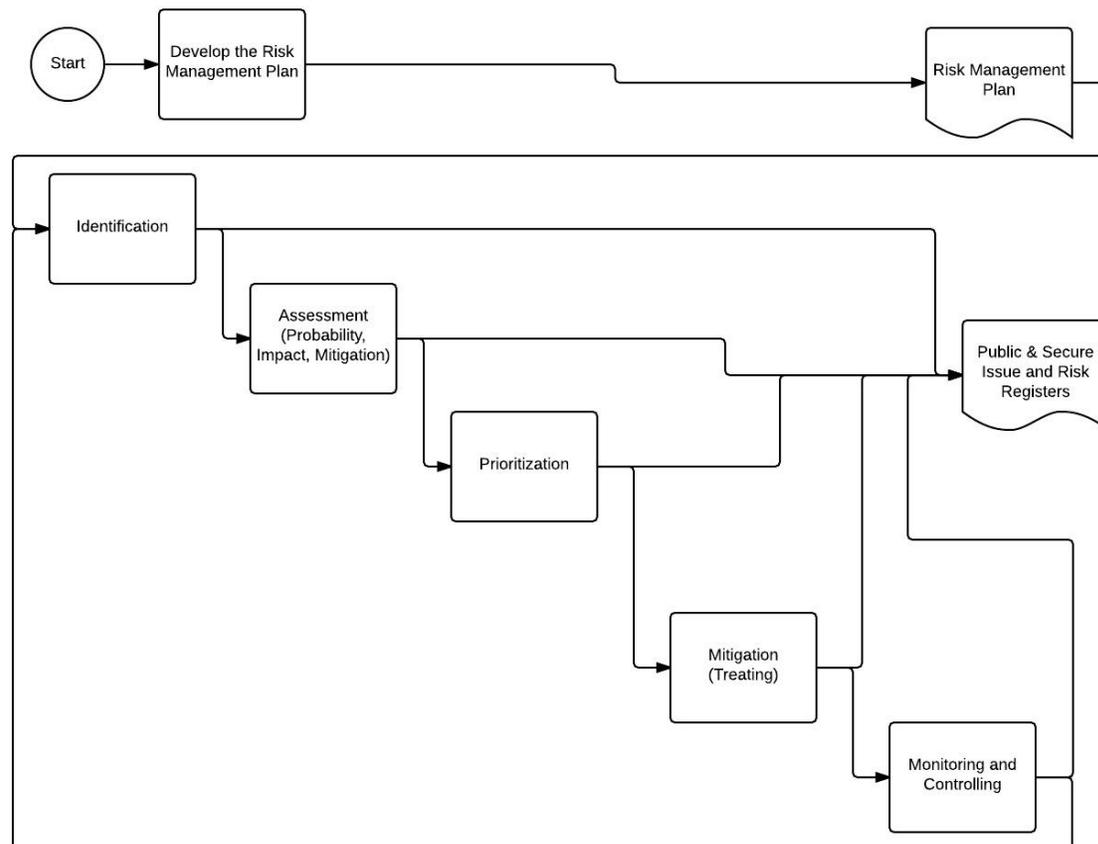
Identification

The identification of risks and issues involves collecting candidate risks and issues from program participants and meetings. The identification process will be part of program management activities and processes. Risks and issues can be added to a registers by any program team member.

Risks and issues will also be identified during focused sessions when deliverables are reviewed, workshops are conducted and program phases change. Risks should be an active objective of these sessions with the working team spending time dedicated to looking for risks. At the discretion of the risk manager, ad hoc risk identification meetings can be held. These meetings can play an integral part of the program, especially when working through security, PII-and PCI-compliance items or information risks.

Identification methods to be used:

- Program Management Meetings – risks will be identified during normal program meetings; the program manager, program team and others are all responsible for identifying risks during these meetings.
- Deliverables – when deliverables are being created and reviewed, program team members are responsible for identifying risks.
- Workshops – general workshop sessions reviewing program solutions will have dedicated time to identify risks associated with the specific topics.
- Phase Kick-Offs – during each transition between phases, the program and risk managers will solicit feedback from the program team on potential risks.
- Risk Brainstorming – working sessions will be held specifically focused on risk identification. The risk manager will facilitate the session with program members and topics. This will be conducted periodically throughout the program.

The risk manager will own the registers and be responsible for making sure all identified risks are included before reviews are conducted during the assessment and prioritization meetings.

Assessment

The objective of risk and issues assessments is to translate items on the registers into information that can be used to aid decision-making and validate program risks and issues. This information will help determine if there are actions to be taken, such as mitigation and communication activities as well as adjustments to the program budget or schedule.

Assessments of risks and issues will be conducted in working sessions lead by the risk manager with the appropriate team members to analyze and assess a risks impacts, probability, mitigation, and communication activities. Results of the assessment workshops will be documented in the Risk and Issues Registers, with all columns being populated for each

identified risk. Please see the later section on Risk and Issues Registers for fields that will be required. For issues, there is no need to evaluate, but mitigation and communication activities will be populated.

One of the most important activities during the workshop is the population of the response activities. These are the program team's recommended courses of actions against each risk and issue. Initially this will mostly be based upon expert knowledge.

Along with scoring, mitigation, and communicate elements, these meetings will also determine when risks or issues can be retired. These will be risks that were eliminated or mitigated and issues that have been closed.

Highlighted below is the scoring criteria used for risks and issues. As the program progresses, it might be useful to add elements like resources, agency impact, etc. At this stage, these are deemed sufficient. It will be the risk manager's responsibility to add elements, if appropriate.

Evaluating risks

During assessment workshops, risks will be evaluated and given rankings to determine prioritization. Below are the elements for evaluating each risk based on program knowledge.

Probability – The overall likelihood of the risk element occurring.

Ranking	Description
Certain	Very likely. The event is expected to occur in most circumstances as there is a history of regular occurrence.
Likely	There is a strong possibility the event will occur as there is a history of frequent occurrence.
Possible	The event might occur at some time as there is a history of casual occurrence.
Remote	Not expected, but there's a slight possibility it may occur at some time.

Impact – Factors that impact the program in terms of cost, schedule and scope.

Ranking	Description
Critical	A risk event that, if it occurs, will have a severe impact on achieving desired results to the extent that one or more of its critical outcome objectives will not be achieved.
Major	A risk event that, if it occurs, will have a significant impact on achieving desired results to the extent that one or more stated outcome objectives will fall below acceptable levels.

Moderate	A risk event that if it occurs will have a moderate impact on achieving desired results, to the extent that one or more stated outcome objectives will fall well below goals but above minimum acceptable levels.
Minor	A risk event that if it occurs will have little or no impact on achieving outcome objectives.

When looking at cost, schedule and scope impact, the following will be considered:

- Contracting processes.
- Stakeholder requirements and demands.
- Program management processes, making sure risk management is incorporated into the processes.
- Program governance.
- Stakeholder and program team decision-making.

Risks to end-customers can take the form of deterring them from using the system, customer information security and a reduction in customer satisfaction. The scoring above combines these three elements.

During the initial planning and design phases of the program, multiple high-level risks be lumped into one element for evaluating, prioritizing and monitoring. As the program moves to subsequent phases, these risks will need to be broken into more detailed elements to be properly managed. This will provide more clarity on impacts and allow for more targeted plans for mitigations during the proper phase of the program and still allow for insight into known future risk areas. Risk proximity will be used to indicate these broad high-level risk areas. As an example, the risk of "Poor customer experience during transition" could be listed on the risk register during the planning and design phases. When the program moves to implementation this risk could be replaced with one or more detailed and tangible risks as to why customers could have a poor customer experience.

Evaluating issues

During the assessment workshops, issues will be evaluated and prioritized for action. Below are the elements for evaluating issue priorities based on program knowledge.

Priority	Description
1	Critical issue; impacts significant portion of the program; needs immediate attention.
2	High program impact; needs attention quickly.
3	Routine problem that can be addressed through the course of the program.

4	Long-term problem; no specific commitment to actions. Mostly used for tracking potential future items.

Prioritization

The prioritization of risks will be simple; by leveraging the information from the assessment processes, risk will be reviewed using the ranking of risk significance (calculated from the probability and impact scores). The risk's proximity will also be taken into account in the prioritization process and this will be done at the risk manager's discretion with input from the risk owner. It will generally start with all high significance risks being reviewed first.

Risk Responses and Associated Actions

The risk response process involves actions to avoid or reduce risk, or manage risk to an acceptable level. In some scenarios, the risk and its impact might be inevitable, so mitigation will look to reduce or manage the impact. In addition, some risks that are inevitable will require financial and schedule planning to "finance" the risk.

There are a number of response types for addressing risk. They include:

- Transfer - Some or all of the risk is transferred to a third party.
- Avoid - The risk is avoided by changing the project in some way to bypass the risk.
- Mitigate - Action is taken to reduce either the likelihood of the risk occurring or the impact that it will have.
- Accept - In active acceptance a separate contingency reserve is kept to manage the risk if it occurs, and in passive acceptance nothing is done except acknowledging the risk.

The actions taken and decisions made about risk response will be documented in the Risk and Issues Registers. All actions defined in the risk register are linked to a task in the Program's task management tool as an added assurance that they are actively managed. This also helps to ensure the response(s) to a risk are actionable and has an outcome that will transfer, avoid, or mitigate the risk.

Monitoring and Controlling

Monitoring and controlling is all about making sure identified risks and issues are up to date and program team members are aware and following risk management processes. The processes of monitoring and controlling risk is the responsibility of the risk manager in association with the program manager, project managers, and the QA manager. All are expected to actively make risk and QA processes and activities part of status reporting, working meetings, deliverable reviews and updating the registers. In addition there will be a quarterly risk review meeting with the entire team (program manager, risk manager, project managers, program team, QA, and technical consultants) to assess, prioritize, and coordinate response

actions on all risks and issues listed in the program overview registers. Close monitoring and control of items on the Risk and Issues Registers is the cornerstone to successful management of them.

Roles and Responsibilities

It is important to note the roles and responsibilities captured here relate to quality assurance (QA). QA will operate hand-in-hand with risk management, testing, and change control. Please see the Systems Engineering Management Plan for a list of the documents that will detail the development of quality assurance processes.

Risk Manager Responsibilities

The risk manager position is not a full-time job, but at times will be a daily activity. The risk manager is responsible for managing and controlling the risk register, identifying when assessment and prioritization workshops need to be conducted, and providing input into program management status reports.

The risk manager is responsible for managing owners to ensure all risks and issues are managed, mitigated and reporting on properly. The risk manager is also responsible for identifying any necessary changes in processes, identification, assessment, prioritization and reporting. As the program progresses, the management of risk can change as well as the frequency of activities associated with managing risk.

Responsibilities:

- Approval and ownership of the risk management plan (this document).
- Identifying, collecting and recording risks and issues
- Reviewing and managing the Risk and Issues Registers, making sure it is up to date and available to the program team.
- Moving risk to the issue register and vice versa when appropriate.
- Initiating and facilitating assessment and prioritization meetings.
- Monitoring the risks and issues registers.
- Updating Program Management and reporting on risk status.
- Communicating risks and issues using the program communication plan.
- Adding risk scoring elements, if appropriate.
- Monitoring the risks and issues process to determine if there are needed adjustments.

Program Manager Responsibilities

The program manager will provide general oversight to the risk manager and ensure risks are part of the reporting process and included in other program management activities, such as deliverable reviews, strategy workshops, steering committee meetings, etc.

Project Managers

The next generation ORCA Program is made up of multiple separate projects. For each of those projects the project manager will maintain a separate risk and issues register to manage day to day risk. It is the responsibility of the project manager, with the support of the risk manager, to mark any risks or issues that need to be elevated to the program risks overview register. Adding a risk to the overview register will give the program team visibility to support risk assessment, prioritization, and coordinate response actions.

Program Team Responsibilities

The entire program team plays a role in risk management. For risk management purposes, the program team will consist of the RPT team and the consulting team. They are responsible for identification and will contribute to the assessment and prioritization of risks. The program team will also assist in risk response and communication when necessary.

Risk Owner

The risk owner should have both an understanding and an ability to influence its outcome. The risk owner will lead the response to the risk. The owner should be in a place to coordinate and implement the activities highlighted under the response plan.

Once a risk owner is assigned, they are responsible for providing updates. The risk manager will continue to monitor the risk, update the risk register, and work with the risk owner on executing the response and communication plan associated with the risk.

Risk and Issues Registers

The majority of the risk management activities will be managing the Risk and Issues Registers. There will be one spreadsheet with multiple worksheet tabs located on SharePoint:

1. Risk Registers – a dedicated worksheet to manage high-level program risks and a dedicated worksheet for each of the individual project's risk.
2. Issues Register – a dedicated worksheet to manage high-level program issues and a dedicated worksheet for each of the individual project's issue.
3. Sensitive Risks/Issues – dedicated worksheet tab to manage sensitive items, such as those related to security, which will be password protected and accessed by the core program team only.

The Risk and Issues Registers will be incorporated in general program management practices, reviewed during status meetings, and be part of the kick-off of each new phase of the program. It will also be part of deliverable creation and reviews, and updated ad hoc by program team members. Risks and issues are to be labeled separately in the document. Risks and issues will be monitored on a continual basis once the registers are established. Updates and monitoring
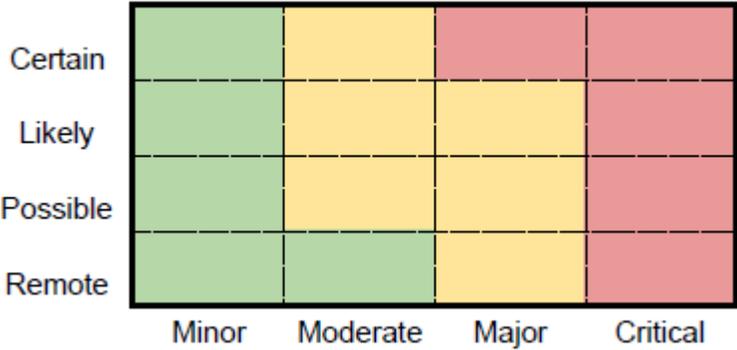
will be done by the risk manager and individual risk owners. As highlighted in the processes, when applicable, the risk manager will hold assessment and prioritization workshops to populate the details of the Risk and Issues registers.

Initially, the registers will be managed by the program team and risk manager, with everyone adding to the register when items arise and owners updating as appropriate. Depending on the size of the team and the Risk and Issues registers, as the program moves from phase to phase, the process could move to the use of forms for submittal of new items and updates through the risk manager. This should be addressed by the risk manager when appropriate.

Risk Register Attributes

Column	Description/Use
HLPO	Flag to mark risk for High Level Program Overview Risk Register.
Risk ID	Risk numbering, including a project identifier. • O2 – program risk • SI – systems integrator risk • DR – data access and reporting risk • RN – retail network risk
Risk Description	Statement summarizing the risk and identifying what requires monitoring in terms of potential consequences.
Risk Trigger(s)	Trigger(s) that the risk is becoming an issue or has reached a point that requires action but is not yet an issue. Could also be a trigger to increase probability, impact, or proximity (not passing of days).
Expected Result, No Action	Describes what will happen if the risk becomes an issue and no action is taken.
Risk Owner	Each risk will have one owner and the owner must be a RPT member.
Risk Probability	• Certain – A risk event that, if it occurs, will have a severe impact on achieving desired results to the extent that one or more of its critical outcome objectives will not be achieved. • Likely – A risk event that, if it occurs, will have a significant impact on achieving desired results to the extent that one or more stated outcome objectives will fall below acceptable levels. • Possible – A risk event that if it occurs will have a moderate impact on achieving desired results, to the extent that one or more stated outcome objectives will fall well below goals but above minimum acceptable levels. Remote – A risk event that if it occurs will have little or no impact on achieving outcome objectives.
Risk Impact	• Critical – A risk event that, if it occurs, will have a severe impact on achieving desired results to the extent that one or more of its critical outcome objectives will not be achieved. • Major – A risk event that, if it occurs, will have a significant impact on achieving desired results to the extent that one or more stated outcome objectives will fall below acceptable levels. • Moderate – A risk event that if it occurs will have a moderate impact on achieving desired results, to the extent that one or more stated outcome objectives will fall well below goals but above minimum acceptable levels. • Minor – A risk event that if it occurs will have little or no impact on achieving outcome objectives.

Risk Significance	There are three levels - Low, Medium, and High. •
Risk Proximity	This would typically state how close to the present time the risk event is anticipated to happen (e.g. Imminent, one of the next 8 quarters, or one of the years after the next 8 quarters. • Also serves as a place to mark the risk as closed (no longer a risk) or that it is now an issue.
Response Type	• Avoid – The risk is avoided by changing the project in some way to bypass the risk. • Transfer – Some or all of the risk is transferred to a third party. • Mitigate – Action is taken to reduce either the likelihood of the risk occurring or the impact that it will have. Accept – In active acceptance you keep a separate contingency reserve to manage the risk if it occurs, and in passive acceptance you do nothing except note down the risk.
Response Description	Statement summarizing the response action(s) if there is not yet a link to task in the program's task management tool.
Response Owner	• Each risk will have one or more response action and there will be one owner for each of those response actions. Owners could include members from the RPT, technical consulting team, OSC, Agency leads, or current ORCA operations team.
Response Proximity	This would typically state how close to the present time the response action(s) should be performed.
Last Update	Documents the last update and who made that updated.
Response Action 1 … x	A short description of the response action that serves as a link to a task program's task management tool.

Issues Register Attributes

Column	Description/Use
Issue ID	Numbering.
Issue Title	Issues.
Issue Description	Statement summarizing the issue, what has occurred, cause, suggested resolution, if applicable, and impact.
Risk ID	Corresponding risk ID from the risk register, if applicable.
Status	Active – issue details defined and being actively monitored. Resolved – issue successfully addressed. Closed – issue no longer relevant but not resolved.
Project	Which project the risk relates to (e.g., Data Access and Reporting,, Vending Machines, Retail Network, etc.)
Issue Type	Define type of issue, change request, resource, problem, security, etc.
Cause	Details on how the issue came to be.
Ownership Columns	Initial risks will have a group assigned; once the assessment has been done, an individual owner will be assigned. Ownership will be tracked for: RPT Owner and Non RPT Owner.
Date Columns	Raised Date, Expected Resolution Date, Last Updated Date, and Closure Date.
Raised by	Who raised the issue.
Priority *(Severity introduced during the design phase)*	This will identify how quickly the issue should be addressed 1 - Critical 2 - High 3 - Routine 4 - Long Term
Resolution activities	Details on activities performed to address/resolve issue. Each update should have a date, initials and summarized list of actions. Ex.: 07.27.2016, CMJ, updated Concept of Operations with new security standards information.

Status Reporting

Risk Management will be discussed as required during weekly status reporting meetings of the RPT and consultant team. This should be an integral part of the meeting, highlighting newly identified risks, updating response and communication activities, and ensuring risk monitoring is part of weekly program management activities.

Summary risk information from the register will be presented during ORCA Steering Committee status meetings, highlighting actions being taken for mitigation and identifying risk where potential action is required from the ORCA Steering Committee.