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January 3, 2014

Mr. Thomas Lannom, Director  
Revenue Bureau  
Mr. David Shaff, Director  
Water Bureau  
City of Portland  
1120 SW Fifth Avenue  
Portland, OR 97204

Gentlemen:

In accordance with our statement of work, Pacific Consulting Group, Inc. (PCG) is pleased to submit our *Post-Implementation Assessment Report* for the recently implemented Quarterly Read Monthly Statements (QRMS) Project. As detailed in our statement of work, PCG was to assess whether the business and technical objectives of the QRMS project were achieved based on the project scope and acceptance criteria. We were also to validate whether the previously established project outcome metrics and success criteria were being met and, as a result, whether the intended value of the project had been realized. We conducted post-implementation interviews with selected project participants, executive management of the Water and Revenue Bureaus, and Cayenta executive management.

## **PROJECT BACKGROUND**

In late November 2011, the City Council directed the Bureaus of Water and Environmental Services to implement a monthly billing solution with minimal cost to ratepayers. The two bureaus working with the Revenue Bureau, which provides technical support for the Cayenta utility customer billing system, elected to utilize functionality in a newer version of the software system. Under the new system, water meters are still read and bills calculated on a quarterly basis, but only one-third of the customer bills are due each month. The bureaus, working with Cayenta, initially determined that a solution used by the city of Grand Rapids would meet Portland's needs with minimal modifications.

Previously, when the Cayenta system was implemented in April 2006, a capability referred to as "*budget billing*" was implemented. This function allowed customers, in consultation with the Water Bureau, to divide their previous year's bill into twelve equal payments for the next year. In the final twelfth period billing process, the Water Bureau would "true-up" the customer's bill to address accumulated over or under payments over the prior eleven periods. This billing arrangement was very labor intensive for the Water Bureau and was not viewed as a solution that could be effectively implemented for a large number of customers.

The Water and Revenue Bureaus defined a Project Charter that planned for a multi-phase effort intended to result in an acceptable billing solution by June 2012. The implementation, using the “Grand Rapids” software solution, would also require an upgrade to newer Cayenta software (from version 7.5.2.13 to 7.5.3.18).

As the City and Cayenta began to explore the Grand Rapids solution in the spring of 2012, it became apparent to both the Water and Revenue Bureaus that the planned solution would not successfully meet the City’s needs. The project was “re-set” and a new implementation date of December 2012 was planned. The City and Cayenta began a design process to meet the City’s desired requirements as initially directed by the City Council. It is important to note that throughout the project, the City’s project scope did not materially change.

Delays occurred in the software upgrade, a required step in moving forward with QRMS. The upgrade was completed in September 2012. The City and Cayenta then turned their attention to the software functionality to address QRMS objectives. Over the next several months, an increasing number of software defects were identified resulting in additional delays as Cayenta attempted to meet the City’s requirements. Finally, in March 2013, the City, represented by the directors of the Information Technology, Revenue, and Water Bureaus, met with Brad Atchison, Cayenta’s Executive Vice President, to assess the project and how the City could best move forward. The meeting resulted in a new contractual task order for Cayenta with strict delivery and payment conditions. The project was able to move forward after this reorganization to a successful implementation in October 2013.

### **PROJECT OBJECTIVES**

The project’s success factors, as stated in the Project Charter were to implement:

1. Accurate and timely monthly bills/statements for accounts formerly billed quarterly. Approximately 7,500 budget bill customers will be grandfathered into the new custom modification to receive monthly billing.
2. Accurate Cayenta Utilities (CU) monthly statement enrollment including eCommerce Web entry and CU system user entry.
3. End-user training and implementation of business process changes to support monthly billing and statements workload.
4. Customer education and acceptance.

With respect to the four project success factors identified above, we believe the first objective has been substantially achieved, although the number of budget billing customers is approximately 4,800 rather than 7,500 as originally estimated. Full implementation availability for all customers is scheduled to begin in early 2014. We believe it is premature to “declare victory” for QRMS until significantly more customers (i.e., at least 10 percent) are successfully enrolled and billed for at least a full quarter. The second objective has not been addressed to date as enrollment for the budget billing customers was initially performed by the Revenue

Bureau prior to implementation. Subsequent to the initial implementation, customer conversion has been performed by Water Bureau Customer Service staff. Once QRMS is opened to other customers in 2014, customers will begin using the web enrollment features. The third objective has been accomplished, and the Water Bureau staff is using the system's QRMS functionality. As noted above, given the small enrollment to date, the assessment of the fourth objective cannot be made until significantly more customers enroll.

### **STATUS**

The QRMS project was implemented in October 2013. Beginning in October, the City began the process of converting previous budget billing customers to the new monthly statement process. This conversion of existing budget billing customers is planned to take approximately ninety days to finish as each individual customer's bill becomes due. The budget billing program will be discontinued. In January 2014, the Water Bureau plans to begin notifying all other customers of the option to select monthly statements rather than the current quarterly statements. The City has certain requirements that customers must agree to before converting to monthly statements, including use of a "Portland Online" account and agreeing to receive their billing statement electronically.

As of the date of our report, approximately 4,700 of the 4,800 customers who used budget billing have been converted to monthly statements. This represents about three percent of the total 175,000 customers of the City who are billed quarterly and would be eligible for the QRMS functionality. This is a small sample and the City should anticipate that additional issues will surface as more customers move to monthly statements. While the City's process of reading meters quarterly and then dividing the bill into three future monthly payments appears simple on the surface, it quickly becomes much more complex as variables related to prior-period bill cancellations and rebilling are added. This is further complicated by seasonal rate changes that affect bill calculations.

### **LESSONS LEARNED RECOMMENDATIONS AND OBSERVATIONS**

This report reflects our independent and professional opinion as to the lessons learned on the QRMS Project's implementation phase and is not intended to reflect all of the many and varied opinions of the individuals who participated in the project. In some cases, there were positive outcomes (*PO*) for this project that are recommended for future projects while in other cases areas that need improvement (*NI*) are identified for future projects. The lessons learned are classified into the following areas:

- Project Management and Governance
- Scope and Functionality
- System Testing
- User Training
- Budget, Contract, and Staff Management

We classify our observations and recommendations within each component of implementation as either:

- *Positive Outcomes* – These are tactics and strategies that the project employed well for the most part and should be emulated by future projects. We have identified the lessons learned by coding it “PO” if it reflects a positive outcome.
- *Areas for Improvement* – These are areas that the project could have done differently or avoided and should be considered by future projects. Recommendations for improvement are identified. We have identified the lessons learned by coding it “NI” if in our assessment of this project we believe that it needs improvement.

In some cases, QRMS may have struggled initially with an area that needed improvement but ultimately adopted a practice or solution that resulted in a positive outcome. These will be indicated by (*NI*→*PO*).

### **Project Management and Governance**

- *Project Management Expertise* – The history of the customer information system at the City clearly demonstrated the importance of selecting and appointing a qualified City project manager. The manager selected needs to have very specific experience developing, implementing, and maintaining a CIS. In our opinion, as we reported throughout the project, the City’s Project Manager has significant relevant experience with the City’s Cayenta software system as well as knowledge and experience with the City’s Water and Environmental Services business operations. (*PO*)
- *Project Sponsor Commitment* – The QRMS Project had a Project Sponsor who was engaged and involved throughout the project and very committed to its success. (*PO*)
- *Executive Team Participation* – Throughout our involvement with the project (July 2012 – December 2013), there was never an active steering committee that met regularly. While executive management was available and did get involved in early 2013 when issues arose related to Cayenta’s delivery performance, they did not meet on a regular schedule throughout the project.

Executive management participation at the highest level is critical on enterprise projects, but was not readily evident and effective during the early stages of the project. As stated earlier, executive management was able to play a key role in the later turn-around of the project. The lack of a bureau-based steering committee was probably due to the initial limited size and planned duration of the project. The City did utilize the independent Technology Oversight Committee for monthly project reporting; however, an internal City steering committee was not used for the project. While the presence of a bureau-based steering committee may not have altered the project’s duration or costs, it would have provided a forum for discussions on project delays and possibly could have lead to

earlier discussions with Cayenta on their performance. We believe every IT project that has a duration of at least a year or that has a significant impact on either internal or external customers deserves the regular attention of a steering committee. (NI)

- *Project Planning Estimates* – The project planning estimates we reviewed and those provided to the Technology Oversight Committee on a monthly basis throughout the project did not include internal City labor charges. We believe this is a significant omission in both initially assessing the feasibility of a project, its resource requirements and providing ongoing project oversight. We recommend the City establish a threshold budget (e.g., \$50,000) where projects are required to include City labor in both the initial project budgets and ongoing financial reporting. (NI)
- *Detailed Project Work Plan* – A resource-loaded project work plan was recommended by PCG in our Initial Assessment in July 2012. However, the plan was not maintained on a regular basis throughout the project nor was the Water Bureau staff always identified for individual tasks in the plan. At times during the implementation, we did not believe the City staff fully accepted the importance of the plans. Clearly, there was a major “reset” of the project schedule at a juncture when the current schedule clearly became unachievable. We believe the amount of re-planning could have been avoided or at least minimized with the help of a fully adopted, supported and “institutionalized” project plan that is understood by all participants and is used to manage the project’s activities and resources. We believe the project manager and steering committee should understand the importance of the plan and convey the importance of accurate updates to their staffs. As stated, the project plans need to be an integral part of the project management approach and thus be institutionalized as a key component of the project management methodology. (NI)

### **Scope and Functionality**

- *Requirements and Detailed Design* – The City and Cayenta initially believed that a custom modification developed for the city of Grand Rapids could be quickly transferred to the City to accomplish the objectives of QRMS. In the spring of 2012, it became apparent to both groups that this customization would not meet the City’s needs. A design was then developed and agreed to by both parties to develop customizations specific to the City. However, we believe, the design was not sufficiently detailed to address fully the various unique requirements to Portland. As a result, both Cayenta and the City expended additional design and developments efforts that extended well into 2013. Future projects should require a thorough design document, approved by the end users, before proceeding into development. (NI)

### **System Testing**

- *User Testing Activities* – The Revenue Bureau has developed a set of standard Cayenta test scripts over the last several years that are utilized when software upgrades, patches,

or customizations are implemented. This standard test deck was supplemented with additional scripts for the unique testing requirements of QRMS. PCG recommended that the Water and Revenue Bureaus review this deck to determine appropriate scripts for user acceptance testing. In our post-implementation interviews, we noted that while the recommended activity was conducted, the Water Bureau recognizes that additional time should be planned on future projects to better understand the standard test scripts and make appropriate revisions to address fully the user acceptance testing requirements for the specific planned project. (NI)

### **User Training**

- *Schedule Business Process Redesign Activities so that the Products of this Activity can be Effectively Incorporated into the Training Program* – While the project had several meetings during 2013 devoted to QRMS-driven business process changes, the Water Bureau did not fully understand nor do they believe they were adequately briefed on the full extent of changes until the final user acceptance testing and training activities. This was very late in the project and, as a result, the Water Bureau users did not believe they were fully informed or prepared for the changes. We concur that the QRMS business redesign tasks were not fully addressed prior to system configuration and that business processes were not fully incorporated into the end-user training activities. The feedback we received was that the trainers were unfamiliar with some current Water Bureau processes and were simply training on the software navigation and functionality. This was a missed opportunity to build not only processes based upon best practices, but also to incorporate them into the training program. (NI)

### **Budget, Contract, and Staff Management**

- *Insist Upon Vendor Contract Performance* – As noted above, the City has utilized Cayenta's customer information system package since it was successfully implemented in April 2006. Clearly, there is a long-term vendor relationship with Cayenta. However, the initial task order for the QRMS implementation was essentially a time and materials contract with neither any specific deliverables nor any performance payment terms. While we believe both parties worked in good faith to successfully implement QRMS, the contract provided no protection to the City. In March 2013, the City negotiated a new task order with Cayenta to complete the QRMS implementation. The second task order had specific measurable performance criteria with payment tied to successful acceptance of deliverables. The City should insist that software contracts include specific deliverable schedules with payments associated to acceptance of those deliverables. Critical dates should be identified as performance measures with payment/penalties associated with achievement of those dates. The City Purchasing department should review and approve all software and service contracts with input, as appropriate, from the City's IT organization. (NI→PO)

- *Appoint a Separate Contract Manager for Large Projects or for Long-Term Vendors* – Project managers must maintain a positive working partnership with their vendor counterpart in order to successfully manage their project. We believe it can be very difficult to both maintain objectivity and hold the vendor accountable as a contract manager while maintaining the close working relationship as the program/project manager. While much of the contract management responsibility for the Cayenta contract fell to the project manager, we believe that accountability suffered for the project as a result. When there are vendor performance issues, they should be formally addressed and communicated immediately to the project sponsor by an assigned contract manager. Management should be made immediately aware of vendor performance issues so that corrective measures can be taken immediately. Any changes to the payment or performance requirements of a project should be fully documented and approved by management. The communication on such issues will be greatly facilitated through the steering committee meeting forum. (NI)
  
- *Software Support for Cayenta* – When the Cayenta software was implemented in April 2006, software support was assigned to the Revenue Bureau. The Environmental Services and Water Bureaus pay an annual charge to the Revenue Bureau to provide software support services to maintain and operate the system. We observed on several occasions during the QRMS project a breakdown in communications between the Water and Revenue Bureaus related to specific project objectives and activities. We believe the organizational structure of the project was complicated by the two primary bureaus having different management and Council reporting structures, thus complicating the overall project leadership, sponsorship and accountability. We understand that simple organizational placement will not solve basic communication and management issues. Nevertheless, we recommend that the four primary bureaus impacted by operation of the Cayenta system (i.e., Environmental Services, Revenue, Technology Services, and Water) should reassess the organizational support structure for the Cayenta system to confirm that the current structure, organizational placement and support procedures continue to serve the best long-term interests of the City and the ratepayers. (NI)
  
- *Software Maintenance Support with Cayenta* – The City and Cayenta have both a standard software license maintenance agreement and a more general time and materials services agreement to provide ongoing support for the Cayenta software. We observed at several points in the project that the expectations of the City and Cayenta did not agree in terms of service-level expectations. This manifested itself in 2012 and early 2013 with repeated delivery delays and significant software quality issues. We recommend that the City bureaus, with support from the Procurement Services, review their existing contracts with Cayenta executive management to ensure there is a common understanding and agreement as to the level of support Cayenta shall provide. On a regular basis, at least annually, the City and Cayenta should review current performance and future requirements and software development plans to keep abreast of developments by both parties. (NI)

Messrs. Lannom and Shaff

December 9, 2013

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Please contact Bob Fuller or me if you have any questions regarding our recommendations, observations and professional opinions. Thank you for this opportunity to assist the City on this project.

Sincerely,

Timothy C. Easton, CMC  
President