

WATER SERVICES ZERO-BASED REVIEW IMPLEMENTATION PLAN

EXECUTIVE SUMMARY

This report provides progress updates, summary of findings and financial benefits, as well as a detailed implementation plan for the five theme areas of recommendations reported by Scottish Water International (SWI) in the Water Services Zero-Based Review (ZBR): Trenchless Technology, Resource Optimization, Customer Experience, Risk Based Maintenance and Performance Measurement. In addition, updates for other opportunities that were identified by SWI in the high-level analysis, but not reviewed in-depth as a part of the Water Services ZBR process, have been included in this report.

SWI estimated that the recommendations, once fully implemented, could generate between \$2.4 million and \$5.0 million in annual financial benefits, through operational efficiencies or changes in service delivery effectiveness. Since sharing these recommendations with Council in March 2015, Water Services assembled action teams to further assess the feasibility and opportunity of all recommendations. Based on the analysis, Water Services has identified \$6.1 million in annual savings that can be achieved by 2020. With respect to timing, Water Services has already realized \$1.2 million in financial benefits in 2015 with the remaining savings being realized from 2016 to 2020.

The ZBR process was a valuable exercise that reinforced the Water Utility's commitment to continuous improvement. The establishment of action teams enabled Water Services to conduct a thorough review of the recommendations to further understand industry best practises, required investments, financial benefits and future opportunities through scaling the learnings to other lines of service in the Water Utility.

RECOMMENDATION(S):

That the SPC on Utilities and Corporate Services receive this report for information.

PREVIOUS COUNCIL DIRECTION/POLICY

On 2015 March 30, Council approved the Administration's response to the recommendations (PFC2015-0230) in the Water Services ZBR by Scottish Water and directed Administration to report back to Council on or before April 2016 with a detailed implementation plan.

BACKGROUND

The Water Utility consists of two business units, Water Services and Water Resources. Water Services is responsible for the operation and maintenance of the water, wastewater and drainage assets of the City's Water Utility. Together with Water Resources, which plans, designs and builds the utility infrastructure, the Water Utility provides these three lines of service to Calgarians and some neighboring municipalities. The scope of the Water Services ZBR was limited to the operations of Water Services, which accounts for 27% of the total 2015 Water Utility operating budget of \$629 million. Water Resources is currently undergoing a separate ZBR, scheduled to report to Council in July 2016.

In April 2014, Scottish Water International (SWI) was selected as the consultant for the Water Services ZBR through a competitive request for proposal process. SWI conducted its review of the Water Services business unit from 2014 to 2015. SWI's unique approach to the review focused less on specific "services" identified in the ZBR preparation and focused on business

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“themes” that could potentially provide financial benefit across areas of Water Services. The in-depth review applied the theme approach in areas they believed to provide the highest opportunity for financial benefit or strengthened customer value with intent that the benefits could be “scaled” across other utility operations within Water Services. The final 2015 March 17 report to PFC contained key findings from SWI’s in-depth analysis of wastewater utility which included 33 recommendations where Water Services could realize financial benefit or a higher level of connection with the customers of the Water Utility.

Destination statements were created by SWI, to define a future state once opportunities have been implemented and benefits realized.

1. Trenchless Technology: *“To be a leader in utilizing technology for the repair and maintenance of the sanitary and water networks”*
2. Resource Optimization: *“To deliver an efficient and effective service by being more proactive, through the optimization of resources”*
3. Customer Experience: *“To deliver the best customer experience by providing an informed and consistent customer journey.”*
4. Risk Based Maintenance: *“To maintain our assets effectively, at the most optimum frequency, delivering financial efficiency and best-in-class asset management.”*
5. Performance Measurement: *“Strengthening the reporting of business performance so everyone can see their contribution to service delivery and improvement.”*

The estimated annual efficiency savings resulting from the review was in the range of \$2.4 million to \$5.0 million. In addition, it was noted that the implementation of the ZBR recommendations may be scaled to other areas in Water Services, as well as acknowledging unquantifiable effectiveness benefits to customer service, asset maintenance, business performance, and accountability.

Administration welcomed the third party perspective on ways to improve Water Services’ efficiency and effectiveness. By accepting the recommendations, Water Services with its partner business units and external stakeholders committed to investigate and research considerations for implementation.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

In 2015, Water Services formed a ZBR Implementation Oversight Committee to develop an implementation plan to continue the advancement of improvements within the business unit. In addition, action teams were assembled to assess the feasibility and impact of the recommendations. The ZBR progress update for each theme area is summarized below and the summary of projected financial benefits totaling \$6.1 million per year at full implementation by 2020 can be found in Attachment 1:

Trenchless Technology

Trenchless technology is a type of subsurface construction process that allows service providers to install, replace, and renew underground utilities with little to no excavation and surface disruption. Water Services is preparing to expand the use and types of cost effective trenchless technologies it uses in the wastewater service connection from the main to the

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individual homes. Advancing this capability will help maximize the operations and capital budget dedicated to wastewater service connection maintenance, replacement, and increase the number of customer's assisted, take steps to reduce the number of homes on long-term maintenance, and reduce overall replacement costs on wastewater service connections.

Water Services has identified an opportunity to initiate a wastewater connection lining program, to address growing maintenance needs in the wastewater collection network, avoid conventional replacement costs, and minimize interruptions to customers. The wastewater connection lining program will operate at a pilot-scale in 2016 to 2018, re-directing \$2.0 million per year of existing funds. Using trenchless technology that has already proven successful in Canada, it is expected to result in net cumulative financial benefits of \$2.4 million by 2020 in its pilot-scale, and grow as the program is fully developed. The assessment of scalability of trenchless repair solutions indicated that most benefits can be found immediately in the wastewater and drainage lines of service. Research and dialogue with other Canadian municipalities have indicated that by advancing a program of this size, Water Services has the opportunity to contribute to the growth of the trenchless technology market in western Canada.

Water Services Projected Financial Benefit by 2020: \$2.4 million

Resource Optimization

The Resource Optimization theme area recommendations provided focus on how Water Services will address growing maintenance and customer service needs as efficiently as possible by leveraging existing resources. Water Services investigated recommendations that proposed changes to field crew composition, coordination and communication between field and planning groups, and assessed the impact of reducing the scope of work required for some service calls. These recommendations have been prioritized to take advantage of initiatives that have resulted in realized benefits in 2015 of \$595 thousand, primarily through equipment optimization and the utilization of robotics to avoid open-excavation repairs. Ongoing initiatives to increase the coordination and efficiency of roadway paving, in addition to expanding the application of trenchless spot repairs, and increasing the reuse of soil volumes recycled on site will realize financial benefits of approximately \$1.9M by the end of 2018. Scaling these recommendations across all lines of service has been applied where possible and will contribute to Water Services ability to achieve the potential financial benefits. The Resource Optimization initiatives are closely interconnected with initiatives being undertaken in the Customer Experience group of recommendations, sharing a focus on developing the customer experience.

Water Services Projected Financial Benefit by 2020: \$1.9 million per year

Customer Experience

While the Water Utility enjoys a good relationship with customers, it is recognized that there is a need for greater emphasis on customer outcomes to drive business decisions and focus continuous improvement. The customer experience recommendations focus on supporting employees' ability to make customer focused decisions through better access to information, streamlined business processes and reducing repeated visits to customers.

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Incremental improvements including increasing access to 311 customer information in to employees in the field, improving response times through process changes and enhancing notifications to customers for service disruption are currently underway. As repeat customer visits decline, customer self-serve tools are made available and used more frequently and business process changes are in affect Water Services estimates financial benefits of approximately \$900 thousand per year by 2020.

The Water Utility's long-term success in enhancing customer experience will require foundational capital investment of approximately \$825 thousand for IT related costs, access to customer information, and determination of levels of service. The focus on these foundational elements in the coming years will have far reaching benefits to customers in how they interact with the Water Utility and for employees by providing them with the tools and resources to be most effective in serving customers.

It is recognized that success in this area requires a culture shift to ensure the customer is at the centre of the Water Utility business. Work happening across The Corporation on culture, initiatives out of Customer Service and Communications, along with efforts to enhance the Customer Strategy team within the Water Utility will all be key contributors to advancing the customer focus.

Water Services Projected Financial Benefit by 2020: \$0.9 million per year

Risk-Based Maintenance

Risk-Based Maintenance is an asset management strategy intended to focus maintenance activities on the assets that are most critical to providing the desired service. SWI recognized Water Services' advanced level of expertise in asset management practices and encouraged the promotion of risk-based strategies to advance the Water Utility's asset management practices to the next level of practice maturity.

The application of the risk based maintenance approach at the water treatment plants, has strengthened the prioritization of repair work and has resulted in the avoidance of unplanned maintenance tasks, realizing financial benefits of \$600 thousand in 2015. Water Services estimates the application of risk-based maintenance practices throughout the water treatment group to reach \$860 thousand per year. Awareness of the performance of critical assets is essential to making cost effective decisions, requiring an estimated \$100 thousand investment in monitoring infrastructure. Efficiency gains resulting from these strategies will be used to offset increases in maintenance costs as a result of aging infrastructure, increasing plant complexity, and system growth.

Water Services Projected Financial Benefit by 2020: \$0.9 million per year

Performance Measurement

The Water Utility recognizes the importance of Performance Measures in assessing how successfully it is performing to ensure customers are getting the best value for the services being provided. Performance measures have been tracked in various capacities throughout the business and are currently being used to drive improvement by creating

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visibility, accountability and focus on critical areas of the business. The development of a Performance Measure Committee in 2010 and most recently the Water Utility's commitment to follow the corporate Results Based Accountability™ approach allows for the building of maturity into the overall performance measurement system. In order to further the advancement of a business culture which measures and takes action on its performance to provide customer value, the Water Utility will focus on advancing customer levels of service as a part of the Water Resources ZBR.

Water Services Realized Benefit: As the Water Utility continues to advance its maturity in performance measurement, it is recognized that there is significant opportunity to scale learnings, share best practises and introduce technology solutions to improve performance throughout the business.

Additional Continuous Improvement Programs in the Water Utility

Other potential efficiency and effectiveness opportunities were identified by SWI in the high-level analysis, but not reviewed in-depth as programs or initiatives were already in place. In particular, the Water Utility continues to advance the Energy Management Program and Fleet Optimization Programs, focused on the review of current practises and the implementation of improvements to realize efficiency and effectiveness benefits.

STAKEHOLDER ENGAGEMENT, RESEARCH AND COMMUNICATIONS:

To inform the development of the Implementation Plan, Administration consulted municipalities and industry associations to provide feedback on the recommendations and business cases. Administration also carried out comparative practice research in other Canadian cities. These research activities found that the Water Utility shares the same challenges as many other Canadian cities, and that approaches similar to those recommended by SWI are starting to be discussed and used in Canada with positive impacts on business operations.

Strategic Alignment

The service improvements and productivity gains achieved through the Water Services ZBR helps to support Council's Priorities to be a "Well-Run City" in reducing costs and being as efficient and effective as possible.

SWI recommendations and administration findings align with the Leadership Strategic Plan approved by Council on 2014 September 15. The Water Utility's advancement of performance measurement supports the principles of Results Based Accountability™, as well as aligns with the corporate program of Analytics Calgary's that promotes the use of data and information to enable informed decision making. The Customer Experience theme area, reinforces the commitment to develop an overall "citizen first" orientation for the Water Utility to meet citizen needs.

Social, Environmental, Economic (External)

The implementation of the ZBR recommendations will assist Water Services to operate and maintain the Water Utility's assets in a cost-effective manner, while ensuring it continues to protect public health and the environment.

Financial Capacity

Current and Future Operating Budget:

Approval(s): Pritchard, Rob concurs with this report. Author: Eagleson, Scott

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The recommendations of the Water Services ZBR are expected to yield financial benefits to the annual operating budget of \$6.1 million per year by 2020. These financial benefits will be used to advance the Water Utility's financial position to meet financial targets and will offset increasing costs related to inflation on growing and aging infrastructure, and increasingly complex system and plants, while continuing to meet all regulatory requirements.

Current and Future Capital Budget:

Funding of the wastewater connection lining program will be managed through a re-allocation of existing capital budget and re-assessed for increase at the end of 2018. The renewal of inspection cameras with repair capability (which are integrated with the transport vehicles) will be undertaken according to the vehicle and equipment lifecycle plan. The advancement of the Customer Experience initiatives through access to customer data will require future capital investment of approximately \$825 thousand to support the implementation of a secure and connected information hub. Investments in the IT environment are being managed strategically, at a departmental level, through the UEP IT Strategic Plan. These investments are intended to have cascading benefits for other UEP business units and strengthen the IT environment. Collecting operating performance data of critical assets within the water treatment group is expected to require a \$100 thousand dollar investment in monitoring equipment and data management. Investment in expansion of remote monitoring capability within the linear utility systems will be funded through adjustments of existing capital budgets and alignment with the UEP IT Strategic Plan.

Risk Assessment

Implementation risks will be assessed and tracked on a recommendation-by-recommendation basis, and mitigated by the Water Services' division responsible for the initiative, business practice or project advancing the recommendation. The Water Services ZBR implementation plan is intended to identify scope and broad-timing and interdependencies between projects to align resource requirements. Water Services' leadership team believes that its employees are the key to success in implementing impactful change, and is reaching out to all employees to talk about the way forward, and how the recommendations contribute to a stronger, more resilient Water Utility. Water Services will monitor the economic indicators to ensure that commitments made with external service providers reflect the best value for customers. Performance measurement will be a key component to ensuring that recommendation initiatives are having the intended effect on business operations. Water Services has integrated performance measures into divisional and business unit level performance measure reports.

REASON(S) FOR RECOMMENDATION(S):

This report is provided for information as an update on progress on the ZBR recommendations and to the Water Utility's commitment to continuous improvement.

ATTACHMENTS

1. Water Services Estimated Financial Investments and Benefits
2. Water Services ZBR Implementation Plan Recommendation Theme Summaries
3. Water Services ZBR Recommendations Implementation Plan and Update