

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

### **EXECUTIVE SUMMARY**

This report provides the Zero-Based Review of Water Services by Scottish Water International (SWI) (Attachment 1), and Administration's response to the recommendations (Attachment 2). SWI assessed all services delivered by Water Services at a high-level, and reviewed, in-depth, three focus areas: performance measurement, job planning, and risk based maintenance. The recommendations, once fully implemented, are estimated to generate between \$2.4 and \$5.0 million in annual financial benefits, as well as improvements to customer service. It is expected that the recommendations are "scalable," and that additional efficiency and effectiveness gains may result from applying the recommendations to other areas in Water Services during implementation. Administration fully supports the recommendations.

### **ADMINISTRATION RECOMMENDATIONS**

That the Priorities and Finance Committee recommend that Council:

1. Approve Administration's response (in Attachment 2) to the recommendations in the Water Services Zero-Based Review by Scottish Water International; and
2. Direct Administration to report back to Council on or before April 2016 with a detailed implementation plan.

### **RECOMMENDATION OF THE PRIORITIES AND FINANCE COMMITTEE, DATED 2015 MARCH 17:**

That the Administration Recommendation contained in Report PFC2015-0230 be approved.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2014 January 14, Council approved the Project Initiation of the Water Services Zero-Based Review (PFC2014-0063), and directed Administration to provide a final report on or before 2015 March 31.

On 2014 September 15, Council approved the Zero-Based Review Program: 2015-2018 (PFC2014-0554), which recommended changes to improve the ZBR Program by providing greater clarity regarding its purpose and expected results, while allowing a more flexible and faster process. These improvements were applied to projects underway in 2014, particularly "eliminating the mandatory requirement for the Status Report to Council." As a result, the Water Services ZBR did not present a Status Report to Council in September 2014 as indicated in the Project Initiation Document.

### **BACKGROUND**

#### Water Services

The Water Utilities consist of two business units, Water Resources and Water Services. Water Resources oversees the management of water resources, and plans and builds infrastructure. Water Services delivers water, wastewater and stormwater services to citizens and customers, and operates and maintains infrastructure. The scope of this ZBR is the Water Services business unit only. Water Resources is not included in this review and will be the subject of a ZBR starting in 2015.

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

The Water Utilities provide water and wastewater services at less than a penny a glass (1 cent for ~ 3 litres) and just over a penny a flush (2 cents per 6L flush). Water Services (as part of the Water Utilities) operates and maintains treatment plants and collection infrastructure to ensure regulatory requirements are met, public health, property and the environment are protected, and employees work safely.

With higher than anticipated growth, increasingly stringent regulatory requirements, and changing workforce demographics, Water Services is continuing its focus on improvement in 2015-2018, including the Zero-Based Review process.

### The Water Services' Zero-Based Review: Phases and Governance

The Zero-Based Review Program responds to Council's priority to be a "well run city" by being "as efficient and effective as possible, reducing costs and focusing on value-for-money."

Following project initiation and selection of an external consultant through an independent request for proposal process (Phase 1), each review starts at a 'zero-base' by looking at all services provided at a high level (Phase 2A). This is followed by an in-depth investigation and analysis of specific services or focus areas that have the greatest potential for efficiency and effectiveness improvements (Phase 2B and 3).

Following the Zero-Based Review method, the Water Services ZBR was managed by Corporate Initiatives (a division of the Chief Financial Officer's Department), with active participation from Water Services. To manage the project within Water Services, an oversight team (consisting of management team members) and a project team (consisting of subject matter experts within each division) was formed.

To support the independence of the review, and to continue encouraging collaboration and knowledge-sharing within Administration, a Steering Committee provides strategic oversight for each ZBR. Water Services' Steering Committee consisted of:

Eric Sawyer, Chief Financial Officer (Chair)  
Rob Pritchard, General Manager, Utilities and Environmental Protection  
Dan Limacher, Director, Water Services  
Kurt Hanson, Director, Recreation  
Elizabeth Dewart, Manager, Corporate Initiatives

In April 2014, Scottish Water International (SWI) was selected as the consultant for the Water Services review through a competitive request for proposal process. SWI is a wholly owned subsidiary of Scotland's publicly owned water, wastewater and stormwater authority (Scottish Water). All staff engaged by SWI are employed by Scottish Water, and therefore bring their direct experience in Water Utilities operations, maintenance and service delivery, and in Scottish Water's transformation program.

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

Water Services Zero-Based Review by Scottish Water International (SWI) (Attachment 1)

As per the Zero-Based Review method, SWI's review began with a high-level assessment of all services and identified focus areas with the greatest potential for efficiency and effectiveness improvements to be the subject of the in-depth review. Selection of these focus areas was made with the expectation that some of the findings would likely be applicable to other parts of Water Services, so that a larger portion of the business unit would benefit from the Zero-Based Review.

*Summary of the Water Services Zero-Based Review Approach:*

#### **High-level analysis**



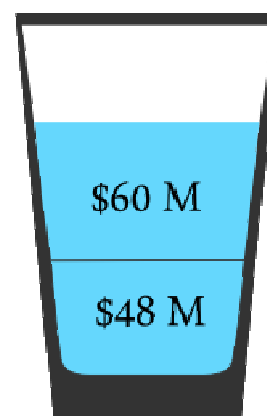
The high-level analysis reviewed 100% of Water Services' operating expenditures (\$150 M). This analysis identified areas with the greatest potential for efficiency and effectiveness improvements.

#### **In-depth analysis**



The in-depth analysis reviewed 32% of Water Services' operating expenditures (\$48 M). This analysis identified recommendations with an estimated \$2.4 M to \$5.0 M in annual efficiency savings.

#### **Scalability**



The recommendations could apply to an additional 40% of Water Services' operating expenditures (\$60 M). Savings that may result from this "scalability" will be assessed by Water Services as part of implementation planning.

### **HIGH-LEVEL ANALYSIS (pages 6 to 12 of Attachment 1)**

Scottish Water International's report begins by assessing, at a high-level, all services provided by Water Services. In reviewing Water Services' four service areas (consisting of 20 sub-services), SWI observed Water Services' knowledgeable, committed and proud work-force, modern and efficient asset base, and a service culture where employees are passionate about The City's assets.

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

The high-level analysis identified potential areas for further investigation, and prioritized those with the greatest opportunity for efficiency and effectiveness improvement for in-depth review:

- Performance Measurement - Performance measures used to manage Water Services, including processes for data collection and analysis
- Job Planning – The use and optimization of resources in operating, maintaining and repairing sanitary services
- Risk Based Maintenance – The maintenance of assets to produce and deliver clean drinking water (water treatment plants, pumping and storage, and the water distribution system)

The combined 2013 operating expenditures for the three focus areas reviewed in-depth is \$48M or approximately 32% of the total Water Services operating expenditures (\$150M in 2013).

The remaining areas identified by Scottish Water International for further investigation have been referred to Water Services for consideration outside of the service review process (see page 17 of Attachment 2).

### **IN-DEPTH ANALYSIS (pages 13 to 57 of Attachment 1)**

The business cases in the report describe the rationale and evidence for improvement (business need), and outline a series of recommendations that, once fully implemented, would lead Water Services to an improved future state (destination statement). The business cases are summarized as follows:

*Performance Measurement (one business case):* The six recommendations in this section aim to “strengthen the reporting of business performance measures so everyone can see their contribution to service delivery and improvement.” These recommendations suggest improvements to the key performance measures used by Water Services’ management team, as well as the business processes to collect and analyze the data, and make it visible and meaningful to all employees.

### *Job Planning (three business cases):*

*Trenchless Technology:* The four recommendations in this section aim to position Water Services “to be a leader in utilising technology for the repair and maintenance of the sanitary and water mains network.” Trenchless technology includes various approaches and equipment that would allow Water Services to maintain and repair underground utility infrastructure with minimal disruption to the roadway and citizens.

*Resource Optimization:* The eight recommendations in this section aim to position Water Services “to deliver an efficient and effective service by being more proactive, through the optimization of our resources.” The recommendations align crew sizes and equipment with the scope of the repair, improve coordination within Administration, and reduce the scope of work required for some jobs.

*Customer Experience:* The eight recommendations in this section aim to position Water Services “to deliver the best customer experience by providing an informed and consistent customer journey.” The recommendations improve the visibility of customer data and site

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

history, enhance "first-call" information for customers and reduce customer calls, and clarify the service levels provided to all customers.

*Risk Based Maintenance (one business case):* The seven recommendations in this section aim to position Water Services "to maintain assets effectively, at the most optimum frequency, delivering both financial efficiencies and 'best in class' asset management." A risk based approach is targeting maintenance resources to assets where there is a risk to customers and the triple bottom line – social, environmental and economic risks. Risk is the consequence of an event (e.g. impact of a breakdown or failure) and the probability that an event will occur.

Within the areas examined in-depth, SWI's analysis and recommendations identifies potential annual (per annum (p.a.)) efficiency savings of \$2.4 million to \$5.0 million. These efficiency gains are calculated assuming the efficiencies that may be realized once the opportunities have been fully implemented. The efficiency gains are also gross (not net) and any upfront investment required is not included in the calculation.

The recommendations also identify effectiveness improvements, such as:

- Reducing disruption to Calgarians for maintenance and repair of utilities
- Ensuring all customers receive consistent information and the same level of service
- Improving customer and performance data collection, analysis and visibility
- Strengthening coordination within Administration
- Supporting Council's Priorities and the Leadership Strategic Plan, including alignment with Results Based Accountability™ and the customer service framework
- Advancing the effective maintenance of utility assets
- Realizing productivity gains can be used to accommodate a growing city and changing workplace demographics

The recommendations continue to protect public health and the environment, including regulatory requirements.

### **SCALABILITY (pages 58 to 59 of Attachment 1)**

The recommendations developed through the in-depth review may also be applied to other areas in Water Services, comprising services that make up an additional \$60 million in annual operating expenditures (or an additional 40% of the annual operating expenditures). It is expected that additional efficiency gains and effectiveness improvements may result from this scalability. However, the specific applicability of the recommendations and magnitude of efficiency and effectiveness improvements is not known at this time, and will be addressed by Water Services as part of their implementation planning for the Zero-Based Review results.

### **Administration's Response to Scottish Water International's Water Services' Zero-Based Review (Attachment 2)**

Administration fully supports Scottish Water International's recommendations, and welcomes the third party perspective on ways to improve Water Services' efficiency and effectiveness. As a result, Administration recommends accepting 32 of the 33 recommendations; 1 recommendation is referred to Water Resources.

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

To inform its response to SWI's recommendation, Administration engaged three expert peer reviewers from other Canadian municipalities and industry associations to provide feedback on the findings, recommendations and business cases. Administration also carried out comparative practice research on risk-based maintenance in other Canadian cities. These research activities found that Calgary's Water Utilities share the same challenges as many other cities, and that, for the most part, the approaches recommended by SWI have begun to be used in Canada with positive improvements to efficiency and effectiveness.

By accepting the recommendations, Water Services, with its partner business units and external stakeholders, is committed to implementing the recommendations. Recognizing that there is further work to be done to investigate the full implementation costs, plan the most logical sequence for implementation, and assess risks and mitigation strategies, Water Services will report back to the Priorities & Finance Committee with an implementation plan within one year of this report going to Council.

### Summary of the Water Services Zero-Based Review Financial Results:

The below table provides a high-level summary of the financial information related to the Water Services Zero-Based Review. It shows the dollar and percentage amount of Water Services' operating expenditures that were reviewed in-depth, the estimated annual efficiency savings resulting from this review, the one-time implementation costs, and the additional operating expenditures where the recommendations may be scaled or applied to other areas in Water Services. The Water Services Zero-Based Review also resulted in unquantifiable effectiveness benefits to customer service, asset maintenance and business performance and accountability.

ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE

SUMMARY OF THE WATER SERVICES ZERO-BASED REVIEW FINANCIAL RESULTS

COST CENTERS	2013 OPERATING EXPENDITURES OF SERVICES REVIEWED IN-DEPTH		RANGE OF ANNUAL EFFICIENCY SAVINGS (\$000)			ONE-TIME IMPLEMENTATION COSTS** (\$000)	2013 OPERATING EXPENDITURES OF SERVICES WHERE SCALABILITY MAY APPLY		TOTAL POTENTIAL APPLICATION OF ZBR RECOMMENDATIONS (IN-DEPTH + SCALABILITY)		ADMIN. RESPONSE
	(\$000)	%*	LOW	HIGH	(\$000)		(\$000)	%	(\$000)	%	
			(\$000)	(\$000)							
	48,122	32%	2,359	5,011	At least 1,415 plus IT costs TBD	59,602	40%	107,724	72%	Accept 32, Refer 1	
MENT***	N/A	N/A	0	0	30	N/A	N/A	N/A	N/A	Accept	
	16,405	11%	1,854	4,212	1,300	28,262	19%	44,667	30%		
			996	1,990	500					Accept	
			575	1,421	800 plus IT costs TBD					Accept	
			282	801	IT costs TBD					Refer 1	
	31,717	21%	506	799	85 plus IT costs TBD	31,340	21%	63,057	42%	Accept	

services 2013 Operating Expenditures (\$150M)

tation are estimated, and IT requirements are unknown at this time. One-time costs will be determined by Water Services through implementation

ocused on the whole of Water Services as it is an overall business work stream. dealing with the business processes and culture throughout Water

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

### Recommendation 2: Implementation Plan

As per the Zero-Based Review method, Water Services will report back to Council on or before April 2016 with a detailed implementation plan for the recommendations. The implementation plan will address:

- *One-time costs of implementation:* Scottish Water International estimates at least \$1.4 million in one-time implementation costs for equipment and information technology costs. Water Services will identify any additional implementation costs.
- *Scalability:* Scottish Water International estimates that the recommendations developed through the in-depth review may also be applied to other areas in Water Services, comprising services that make up an additional \$60 million in annual operating expenditures (or an additional 40% of the annual operating expenditures). Water Services will focus its implementation plan, initially, on the areas reviewed in-depth and determine when and how the recommendations may be “scaled” to other areas in the future.
- *Timing and sequencing:* Scottish Water International provides an initial view of “scheduling, prioritization and portfolio development” for the recommendations. Water Services will consider SWI's suggestions to develop an implementation program that also considers other utility and corporate priorities, and change management.
- *Efficiency Savings:* The Water Utilities (Water Resources and Water Services) are funded through water, wastewater and stormwater rates. The Water Utilities are fully self-supporting and receive no support from property taxes. The cost savings identified can be: reinvested in the Water Utilities to enable further implementation of the Zero-Based Review recommendations and improve the delivery of service; support achieving the Water Utilities' four-year financial plan priorities of debt, cash and reserve management; and ultimately included in the overall utility rate determination to have a reducing influence on these rates. Water Services, in conjunction with Water Resources, will address how the savings that may be realized from the recommendations may be used.
- *Any progress made to date on implementing the recommendations:* Scottish Water International identifies some “quick wins” that may be delivered within the first year of implementation. In some cases, Water Services has already begun to investigate the recommendation and will begin implementation as soon as possible. Water Services will update Council on any progress made in implementing the recommendations.

### **Stakeholder Engagement, Research and Communication**

In developing its recommendations, Scottish Water International engaged Water Services employees in various capacities (e.g. operators, crews, supervisors, and the management team) by carrying out site visits, riding along with crews, one on one interviews, and workshops.

Water Services employees have been informed of the status of the Zero-Based Review throughout the project. Water Services is committed to engagement and communication with its employees, and will continue taking a proactive change management approach during implementation.

Administration consulted internal stakeholders, including Roads, Fire, Planning, Communications – Customer Service Framework, CFOD – Performance Measurement and Benchmarking, Information Technology and Human Resources, during the development of



## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

Administration's response to SWI's report. Administration also informed external stakeholders who may be affected, such as the Urban Development Institute. Labour unions were also provided with information on the recommendations. At this time, there are no known changes to agreements with these partners resulting from the recommendations, and these partners will continue to be engaged during implementation planning.

### **Strategic Alignment**

Alignment of Water Services' services with the following four corporate policies was part of the high level analysis: Council's Fiscal Plan (2012-2014), the Municipal Development Plan (MDP), Calgary Transportation Plan (CTP) and the 2020 Sustainability Direction. Water Services is strongly aligned with water quality objectives, and leads The City's initiatives to achieve these goals. Water Services, as part of the Water Utilities, is also an active partner in accomplishing these plans' environmental, mobility, complete community, safety and infrastructure management goals.

Scottish Water International's recommendations align with the Leadership Strategic Plan, approved by Council on 2014 September 15. The performance measurement business case (Attachment 1, pages 2-4) supports the principles of Results Based Accountability™, and the customer experience business case (Attachment 1, pages 9-11) reinforces the commitment to develop an overall "citizen first" orientation.

This report also aligns with Council's priority to "examine opportunities for alternative service delivery for competitiveness." Water Services engages external contractors for specialized services and resource levelling (e.g. hired equipment during peak work periods). It currently delivers its universal metering (\$2.6 million in 2013) and biosolids management programs (\$6.0 million in 2013) primarily via third parties, as well as other activities such as grounds maintenance at the water and wastewater treatment plants and short-term rental of equipment (e.g. hydrovacs) for emergency repairs. Following the high-level analysis, Scottish Water International found limited opportunities for further contracting out to third parties. SWI suggests considering a third party vendor as one option to support further advancing the use of trenchless technology.

### **Social, Environmental, Economic (External)**

Citizens value the quality of drinking water in Calgary, with 95% of citizens rating this service as "very important" (2014 Citizen Satisfaction Survey). Scottish Water International recognizes Water Services' existing service culture, and makes recommendations to further advance the customer experience.

The recommendations will continue to ensure protection public health and the environment, including regulatory requirements, and support employee safety.

### **Financial Capacity**

SWI's analysis and recommendations identifies potential annual (per annum (p.a.)) efficiency savings of \$2.4M to \$5.0M. The recommendations developed through the in-depth review may also be applied to other areas in Water Services, comprising services that make up an

## **WATER SERVICES ZERO-BASED REVIEW AND ADMINISTRATION'S RESPONSE**

---

additional \$60M in annual operating expenditures (or an additional 40% of the annual operating expenditures). It is expected that additional efficiency gains may result from this scalability.

### **Current and Future Operating Budget:**

Implementing the recommendations as a dedicated business change program may require additional operating resources. Water Services will identify any operating budget impacts in its implementation plan.

### **Current and Future Capital Budget:**

Scottish Water International estimates at least \$1.4 million in one-time implementation costs for equipment and information technology. Water Services will identify any capital budget impacts in its implementation plan.

### **Risk Assessment**

In its report (Section 9, pages 66-67), Scottish Water International outlines risks and high level implementation suggestions to mitigate these risks. Water Services will review these risks to implementation and develop mitigation strategies.

### **REASON FOR RECOMMENDATION(S):**

Administration fully supports the recommendations in the Water Services Zero-Based Review report, and will provide a detailed implementation plan within one year of this report.

### **Attachments:**

1. Water Services Zero-Based Review (ZBR) Report by Scottish Water International
2. Administration's Response to Scottish Water International's Water Services Zero-Based Review