THE CITY OF CALGARY

RAFTELIS FINANCIAL CONSULTANTS, INC.

CITY OF CALGARY

UTILITIES & ENVIRONMENTAL PROTECTION

Water, Wastewater and Drainage (Utilities) Financial Review

March 31, 2016

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January 12, 2016
Mr. R.G. Pritchard
General Manager, Utilities & Environmental Protection
City of Calgary

Subject: Water, Wastewater and Drainage (Utilities) Financial Review

Dear Mr. Pritchard,

Raftelis Financial Consultants, Inc. (RFC) is pleased to provide The City of Calgary (City) with this report for the Water, Wastewater and Drainage (Utilities) Financial Review (Financial Review).

The overarching objective of the Financial Review was to assess Utilities' current and projected levels of financial risk, and to make recommendations regarding how to mitigate these risks. Changes to Utilities' financial policies and practices, as well as Utilities' governance structure or management structure, will be addressed in this review.

This report provides a detailed summary of the analytical procedures followed by RFC and our key findings and recommendations. It is intended to serve as a "legacy" document that can be referred to by those who seek to better understand the unique challenges confronting Utilities as it continues its mission to provide the highest quality water, wastewater and drainage services in the most efficient and cost effective manner possible.

It has been a pleasure working with you, members of Utilities staff, and other City personnel. We thank you for the insight, direction and support you provided during the course of our work.

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.

William Stannard, PE
President and Chief Executive Officer

John Wright, CPA
Senior Consultant

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SECTION 1: EXECUTIVE SUMMARY

1.1 WATER, WASTEWATER AND DRAINAGE (UTILITIES) FINANCIAL REVIEW

In March 2015, The City of Calgary (City), on behalf of Utilities & Environmental Protection (UEP), retained the services of Raftelis Financial Consultants, Inc. (RFC) to complete a Water, Wastewater and Drainage (Utilities) Financial Review (Financial Review). The objective of the Financial Review was to assess Utilities' current and projected levels of financial risk and to make recommendations regarding how to mitigate these risks by modifying Utilities' financial policies and practices, as well as Utilities' governance structure or management structure. The key question RFC sought to answer throughout the risk assessment process was: when viewed on a standalone basis, not considering any potential financial support from the City, what is the financial risk level of Utilities?

1.2 KEY FINDINGS AND RECOMMENDATIONS

The key findings and recommendations developed by RFC as an outcome of the Financial Review are as follows:

- **Financial Risk**: RFC's assessment of Utilities' overall level of financial risk is, ***at worst***, moderate. As discussed in Section 7 of this report, the key driver of this conclusion was a based on the comparison of Utilities' financial and managerial metrics to the criteria used by U.S. credit ratings agencies to assess the risk that water and wastewater utilities will default on debt service payments to external creditors. To arrive at our risk assessment, RFC also conducted business scenario "stress tests" to determine the negative cash flow impacts of: 1) large declines in billed water and wastewater demand; and, 2) large unplanned increases in capital improvement program expenditures. RFC also compared Utilities' financial metrics and policies to those of a group of "peer" utilities as fully discussed in Section 8 of this report. Although the peer utility review was not a primary determinate of RFC's financial risk assessment, our findings regarding the governance and management structures of these other utilities does serve to buttress RFC's recommendations regarding Utilities for each of these areas.

- **Financial Polices**: RFC reviewed several of the Utilities financial policies related to composition of its capital structure, debt service repayment, and the maintenance of adequate cash reserves. As discussed in Section 9 of this report, RFC supports the majority of Utilities' existing financial policies, with the exception of the current self-imposed maximum debt limit of $2 billion. RFC also recommends that Utilities: 1) establish a dedicated capital reserve to mitigate the risk of large unplanned increases in capital improvement program expenditures; and, 2) incorporate the use of debt service coverage ratios, in addition to other currently used financial metrics, as part of the financial management process.

- **Governance Structure Risk**: RFC identified no specific quantifiable financial risks that will be directly and immediately mitigated by a change in Utilities' governance structure. *However*, as discussed in Section 10 of this report, we believe that numerous qualitative benefits will accrue from Utilities being governed by an independent public utility commission. These benefits include enhanced decision making on the part of Utilities' Executive Team and, over the long-term, reductions in Utilities' overall level of financial risk. In order for Utilities to fully benefit from this recommended governance structure change, RFC's recommendation on management structure risk (discussed below) should be implemented on a concurrent basis with the establishment of a public utility commission. The Alberta Municipal Government Act requires Utilities' outstanding debt to be consolidated with the outstanding debt of other City agencies in order to determine the City's compliance with proscribed maximum debt limitations. RFC's governance structure recommendation will not change this current practice of consolidating Utilities' outstanding debt with that of the City in order to determine the City's compliance with the debt limitations specified in the Alberta Municipal Government Act.

- **Financial Management Structure Risk**: At present, Utilities' financial management function is led by the UEP Finance Manager who is a member of the Chief Financial Officer's (CFO) Department. In RFC's experience, it is unusual for a utility of the size, sophistication, and complexity of the Utilities to have a financial management function that resides within another City department. As discussed in Section 11 of this report, RFC recommends the creation of a new position entitled UEP Director of Finance and Administration. The UEP Director of Finance and Administration should reside directly within the UEP organization, report to the UEP General Manager, and have full managerial responsibility over all key financial management functions. The UEP Director of Finance would also be responsible for compliance with the City's overall financial policies and procedures and work closely with the City's Chief Financial officer. RFC believes the creation of an internal UEP Director of Finance and Administration position should be implemented on a concurrent basis with the establishment of an independent public utility commission (see above).

1.3 RAFTELIS FINANCIAL CONSULTANTS, INC.

RFC is the largest consulting practice in North America focusing on providing financial and management consulting services for water industry utilities. Based in the U.S., RFC has a staff of over 50 fulltime consultants. RFC has assisted hundreds of water industry utilities in the U.S. and Canada on financial planning, cost of service, utility rate design and strategic financial planning issues. RFC's senior staff has shaped water industry utility standards by serving in leadership roles in both the American Water Works Association and the Water Environment Federation. In addition, many members of the RFC staff have served as contributing authors to industry standard reference works on water, wastewater and drainage utility financial planning and rate setting.

1.4 SUMMARY OF PRINCIPAL RECOMMENDATIONS

RFC's principal recommendations are discussed in detail in subsequent sections of this report. Table 1 presents a summary of these recommendations.

TABLE 1: SUMMARY OF RFC RECOMMENDATIONS

Recommendation	Description
Priority #1: Financial Management Structure	The position of UEP Director of Finance and Administration should be created (see Section 11.3). This position would reside internally within the UEP organization and report directly to the UEP General Manager. The functions reporting to this new position should include: • Accounting • Budgeting • Rate and Levy Administration • Debt Management • Economic/Financial Analysis
Priority #2: Governance Structure	An independent public utility commission should be established govern Utilities (see Section 10.3).
Priority #3: Financial Policies (Capital Reserve)	Utilities should establish a Capital Reserve similar to the current Sustainment Reserve. The purpose of the Capital Reserve will be mitigate the risk of capital project expenditures in excess of the expenditure assumptions used to set rates in the UEP rate model (see Section 9.7). RFC recommends that water and wastewater rates for the four-year 2019 – 2022 budget cycle be set at a level that that allows Utilities to achieve a capital expenditure reserve equal to 25% of the average annual capital expenditures forecast for the four-year 2023 – 2026 budget cycle.
Priority #4: Financial Policies (Debt Limitation)	Utilities should not continue to set an arbitrary debt limit such as the current self-imposed limit of $2 billion (see Section 9.3). RFC believes the appropriate way to determine the reasonableness of Utilities' total debt burden is through the use of debt service coverage ratios. As internal financial planning standard, RFC recommends that Utilities' seek to maintain a debt service coverage ratio equal to a *minimum* of 1.75 for the water, wastewater and drainage utilities (see Section 9.4).
Priority #5: Sustainment Reserve Policy	Utilities should substitute the financial policy of maintaining a sustainment reserve equal to 10% of total revenues to a sustainment reserve equal to 120 days of annual operations and maintenance expenditures. Note that by 2018, Utilities will meet the criteria of having a sustainment reserve equal to 120 days of annual O&M expenses (see Section 9.6).

Recommendation	Description
Priority #6: Return on Equity Calculation	The City should eliminate the return on equity based transfer payment from Utilities to the City. This should be replaced with a payment in lieu of taxes from Utilities to the City based on the calculation of the equivalent municipal property taxes on Utilities' above ground assets (see Section 8.8).
Priority #7: Financial Statements	UEP should produce annual fully auditable annual financial statements for the water, wastewater, drainage and reclaimed water utilities *as if they were fully self-supporting standalone entities.* These financial statements would be prepared under Canadian Public Sector Accounting Standards (see Section 12.6).
Priority #8: Other Financial Policies	Utilities should continue moving toward the long-term goals of 100% cash funding for maintenance capital (see Section 9.2). Utilities should substitute the use of debt service coverage ratios for its current target of having the maximum level of debt service equivalent to 40% of total revenues (see Section 9.4). Utilities should continue moving toward the long-term goal of maintaining a capital structure composed of 60% debt and 40% equity (see Section 9.5).
Priority #9: Water and Wastewater Utility Pro Forma Financial Projections	The final report made to City Council regarding this financial risk assessment should include a comprehensive set of water and wastewater pro form financial projections reflective of: 1) the final modifications made to the off-site levy assessment and recovery process determined as part of the Build Calgary initiative; and, 2) the recommendations made by RFC in this report.

SECTION 2: FINANCIAL REVIEW OBJECTIVES

2.1 REQUEST FOR PROPOSAL NO. 15-1532

The project scope provided in Request for Proposal (RFP) No. 15-1532 *Water, Wastewater and Drainage (Utilities) Financial Review*, describes a six step process for the completion of the Financial Review. The fundamental tasks and objectives of the Financial Review are described within each of these six steps. Table 2 provides a highly abbreviated summary of these steps.

TABLE 2: FINANCIAL REVIEW PROJECT SCOPE

Project Steps	Tasks and Objectives Within Each Step
Step 1: Review the existing financial plan, policies and business model	• Determine Utilities' financial performance under the approved financial plan • Determine the appropriateness of existing financial policies • Review key financial metrics • Review alternative business models and governance options • Provide an overview of peer utility financial policies and best practices
Step 2: Develop revenue scenarios	• Develop scenarios for external factors impacting revenue • Develop scenarios for accelerated capital spending • Develop scenarios for increased revenue recovery from off-site levies • Determine whether Utilities' rate model is sufficient to predict financial performance • Determine inherent risk of the assumptions used in the rate model
Step 3: Assess risks	• Assess financial plan risks under various revenue scenarios • Assess financial plan risks under current financial policies and practices; • Review UEP financial position and trajectory under current financial policies • Provide an assessment and pro-forma outlook under new scenarios
Step 4: Assess the impact of financial policies	• Assess the impact of Utilities financial policies on the City's long-term financial strategy • Assess the impact of Utilities financial policies on the off-site levy bylaw • Assess the impact of rising Utilities debt levels on the City's total debt limit
Step 5: Determine risk mitigation strategies	• Determine how the City's existing financial policies support or inhibit growth. • Identify strategies that could be used to mitigate or realign the risks of growth; • Determine the best ways in which Utilities can be aligned with Build Calgary • Determine the best ways Utilities can be aligned with a revised City financial strategy • Develop strategies for mitigating the risks of uncertain revenue • Assess the long-term ability of Utilities to maintain full recoveries for services • Assess Utilities' current business model versus alternatives such as corporatized utility
Step 6: Provide conclusions and recommendations	

2.2 FINANCIAL REVIEW OBJECTIVES

Ultimately, the objectives outlined in in the Financial Review RFP can be distilled into the following straight forward construct presented in Figure 1:

FIGURE 1: FINANCIAL REVIEW OBJECTIVES

The objective of the financial review is to assess Utilities' current and projected levels of financial risk and make recommendations to mitigate this risk through changes to Utilities' existing:

- *Financial Policies and Practices*
- *Governance Structure*
- *Management Structure*

The remainder of this report describes the process used by RFC to assess Utilities' financial risk, the findings of our risk assessment, and our conclusions and recommendations.

2.3 ACKNOWLEDGEMENTS

RFC would like to thank Utilities and City personnel that are listed below. These individuals contributed their time, expertise, and support to the Financial Review. Our special thanks goes to Kathy Davies Murphy, UEP Program Manager, for the City's Build Calgary initiative and the UEP Project Manager for the Financial Review.

Utilities and Environmental Protection
Mr. R.G. Pritchard, General Manger
Mr. Rob Spackman, Director, Water Resources
Mr. Dan Limacher, Director, Water Services
Mr. Ian Morley, Manager, Infrastructure Delivery
Ms. Shannon Abbott, Manager, Customer & Strategic Services
Mr. Paul Fesko, Manager UEP Customer Service
Mr. Francois Bouchart, Manager, Infrastructure Planning
Ms. Sarah Huber, Leader, Development Planning
Mr. Andy Hughes, Leader Asset Planning
Mr. Florent Le Berre, Senior Infrastructure Performance Coordinator
Ms. Eduglys Galindo, Business Performance Analyst
Chief Financial Officer's Department
Mr. Eric Sawyer, Chief Financial Officer
Ms. Gillian Skeates, Manager, UEP Finance
Mr. John Kwong, Manager, Corporate Budgeting, Economics, Management Analysis & Reporting
Mr. Bret Dykstra, Senior Finance Lead
Ms. Marie Casey, Financial and Rates Analyst

City Manager's Office
Mr. Jeff Fielding, City Manager
Deputy City Manager's Office
Mr. Brad Stevens, Deputy City Manager
Mr. Joel Armitage, Director, Office of Land Services and Housing
Planning, Development and Assessment
Ms. Kathy Dietrich, Manager, Corporate Growth Management
Law Department
Ms. Jill Floen, Assistant City Solicitor

SECTION 3: UTILITIES OVERVIEW

3.1 ORGANIZATIONAL STRUCTURE

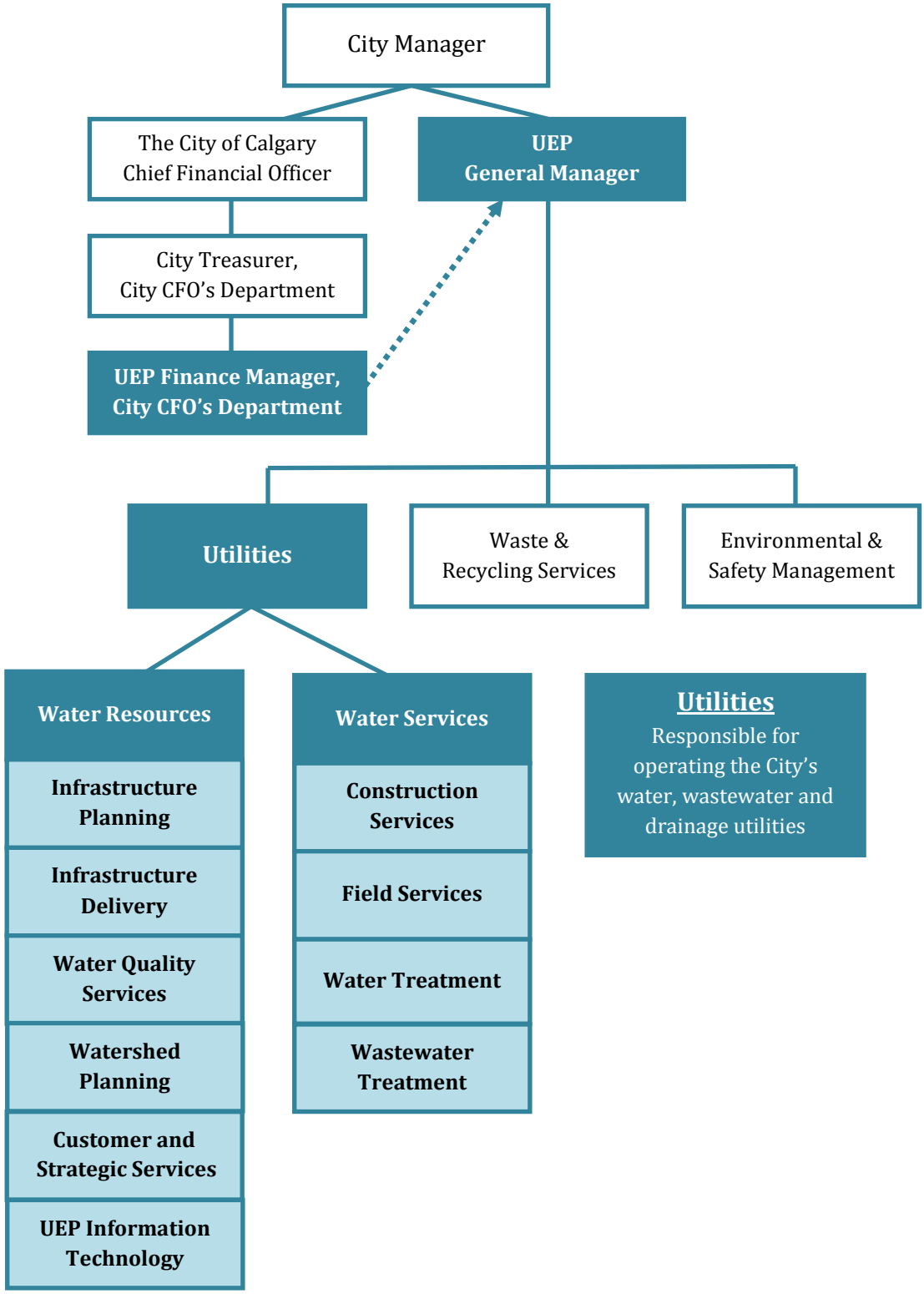
UEP is a municipal department within the City's corporate structure. The Utilities Business Unit of UEP consists of the Water Services and Water Resources functions which operate the City's water, wastewater and drainage utilities. Figure 2 provides a high level overview of the UEP organization structure. As show in Figure 2, there is no direct line of reporting authority from the UEP General Manager to the UEP Finance Manager. Instead, the UEP Finance Manager is part of the City's CFO Department who reports to the City Treasurer.

3.2 BUDGETARY AND RATE APPROVAL PROCESS

The City operates on a four-year business planning cycle. In 2014, the City Council adopted an Action Plan for the 2015 – 2018 business planning cycle which included the adoption of the annual budgets for each City department during the years 2015 - 2018. In addition to adopting the annual budgets for Utilities and the other UEP business units, the City Council also adopted the water, wastewater and drainage utility rates to be in effect during the years 2015 – 2018.

The City Council considers budget modification requests made by City departments during each year of the four-year business planning cycle. However, it is unusual for UEP to request a modification to the schedule of utility rates adopted by the City Council for each year of the business planning cycle. Thus, to the extent that Utilities requires revenues greater than those contained in its adopted annual budgets, it will seek City Council approval to fill the revenue gap by taking on additional external debt financing or via short-term borrowings from the City itself.

FIGURE 2: UEP ORGANIZATIONAL STRUCTURE



3.3 BUDGETARY METRICS

Utilities provides water, wastewater and drainage services to approximately 1.3 million people in the City and surrounding suburban jurisdictions. Utilities operates two water treatment plants, three wastewater treatment plants, and all of the associated water, wastewater, drainage utility infrastructure necessary to serve the demands of the City's rapidly growing population. Table 3 shows the relationship between Utilities and UEP as a whole.

TABLE 3: UTILITIES BUDGETARY METRICS

	2014	2015	2016	2017	2018
Operating Budget ($ Thousands)					
UEP Total	$727,040	$825,186	$890,957	$978,476	$1,063,786
Utilities	577,632	664,640	723,895	787,395	856,917
Utilities % Share	79.40%	80.54%	81.25%	80.47%	80.55%
Capital Budget ($ Thousands)					
UEP Total	$566,198	$445,569	$559,479	$569,092	$372,158
Utilities	493,695	344,211	433,358	508,755	339,208
Utilities % Share	87.2%	77.3%	77.5%	89.4%	91.1%
Outstanding Long-Term Debt ($ Thousands)					
UEP Total	See Note 1				
Utilities	1,779,042	1,934,086	2,037,849	2,173,298	2,208,807
Full-Time Equivalent Positions					
UEP Total	1,884.10	1,940.10	1,953.10	2,008.10	2,013.10
Utilities	1,233.50	1,278.50	1,287.50	1,302.50	1,304.50
Utilities % Share	65.47%	65.90%	65.92%	64.86%	64.80%

Note 1: UEP does not prepare a department-wide debt projection

3.4 TRANSFER PAYMENTS TO THE CITY

UEP pays both franchise fees and return on equity payments to the City. The amount of these transfer payments, which are almost entirely provided by the water and wastewater utilities, are shown in Table 4.

TABLE 4: UEP TRANSFER PAYMENTS TO THE CITY ($ Thousands)

Metric	Actual 2014	2015	2016	2017	2018
Franchise Fees	$49,928	$51,702	$55,993	$60,628	$65,650
Return on Equity	42,500	42,500	42,500	42,500	42,500
Total Transfers	$92,428	$94,202	$98,493	$103,128	$108,150

The franchise fees paid by UEP to the City are based on a rate of 10% of retail revenues. The return on equity payment is capped by the City at $28.75 million for the water utility and $13.75 million for the wastewater utility. In 2014, the combined payment of $42.5 million to the City

corresponded to a return on equity of approximately 6.7% based Utilities' 2014 equity of $631.9 million.

3.5 CONTRIBUTION TO TOTAL CITY DEBT

As an infrastructure based organization, UEP is responsible for a large portion of the City's tangible capital assets (approximately 32% at the end of 2014) and a large portion of the City's overall debt burden. Table 5 shows Utilities contribution to the City's total debt limit (22.4%) and actual debt (42.8%) at the end of 2014.

TABLE 5: UTILITIES CONTRIBUTION TO CITY DEBT
($ Thousands)

Metric	2014 End of Year Metrics	UEP and Utilities as a % of Actual City Debt	UEP and Utilities as a % of City Self-Imposed Debt Limit	UEP and Utilities as a % of Maximum Allowable City Debt
UEP Long-Term Debt	$1,818,000	48.76%	31.92%	25.54%
Utilities Long-Term Debt	1,779,042	47.72%	31.24%	24.99%
Actual City Long-Term Debt	3,728,462			
City Self-Imposed Debt Limit (80% of the Maximum)	5,695,568			
Maximum City Debt Limit Under the Municipal Government Act (2X Revenue)	7,119,460			

SECTION 4: RISK ASSESSMENT PROCESS

4.1 INTERVIEWS WITH UEP AND CITY PERSONNEL

The first step in the Financial Review risk assessment process was to gain an understanding of Utilities financial risks from the perspective of actual UEP and City personnel. To accomplish this objective, RFC conducted approximately 20 individual one-on-one interviews with:

- UEP Senior Executives, including the General Manager and the Directors of the Water Resources and Water Services business units;
- Utilities planning, engineering, and finance personnel from the Customer & Strategic Services, Infrastructure Planning and Infrastructure Delivery sections of the Water Resources business unit;
- Members of the City CFO's department providing business support for UEP including the UEP Finance Manager and UEP Senior Finance Lead;
- City senior executives including the City Manager, Assistant City Manager, and City CFO.

The information gained in these interviews played an important role in the formulation of RFC's recommendations regarding Utilities' governance and financial management structure risks as a discussed in Sections 10 and 11 of this report.

4.2 ANALYSIS OF FINANCIAL INFORMATION

RFC analyzed a wide variety of UEP and Utilities financial information. Critical financial information reviewed by RFC included:

- UEP and Utilities Action Plans for periods 2012 – 2014 and 2015 – 2018;
- UEP rate models (i.e., financial plans) for the water, wastewater and drainage utilities;
- Internal UEP financial statements for the water, wastewater and drainage utilities;
- Monthly internal management information reports provided to the UEP Executive Team;
- Documentation for the most recent Utilities cost of service study;
- UEP financial policies;
- City Off-site Levy BYLAW NUMBER 34M2011
- Presentations on potential revisions to the off-site levy assessment and collection process as developed for the City's Build Calgary initiative;
- Pro forma financial forecasts of the revenue and debt service impacts of potential revisions to the off-site levy assessment and collection process;
- City 2014 Annual Report;
- City 2011 Long-Range Financial Plan.

4.3 REVIEW OF PLANNING AND ENGINEEING INFORMATION

RFC was not engaged by the City to perform an assessment of UEP's planning, engineering or operational functions. Nonetheless, these functions make a significant contribution to Utilities' overall level of financial risk. Indeed, U.S. credit ratings agencies have increasingly focused on these functional areas when assessing utility financial risk. In an effort to better understand Utilities' functional capabilities in these areas, RFC reviewed a variety of planning and information including:

- 2015 Budget Finalization presentations for the 2015 – 2018 Action Plan Update;
- Utilities' 2015 – 2018 capital improvement plan;
- Draft Long-Range Water Plan dated December 6, 2011;
- 2005 Water Efficiency Plan;
- 2011 City of Calgary Drought Management Plan;
- 2015 Scottish Water Zero-Based Budget Report of Water Services;
- 2014 Sanitary Sewer Long-Range Plan.

4.4 REVIEW OF GROWTH MANAGEMENT INFORMATION

To better understand the challenges faced by Utilities to cope with the rapid population and development growth in the Calgary metropolitan area, RFC reviewed a variety of City growth management documents. These included in the City's Municipal Development Plan, several recent area structure plans, and the North and South Regional Context Studies.

4.5 COMPARISON TO U.S. CREDIT RATINGS AGENCY CRITERIA

A key driver of RFC's final risk assessment as based on a comparison of Utilities financial and managerial metrics to the criteria used by U.S. credit ratings agencies to assess the risk that water and wastewater utilities will default on debt service payments to external creditors. These financial metrics are discussed in Section 7 of this report.

4.6 BUSINESS SCENARIO STRESS TESTS

In addition to a comparison Utilities financial and manager metrics to U.S. credit ratings agency criteria, RFC also conducted business scenario "stress tests" to determine the negative cash flow impacts of: 1) large declines in billed water and wastewater demand; and, 2) large unplanned increases in capital improvement program expenditures. These stress tests are discussed in Section 7 of this report.

4.7 REVIEW OF PEER UTILITIES

The final step in the Financial Review risk assessment process was a comparison of Utilities financial metrics, financial policies, governance structures and management structures to a group of

peer utilities selected by UEP for consideration in the Financial Review (see Section 8.2). Although the peer utility review was not a primary determinate of RFC's financial risk assessment, our findings regarding the governance and management structures of the peer utilities does serve to buttress RFC's recommendations regarding Utilities' governance and management structures.

SECTION 5: SUMMARY OF RISK FACTORS

5.1 UTILITIES RISK FACTORS AND MITIGIATION STRATEGIES

Table 6 presents a summary of the financial risk factors identified by RFC as part of the Financial Review process. At first glance, these risk factors many create the impression that Utilities suffers from a very high level of financial risk. However, this is not the case. RFC's believes that Utilities' overall level of financial risk is, at worst, moderate in nature. Further, many of the risk factors noted in Table 6 are similar to those faced by other large and sophisticated utilities throughout North America. A discussion of the proposed risk mitigation strategies listed in Table 6 is presented throughout this report.

TABLE 6: RISK FACTORS AND MITIGATION STRATEGIES

Prioritized Risk Factor	Risk Factor Components	Proposed Mitigation Strategies
Financial Management Risk	• Complex financial issues but no internal UEP Director of Finance and Administration reporting to the UEP GM. • Financial support staff is highly decentralized and does not report to a UEP Director of Finance and Administration. • No UEP Director of Finance and Administration to impose financial discipline and implement fiscal policies.	• Create a UEP Director of Finance and Administration position reporting to the UEP GM with full responsibility for all UEP financial management functions (see Section 11.3).
Governance Risk	• Concern that City Council does not understand the complexity of UEP issues, especially as it relates to dealing with a growing population and evolving City Council growth management policies. • Concern regarding a general lack of ongoing governance oversight to assist UEP strategic decision making and provide support for UEP issues presented to City Council.	• Establish an independent PUC to govern UEP (see 10.3).
Capital Financing Risk	• Limited cash reserves to pay for capital cost overruns. • Inadequate recovery of growth capital via off-site levies.	• Establish a capital reserve fund to absorb negative capital cost budget variances (see Section 9.7). • Move to attainment of the UEP policy of 100% cash financing of maintenance capital (see Section 9.2).

Prioritized Risk Factor	Risk Factor Components	Proposed Mitigation Strategies
Debt Management Risk	• Uncertainty regarding the level of debt financing appropriate for UEP.	• Utilities should not continue to set an arbitrary debt limit such as the current self-imposed limit of $2 billion (see Section 9.3).
Operating Reserve Risk	• Inadequate cash reserves to deal with emergency contingencies.	• Begin using the financial policy of having a sustainment reserve equal to 120 days of annual operations and maintenance expenses (see Section 9.6).
Transfer Payment Risk	• Uncertainty regarding the level of transfer payments made to the City.	• Eliminate the current return on equity calculation and, in addition to franchise fees, make a transfer payment to the City based on the municipal property tax (see Section 8.8).
Financial Transparency Risk	• Utilities financial statements may lack transparency and understandability.	• UEP should produce annual fully auditable annual financial statements for the water, wastewater, drainage and reclaimed water utilities *as if they were fully self-supporting standalone entities* (see Section 7.14).
Infrastructure Planning and Delivery Risks	• Potential for large negative cost variances for individual capital projects. • Potential for extended construction delays for individual capital projects. • Potential for large negative variances in forecast aggregate capital expenditures. • Potential for capital spending in excess of UEP rate model assumption of 75% of the City Council approved budget.	• Continue to implement improvements to the capital project planning and delivery processes. • Create a UEP Director of Finance and Administration reporting to the UEP GM with full responsibility for all UEP financial management functions (see Section 11.3). RFC believes that a UEP Director of Finance and Administration can serve as a "counter-balance to the UEP planning and engineering functions (see Section 11.4). • Establish a capital reserve fund to absorb negative capital cost budget variances (see Section 9.7).

SECTION 6: ORGANIZATIONAL STRENGTHS

6.1 ACKNOWLEDGING UTILITIES' OPERATIONAL STRENGTHS

The detailed analysis of Utilities undertaken by RFC revealed, in addition to financial risk factors discussed in Section 5, several impressive operational strengths. It is important to acknowledge these strengths within the context of the Financial Review process to insure that City Council and other interested stakeholders fully recognized the excellent capabilities within the Utilities organization.

6.2 PLANNING AND ENGINEERING FUNCTIONS

As noted previously, RFC was not engaged by the City to perform an assessment of UEP's planning, engineering or operational functions. Further, one of the primary risk factors identified by RFC is the potential for large capital cost overruns (a problem for many utilities). These facts notwithstanding, RFC is favorably impressed with the competency of Utilities planning and engineering functions which appear to be on par with the largest and most sophisticated North American utilities.

The competency of the planning and engineering functions is empirically observable by the fact that Utilities has successfully installed and operated the infrastructure necessary to keep pace with the City's explosive growth over the last two decades. Further, the Water Resources business unit has produced, or hired consultants to produce a wide variety of comprehensive planning studies. The results of these studies have, to at least some degree, been incorporated into Utilities long-range capital improvement expenditure forecasts. These studies include: water and sanitation integrated resource planning; river basin management; water use efficiency; drought management; water reuse; and storm water management.

6.3 ALIGNMENT WITH CITY COUNCIL GOALS AND OBJECTIVES

The City engages in a variety of comprehensive planning activities designed to ensure the effective implementation of long-term City Council fiscal, economic development and environmental sustainability priorities. Planning documents detailing the City's key priorities include the City's 2007 imagineCALGARY Plan, the 2009 Municipal Development Plan, the 2011 Long-Range Financial Plan and the 2020 Sustainability Direction (2012). RFC's review of the Utilities' Action Plans for the periods 2012 - 2014 and 2015 – 2018 indicate a close alignment with the City Council's general policy directives and the specific policies, targets and performance measures outlined in each of the above referenced corporate-wide planning documents. Most recently, the Utilities has played a crucial role in the City's Build Calgary initiative, a collaboration between multiple City departments

and external stakeholders with a mission to prioritize and meet the ever-changing demands of growth.

6.4 COMMITMENT TO IMPROVE OPERATIONAL PERFORMANCE

UEP has made a commitment to continuously improve Utilities' operational performance both in terms of increased operational efficiencies and improved risk profiles. This commitment is empirically observable in three primary ways. The first is the identification of numerous potential operational efficiencies in the Water Resources and Water Services business units as part of the City-wide zero based budgeting initiative. The second is UEP's willingness to undertake the Utilities Financial Review which is the subject of this report. RFC fully expects that UEP senior management will thoughtfully consider all, and ultimately implement many, of the recommendations made by RFC in this report. Finally, the Infrastructure Planning and Delivery Functions within the Water Resources business unit have invested significant effort in identifying methods to prioritize capital infrastructure projects in order achieve construction cost efficiencies and minimize the potential for both construction cost overruns and construction schedule delays.

6.5 ROUTINE COST OF SERVICE STUDY UPDATES

Utilities' employs qualified rate consulting firms to conduct comprehensive water and wastewater cost of service study updates every budget cycle. RFC fully supports this policy because it ensures that the rate revenue recovery is closely aligned with the actual costs each customer class imposes on water and wastewater systems. Secondarily, it allows for the routine re-consideration of the rate designs used to recover revenue from each customer class. This ensures that water and wastewater rate designs can be modified as needed to best achieve City Council priorities such low-income customer bill affordability and the transmission of water conservation price signals to high consumption customers.

SECTION 7: FINANCIAL RISK ASSESSMENT

7.1 COMPARISONS TO U.S. CREDIT RATING AGENCY CRITERIA

The key question RFC sought to answer when assessing Utilities overall level financial risk was:

> *When viewed on a standalone basis, not considering any potential financial support from the City, what is the financial risk level of Utilities?*

From RFC's perspective the most effective way to answer this question was to compare selected Utilities financial and managerial metrics to the criteria used by U.S. credit ratings agencies to assess the risk that water and wastewater utilities will default on debt service payments to external creditors. As there are few, if any, financial and operational differences between U.S. and Canadian water, wastewater and drainage utilities, the use of such criteria is appropriate. The City itself strives to maintain its AA+ credit rating from Standard & Poor's Ratings Services. The specific criteria assessed by RFC were:

- Debt Levels;
- Debt Service Coverage;
- Cash Reserves;
- Concentration of Credit Risk;
- Selected Non-Quantifiable Criteria.

In addition to the use of credit rating agency criteria, RFC also conducted business scenario "stress tests" to determine the negative cash flow impacts of: 1) large declines in billed water and wastewater demand; and, 2) large unplanned increases in capital improvement program expenditures.

7.2 RATIO OF LONG-TERM DEBT TO NET UTILITY PLANT ASSETS

As shown in Table 7 below, Utilities' debt level compares favorably to Standard & Poor's criteria.

TABLE 7: RISK FACTORS AND MITIGATION STRATEGIES

Standard & Poor's Criteria		2014 Water	2014 Wastewater	2014 Utilities
< 40%	Low	---	---	---
40% to 60%	**Moderate**	51.41%	53.73%	38.55%
60% to 80%	Moderately High	---	---	---
> 80%	High	---	---	---

7.3 DEBT SERVICE COVERAGE

As shown in Table 8, Utilities' ability to cover its debt service payments, when measured by debt service coverage ratios, compares favorably to Standard & Poor's criteria. Note that the forecast debt service coverage ratios calculated by RFC are before any change in the off-site levy assessment and collection process.

TABLE 8: DEBT SERVICE COVERAGE

Standard & Poor's Criteria		Year	Water	Wastewater	Utilities
< 1.0x	Insufficient	2014	1.44	1.61	1.52
1.0x - 1.25x	Adequate	2015	1.52	1.98	1.73
1.26x to 1.50x	Good	2016	1.61	2.08	1.84
>1.5x	Strong	2017	1.73	2.21	1.99
		2018	1.80	2.14	1.99
		2019	1.84	2.07	1.97
		2020	1.84	2.05	1.97
		2021	1.79	2.05	1.95
		2022	1.86	2.13	2.03
		2023	1.83	2.21	2.08
		2024	1.72	2.23	2.04
		2025	1.59	2.23	2.00
Formula for Calculating UEP Debt Service:					
(Total Revenues – (O&M Expenses + Payments to the City)) / Total Debt Service					

7.4 OPERATING CASH RESERVES: DAYS CASH ON-HAND

As shown in Table 9, Utilities' compares very unfavorably to credit ratings criteria as it relates to operating cash reserves. This situation is forecast to reverse in 2018 when Utilities is in full compliance with its internal financial policy of maintaining sustainment reserves equal to 10% of total revenues.

TABLE 9: OPERATING CASH RESERVES - DAYS CASH ON-HAND

Standard & Poor's Criteria		Year	Water	Wastewater	Utilities
< 30 days	Insufficient	2015	15.33	1.9	8.33
30 to 60 days	Adequate	2016	15.33	1.9	8.33
60 to 120 days	Good	2017	15.33	33.52	24.82
> 120 days	Strong	2018	109.96	126.41	118.53
		2019	109.96	130.64	120.74
		2020	109.96	134.94	122.99
		2021	109.96	139.51	125.37
		2022	110.01	144.13	127.8
		2023	110.09	148.91	130.34
Formula for Calculating UEP Days Cash on Hand: Cash / (O&M Expenses / 365 days)					

7.5 CONCENTRATION OF CREDIT RISK

One key financial risk factors considered by credit ratings agencies is to what extent utilities will suffer a significant loss of water or wastewater sales revenue due to an extremely large customer leaving the system. Utilities has a very diverse customer base dominated single family residential customers. Correspondingly, no single large industrial, commercial or institutional customer provides a significant level of sales revenue. For example, as shown in Table 10, there are a total of 1,443 large general service customer accounts which produce only 10.3% of aggregate water sales revenue. As a result, Utilities has a very low concentration of credit and associated financial risk.

TABLE 10: CONCENTRATION OF CREDIT RISK

Standard & Poor's Criteria	Water Customer Class	2014		
<15% Diverse		Accounts	Revenue	% of Revenue
15% - 25% Very Diverse	Residential Flat	9,592	9,278,182	3.31%
26% - 40% Moderately Concentrated	Residential Metered	329,263	178,627,938	63.79%
> 40% Highly Concentrated	MF Metered	4,548	20,055,759	7.16%
	General Service – Regular	13,576	26,109,124	9.32%
	General Service – Large	1,443	28,467,418	10.17%
	General Service - Irrigation	5,594	12,123,665	4.33%
	Bulk Water	120	391,011	0.14%
	Outside City Wholesale	4	4,968,126	1.77%
	Total	364,140	280,021,223	100.00%
	Wastewater Customer Class	2014		
		Accounts	Revenue	% of Revenue
	Residential Flat	10,962	6,611,756	2.99%
	Residential Metered	311,520	132,112,114	59.68%
	Multi-family Metered	4,547	13,335,754	6.02%
	General Service	14,869	42,397,690	19.15%
	Extra Strength	0	5,474,339	2.47%
	Septage Hauling	46	3,994,758	1.80%
	Effluent & Ground Water	41	3,624,812	1.64%
	Outside Wholesale	4	13,816,257	6.24%
	Total	341,989	221,367,480	100.00%

7.6 REVENUE AND EXPENSE ASSUMPTIONS ASSESSMENT

Standard & Poor's Criteria:

Revenue And Expense Assumptions Assessment	
Strong	Weather-normalized, formal historic trend analysis is performed and updated annually for both revenue and expenses; regular effort is made to determine whether one or more factors will cause revenues or expenses to deviate from their long-term trends over the next few years.
Good	Assumptions for most key line items in the pro forma are analyzed and updated regularly, while others may assume simplistic changes over time such as linear or inflationary growth or flat from year to year.
Standard	Optimistic assumptions exist that, while supportable, add risk; assumptions are based on recent performance, but little evidence of questioning or validating assumptions exists.
Vulnerable	Assumptions neglect likely shortfalls, expense pressures or other pending issues; assumptions lack prudent validation.

RFC Assessment of Utilities: Good

7.7 BUDGET MONITORING AND INTERIM REPORTING ASSESSMENT

Standard & Poor's Criteria:

Budget Monitoring And Interim Reporting Assessment	
Strong	At least quarterly budget surveillance is maintained to identify problem areas and publicly reported to the utility's governing body.
Good	Semi-annual budget reviews exist; management identifies causes for variances between budget and actual performance and reports them to the utility's governing body.
Standard	A deviation from the budget is only reported when it has occurred; material variances in budget-to-actual are identified after they have occurred but not captured in projections for the remainder of the fiscal period.
Vulnerable	No formal process exists for regular review and timely updating of budget during the year.

RFC Assessment of Utilities: Standard (See Note 1)

Note 1: UEP Senior Executives, including the General Manager and the Directors of the Water Resources and Water Services business units, receive monthly and quarterly reports identifying and explaining material variations between Utilities' the budget and actual performance. Further, the UEP Finance Manager is currently part of the City's CFO Department (see Figure 2 in Section 3.2 and the discussion in Section 11.1). Thus, RFC assumes the City's CFO Department is also aware of the causes for material variances between budget and actual performance. These factors support the assessment of Utilities' Budget Monitoring and Interim Reporting risk as "Good" per the criteria shown above. This fact notwithstanding, RFC's current understanding is that the City Council (Utilities' governing body) does not directly conduct a semi-annual budget review. For this reason, RFC has assessed Utilities' Budget and Interim Reporting risk as "Standard."

Standard & Poor's Criteria:

Long-Term Financial Planning Assessment	
Strong	A regularly updated pro forma financial projection exists with a planning horizon of at least three years beyond the current budget year. The forecast includes future impacts om operating and maintenance (O&M) expenses and total financing obligations – both existing and probable – are identified. The impacts on rates or the ability to effect appropriate levels of pledged revenues such as cost containment measures are clear. Planned use of designated cash reserves may occur infrequently, but structural balance is a clear goal.
Good	Pro forma projections exist and are comprehensive as described for a 'strong,' but are typically over a planning horizon of no more than the upcoming budget year plus one to two years.
Standard	Multiyear projections are done but not updated until the last year of the current forecast; multiyear projections are done, but with focus only on existing revenue requirements and exclude debt financing that is likely to be issued within the planning horizon, or ignore looming but imminent infrastructure investment needs such as growth or regulatory mandates.
Vulnerable	No long-term financial planning exists; O&M planning is done on a year-to-year (or budget-to-budget) basis. Near-term challenges are met with short-term fixes.

RFC Assessment of Utilities: Strong

7.9 ASSET ADEQUACY AND IDENTIFICAITON OF OPERAITONAL RISK

Standard and Poor's criteria

Asset Adequacy And Identification Of Operational Risks Assessment	
Strong	The utility has in place or is in the process of securing a raw-water supply that is reasonably projected to be sufficient through the life of the bonds. The integrity of the distribution and/or collection system, meters, and raw-water delivery assets is strong, or efforts are ongoing to rehabilitate them. Treatment capacity to meet average and peak day demand is sufficient in virtually every circumstance. Climate risk assessment is incorporated into planning and operations as a potential risk. Nonrevenue water is 10% to 15%.
Good	The existing raw-water supply is sufficient for the existing customer base. The utility may need to enhance the supply sometime beyond the next 20 to 25 years, depending on growth and climatology/hydrology, but management has identified this risk in its long-term plans. Inflow and infiltration, and/or raw-water delivery are generally not problematic, or efforts are ongoing to rehabilitate them. Treatment capacity to meet average and peak day demand or flow is sufficient with only rare exceptions. Climate risk assessment is addressed in some key areas, like supply planning or flood protection. Nonrevenue water is 15% to 20%.
Standard	The existing raw-water supply will likely need to be enhanced within the next 10 to 20 years, but options for addressing the need have not yet been identified, or if so, have not fully priced. Inflow and infiltration, and/or raw-water delivery pronounced but not yet material, or are problematic but will be addressed within the current capital improvement plan. Treatment capacity to meet average day demand is sufficient, but peak day demand or wet weather flows create constraints until ongoing projects are completed. Climate risks are identified, but other priorities preclude any immediate actions. Nonrevenue water is 20% to 30%.
Vulnerable	The existing raw-water supply and/or treatment capacity cannot currently and consistently meet peak day demand or flows. The raw-water supply is subject to a high degree of regulation and/or litigation, which can quickly introduce long-term uncertainty. Inflow and infiltration, and/or raw-water delivery are problematic and material. Or the utility is highly dependent on/susceptible to another water purveyor. Climate risk is not explicitly addressed either in plans or operations. Nonrevenue water is more than 30%.

RFC Assessment of Utilities: Strong

7.10 BUSINESS SCENARIO RISK #1: DECLINE IN BILLED CONSUMPTION

A question that RFC sought to answer as part of the Financial Review is whether Utilities has adequate cash reserves to withstand a decline in billed water consumption and associated wastewater discharges. To answer this question, RFC modeled this business scenario; the results of which are shown in Table 11. In 2016, the water utility is forecast to have cash reserves that will allow it to withstanding a 5% decline in customer billed water consumption as indicated by the maintenance of a forecast positive ending cash reserve balance of $1.452 million after a 5% decline. The wastewater utility is forecast to have cash reserves that will allow it to withstand a 7% decline in billed wastewater discharges as indicated by the maintenance of a positive ending cash reserve balance of $450K after a 7% decline. Both of these metrics will improve significantly in 2018 when Utilities is in full compliance with its internal financial policy of maintaining sustainment reserves equal to 10% of total revenues. As a result, RFC considers Utilities' overall risk to be high during the period 2016 – 2017 and low in 2018 and beyond.

TABLE 11: REVENUE IMPACTS OF A DECLINE IN BILLED WATER CONSUMPTION ($ Thousands)

Water Utility	Baseline Rate Model Forecast	Annual % Decline in Billed Water Consumption						
		-1.0%	-2.0%	-3.0%	-4.0%	-5.0%	-6.0%	-7.0%
2016 Volumetric Revenue Recovery	$290,251	$288,241	$286,231	$284,221	$282,211	$280,201	$278,191	$276,181
Estimated 2016 Total Ending Cash	$11,502	$9,492	$7,482	$5,472	$3,462	$1,452	($558)	($2,568)
Cumulative Decline in Cash		($2,010)	($4,020)	($6,030)	($8,040)	($10,050)	($12,060)	($14,070)
2014 Water Inside City Revenue Contributions								
Fixed Revenue Recovery %		29.7%						
Volumetric Revenue Recovery %		70.3%						
Wastewater Utility	**Baseline Rate Model Forecast**	**Annual Decline in Billed Wastewater Discharges**						
		-1.0%	-2.0%	-3.0%	-4.0%	-5.0%	-6.0%	-7.0%
2016 Volumetric Revenue Recovery	$288,186	$286,338	$284,490	$282,642	$280,794	$278,946	$277,098	$275,250
Estimated 2016 Total Ending Cash	$13,386	$11,538	$9,690	$7,842	$5,994	$4,146	$2,298	$450
Cumulative Decline in Cash		($1,848)	($3,696)	($5,544)	($7,392)	($9,240)	($11,088)	($12,936)
2014 Wastewater Inside City Revenue Contributions								
Fixed Revenue Recovery %		35.0%						
Volumetric Revenue Recovery %		65.0%						

7.11 BUSINESS SCENARIO RISK #2: UNPLANNED CONSTRUCTION COST INCREASES

A critical risk factor faced by Utilities is the possibility of cost overruns on one or more major capital projects. To estimate this risk, RFC prepared the analysis shown in Table 12. In 2016, the water utility is forecast to have the ability to absorb a 20% increase in the budgeted capital expenditures used to set rates as indicated by the maintenance of a forecast positive ending cash

reserve of $2.124 million after a 20% cost overrun. Conversely, the wastewater utility has the ability to absorb an approximate 10% cost overrun as indicated by the maintenance of a forecast positive ending cash reserve of $4.688 million after a 10% cost overrun. RFC considers the financial risk associated with water utility construction cost overruns to be low. However, given the significant wastewater utility capital expenditures forecast for 2016 and beyond, RFC considers the financial risk of wastewater construction cost overruns to be high. This level of risk is a key reason for RFC's recommendation, as discussed in Section 9 of this report, that UEP establish a capital reserve equal to 25% of average annual capital expenditures during its four-year budget cycle (see Section 9.7).

TABLE 12: CASH IMPACTS OF CONSTRUCTION COST OVERRUNS
($ Thousands)

Water Utility	Baseline Rate Model Forecast	Unplanned Increase in Capital Expenditures					
		1.0%	3.0%	5.0%	10.0%	15.0%	20.0%
2016 Capital Expenditures Used to Set Rates	$82,154	$82,976	$84,619	$86,262	$90,370	$94,477	$98,585
Estimated 2016 Total Ending Cash	$18,555	$17,733	$16,090	$14,447	$10,339	$6,232	$2,124
Decline in Cash		($822)	($2,465)	($4,108)	($8,215)	($12,323)	($16,431)
Wastewater Utility	**Baseline Rate Model Forecast**	**Unplanned Increase in Capital Expenditures**					
		1.0%	3.0%	5.0%	10.0%	15.0%	20.0%
2016 Capital Expenditures Used to Set Rates	$214,826	$216,974	$221,271	$225,567	$236,309	$247,050	$257,791
Estimate 2016 Total Ending Cash	$26,171	$24,023	$19,726	$15,430	$4,688	($6,053)	($16,794)
Decline in Cash		($2,148)	($6,445)	($10,741)	($21,483)	($32,224)	($42,965)

7.12 BUILD CALGARY PRO FORMA FINANCIAL PROJECTIONS

As part of the financial risk assessment process, RFC reviewed water and wastewater utility pro forma financial projections based on the off-site levy assessment and recovery process currently utilized by the UEP. RFC also conducted a limited review of several pro forma financial projections featuring potential modifications to the current off-site process that will result in the recovery of 100% of the cost of growth-related infrastructure from new development. At the time of the writing of this report, these modifications were being studied as part of the City's Build Calgary initiative. RFC's review did not identify any obvious flaws in the assumptions or financial forecasting methodologies used to develop water and wastewater utility pro forma financial projections reflecting potential modifications to the off-site levy assessment and recovery process. Further, RFC fully supports the policy of recovering 100% of the cost of growth-related

infrastructure from new development. It should be recognized that the implementation of such a policy will enhance the financial risks faced UEP if actual off-site levy collections are less than anticipated due the inability of developers to render payment on a timely basis. RFC's recommendation that UEP establish a capital reserve equal to 25% of average annual capital expenditures during its four-year budget cycle (see Section 9.7) will serve to help mitigate this risk.

7.13 PRO FORMA FINANCIAL PROJECTIONS REFLECTING RFC RECOMMENDATIONS

RFC *did not* prepare pro forma financial projections for the water or wastewater utilities that reflect the recommendations made in this report. Our decision to forego the preparation of such projections was made for two key reasons. First, with the exception of the recommendation to create a capital reserve (see Section 9.7), RFC's recommendations will have a limited impact on long-term water and wastewater utility finances. Second, and much more importantly, it is very difficult to project future water and wastewater utility financial results until the future structure of the off-site levy assessment and recovery process is determined via the Build Calgary Initiative. RFC recommends that the final report made to City Council regarding this financial risk assessment include a comprehensive set of water and wastewater pro forma financial projections reflective of: 1) the final modifications made to the off-site levy assessment and recovery process determined in the Build Calgary initiative; and, 2) the recommendations made by RFC in this financial risk assessment report.

7.14 RECOMMENDATION REGARDING UEP FINANCIAL STATEMENTS

As part of RFC's review of the Utilities rate model, RFC also reviewed the internal year-end financial statements for UEP's water, wastewater, drainage, and reclaimed water utilities. These financial statements consist of a statement of financial position coupled with a comparison of budget versus actual revenues and expenses for each utility. Although these internal financial statements are extremely comprehensive and highly detailed in nature, RFC is concerned that they are fully understandable to only a small handful of City and UEP accounting personnel. This is especially true as it relates to reserve fund transfers made within each UEP utility and financial transfers made between UEP and the City. Thus, much like the forecasted financial information developed in the current Utilities rate model, these financial statements may be confusing/difficult to understand for the vast majority of users.

To enhance the usefulness of the financial information presented for Utilities, RFC recommends that UEP prepare fully auditable annual financial statements for the water, wastewater, drainage and reclaimed water utilities *as if they were fully self-supporting standalone entities*. Similar to the consolidated corporate financial statements presented in the City's Annual Report, these financial statements would be prepared under Canadian Public Sector Accounting Standards. This will ensure that all stakeholders (both internal and external) can fully understand the true financial position and results of operations for each UEP utility and will serve as an excellent complement to the revised presentation rate model forecasted financial information recommended by RFC.

7.16 RFC ESTIMATE OF UTILITIES' DEBT CREDIT RATING

Based on the discussion provided in Sections 7.1 - 7.14, it is RFC's opinion that Utilities debt, when viewed on a standalone basis separate from the City, would be assigned the following credit ratings:

Standard & Poor's: AA (Capacity to meet the financial commitment on obligations is very strong

Moody's Investors Service: Aa3 (High intrinsic strength and very low credit risk

SECTION 8: REVIEW OF PEER UTILITIES

8.1 IMPORTANCE OF THE PEER UTILITY REVIEW

As noted previously, RFC's assessment of Utilities' overall level of financial risk was driven primarily by a comparison of Utilities financial and managerial metrics to those used by U.S. credit ratings agencies when assigning risk ratings to the revenue bond debt issued by water and wastewater utilities. Nonetheless, the comparison of peer utilities does offer some interesting insights that substantiate RFC's assessment of Utilities' overall level of financial risk. Further our findings regarding the governance and management structures of the peer utilities serve to buttress RFC's recommendations for each of these areas.

8.2 PEER UTILITIES SELECTED FOR REVIEW

As part of the Financial Review, RFC analyzed key financial, governance structure and management metrics for a group of peer utilities approved by UEP. These utilities are shown in Table 13.

TABLE 13: PEER UTILITIES INCLUDED IN THE FINANCIAL REVIEW

Utility	
EPCOR Utilities, Inc. (Edmonton, Alberta)	Denver Water (Denver, Colorado)
Halifax Water (Halifax, Nova Scotia)	San Francisco PUC (San Francisco, California)
DC Water (Washington D.C.)	Philadelphia Water (Philadelphia, Pennsylvania)
Louisville Water Company (Louisville, Kentucky)	Charlotte Water (Charlotte, NC)

8.3 COMPARISON OF FINANCIAL METRICS

RFC compared Utilities' financial metrics with those of the peer utilities in three key areas:

- Total debt burden as measured by the ratio of long-term debt to net utility plant
- Debt repayment capacity as measured by debt service coverage ratios
- Operational cash reserves as measured by the metric "days cash on-hand"

8.4 RATIO OF LONG-TERM DEBT TO NET UTILITY PLANT ASSETS

Table 14 presents a comparison of Utilities' total debt burden, as measured by the ratio of long-term debt to net utility plant, to that of the peer utilities. The three columns on the far right of the table present, as applicable, the current U.S. and Canadian credit ratings for each utility's long-term debt. Denver Water, Louisville Water Company and Charlotte Water have very low levels of debt and correspondingly, the highest credit ratings. Utilities' ratio of long-term debt to net utility plant is similar to that of DC Water. DC water has a prime investment grade credit rating that is only one

step below the highest possible credit rating assigned by both Moody's Investors Service and Standard & Poor's.

TABLE 14: RATIO OF LONG-TERM DEBT TO NET UTILITY PLANT ASSETS

Utility	Ratio of Total LT Debt to Net Plant	Moody's Long-Term Debt Credit Rating	Standard & Poor's Long-Term Debt Credit Rating	DBRS Long-Term Debt Credit Rating
Halifax Water	18.60%			
Denver Water	19.55%	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: Capacity to meet the financial commitment on the obligation is extremely strong	
Louisville Water Company	23.61%	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: Capacity to meet the financial commitment on the obligation is extremely strong	
Charlotte Water	42.94%	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: Capacity to meet the financial commitment on the obligation is extremely strong	
EPCOR Utilities, Inc.	47.62%		A: Somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions. However, capacity to meet the financial commitment on the obligation is still strong.	A (low): Good credit quality with substantial capacity to pay financial obligations. Unlikely to be significantly vulnerable to future events.
UEP Water (2014)	**51.41%**			
DC Water	51.63%	Aa3: High intrinsic financial strength and very low credit risk	AA: Differs from the highest-rated obligations only to a small degree. Capacity to meet the financial commitment on the obligation is very strong.	
UEP Wastewater (2014)	**53.73%**			
SF PUC	78.34%	Aa3: High intrinsic financial strength and very low credit risk	AA-: Differs from the highest-rated obligations only to a small degree. Capacity to meet the financial commitment on the obligation is very strong.	
Philadelphia Water Department	89.42%	A1: Medium intrinsic financial strength and low credit risk	A: Somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions. Capacity to meet the financial commitment on the obligation is still strong.	

8.5 DEBT SERVICE COVERAGE RATIOS

Table 15 presents a comparison of Utilities' debt service coverage to that of the peer utilities. Debt service coverage for this this comparison was calculated per the following formula: *(Total Revenues – Annual Operations & Maintenance Expense) / Annual Debt Service*. Due to RFC's uncertainty regarding the appropriate calculation of debt service coverage ratios for EPCOR Utilities, Inc. and Halifax Water, these two utilities have not been included. As shown in Table 15, Utilities' estimated 2015 debt service coverage ratios compare favorably to those of several peer utilities.

TABLE 15: DEBT SERVICE COVERAGE RATIOS

Utility	Debt Service Coverage Ratio	Moody's Long-Term Debt Credit Rating	Standard & Poor's Long-Term Debt Credit Rating
Louisville Water Company	2.33	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: The obligor's capacity to meet its financial commitment on the] obligation is extremely strong.
Denver Water	2.28	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: The obligor's capacity to meet its financial commitment on the] obligation is extremely strong.
UEP Wastewater (2015 Estimate)	**1.98**		
Charlotte Water	1.97	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: The obligor's capacity to meet its financial commitment on the] obligation is extremely strong.
DC Water	1.70	Aa3: High intrinsic financial strength and very low credit risk	AA: An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.
UEP Water (2015 Estimate)	**1.52**		
SF PUC	1.33	Aa3: High intrinsic financial strength and very low credit risk	AA-: An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.
Philadelphia Water Department	1.28	A1: Medium intrinsic financial strength and low credit risk	A: An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.

8.6 DAYS CASH ON-HAND

Table 16 presents a comparison of Utilities' operational cash reserves, as measured by the metric day's cash on-hand, as compared to the peer utilities. Day's cash on-hand was calculated per the following formula: *Operating Cash Reserves / (Annual O&M Expenses / 365)*. As shown in Table 16. Utilities currently compares *very unfavorably* to the peer utilities for this metric. However, this situation will be corrected in 2018 when UEP fully implements its policy of maintaining sustainment reserves equal to 10% of total revenues.

TABLE 16: DAY'S CASH ON-HAND

Utility	Days Cash On-Hand	Moody's Long-Term Debt Credit Rating	Standard & Poor's Long-Term Debt Credit Rating	DBRS Long-Term Debt Credit Rating
Charlotte Water	353.7	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: The obligor's capacity to meet its financial commitment on the] obligation is extremely strong.	
SF PUC	340.3	Aa3: High intrinsic financial strength and very low credit risk	AA-: An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.	
Denver Water	191.0	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: The obligor's capacity to meet its financial commitment on the] obligation is extremely strong.	
Louisville Water Company	179.4	Aaa: Highest intrinsic financial strength and lowest credit risk	AAA: The obligor's capacity to meet its financial commitment on the] obligation is extremely strong.	
Halifax Water	155.7			
DC Water	153.7	Aa3: High intrinsic financial strength and very low credit risk	AA: An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.	
EPCOR Utilities, Inc.	85.4		A: The obligor is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.	A - Good Credit Quality with substantial capacity to pay financial obligations. Unlikely to be significantly vulnerable to future events
Philadelphia Water Department	73.0	A1: Medium intrinsic financial strength and low credit risk	A: An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.	
UEP Wastewater (2015)	**1.9**			
UEP Water (2015)	**15.3**			

8.7 COMPARISON OF TRANSFER PAYMENTS TO THE CITY

In addition to the consideration of key financial metrics, RFC also compared the amount of transfer payments made by Utilities to the City of Calgary as compared to similar payments made by a variety of other utilities. Such payments generally take the form of dividends (return on equity), franchise fees, right-of-way fees, etc. As shown in Tables 17 and 18, it appears that UEP's transfer payments are far larger than the other utilities surveyed. While this does not necessarily increase

Utilities' financial risk, it does mean that Utilities' rates include a larger burden for transfer payments than those of the other utilities surveyed.

TABLE 17: TRANSFERS TO THE CITY – UTILITIES, ENMAX, AND EPCOR

Utility	2014 Total Revenues ($ Millions)	2014 Total Franchise Fees/ Dividends ($ Millions)	2014 as a % of Total Revenues
UEP Utilities (Water and Wastewater)	$534.0	$92.4	17.3%
EPCOR Utilities, Inc.	$1,927.0	$235.0	12.2%
ENMAX Corporation	$3,348.3	$191.3	5.7%

TABLE 18: TRANSFERS TO THE CITY – ALL SURVEYED UTILITIES

Canadian Utilities	
Calgary UEP	17.3% of Total Revenues in 2014
EPCOR Utilities, Inc.	12.2% of Total Revenues in 2014. EPCOR made payments to the City of Edmonton totaling $235 million in 2014. These payments consisted of franchise fees of $94 million and dividends of $141 million. EPCOR shareholder equity at the end of 2014 was $2.34 billion (total assets less total liabilities). The dividend payment of $141 million is equivalent to 6.03% return on equity. The total payment of $235 million is equivalent to a return on equity of 10.04%.
ENMAX Corporation	5.7% of Total Revenues in 2014. ENMAX made payments to the City of Calgary in 2014 totaling $191.3 million. These payments consisted of local access fees of $131.3 million and dividends of $60 million. ENMAX shareholder equity at year-end 2014 was $2.527 billion (total assets less total liabilities). The dividend payment of $60 million is equivalent to a 2.37% return on equity. The total payment of $191.3 million is equivalent to a 7.57% return on equity.
Peer Utilities	
Halifax Water	0.5% of Operating Revenue
Denver Water	0%
San Francisco PUC	0%
Louisville Water	22% of Operating Revenue. Louisville Water made payments to communities in metropolitan Louisville totaling $36.5 million in 2014. These payments consisted of $14.9 million in free water and dividends of $20.6 million. Louisville Water net equity at the end of 2014 was $886.5 million (total assets less total liabilities). The dividend payment of $20.6 million is equivalent to a 2.32% return on equity. The total payment of $36.5 million is equivalent to a 4.12% return on equity.
Philadelphia Water	0%
Charlotte Municipal District	0%
Other Large Utilities	
Dallas Water Utilities	5% of Total Revenue
El Paso Water Utilities	10% of Water Sales Revenue. El Paso Water Utilities made payments of $10.5 million to the City of El Paso in 2014. El Paso Water Utilities net equity at the end of 2014 was $785.2 million (total assets less total liabilities). This is equivalent to a 1.34% return on equity.
Fort Worth Water Department	5% of Total Revenue
San Antonio Water System	2.7% of Total Revenue, option to go to 5%

8.8 RFC RECOMMENDATION REGARDING UTILITIES TRANSFER PAYMENTS

RFC takes no position regarding the amount of transfer payments made to the City. From our perspective, how the City chooses to fund its municipal operations raises fiscal and public policy questions far beyond the scope of this financial review. However, we would note that to the extent the City seeks to finance some of its municipal operations via comparatively "large" transfer payments from Utilities, it results in both the water and wastewater rates paid by customers being higher than would otherwise be the case.

From RFC's perspective, the key question related to Utilities' transfer payments to the City is how they should be calculated. At present, Utilities pays both a franchise fee equal to 10% of retail revenues and a return on equity payment which is currently capped at $28.75 million for the water utility and $13.75 million for the wastewater utility. Table 4 in Section 3.4 provides a detail of these payments which total to $92.4 million in 2014.

RFC has no objection to the franchise fee payments made to the City. These franchise fee payments have traditionally been assessed by the City in lieu of the payment of property taxes by Utilities. Notwithstanding the City's treatment of franchise fees as an alternative to property taxes, throughout North America, it is common for franchise fees to be paid by utilities (both public and investor-owned) to compensate municipalities for allowing public lands to be used to locate utility infrastructure. The most common example is the compensation municipalities receive for allowing utilities to locate underground infrastructure (water mains, electric lines, fiber optic cable, etc.) in the rights-of-way below municipal streets. From RFC's perspective, the franchise fees paid by Utilities should similarly be considered compensation to the City of the use of its underground rights-of-way.

In contrast to the basis of assessment for Utilities' franchise fees, RFC recommends the elimination of Utilities' return on equity payment to the City. In its place, RFC suggests that Utilities' payment to the City be based on a municipal property tax calculation similar to that applied to investor-owned utilities. That is, the assessed value of Utilities' above-ground property should be multiplied by the City's municipal property tax rate (currently 1.07367% for non-residential property). Under this proposal, Utilities would not pay the Alberta provincial property tax rate.

Regardless of whether such a payment is specifically designated as a municipal property tax payment or a "payment in-lieu of taxes," RFC believes it offers the benefit of being considerably more transparent and understandable to ratepayers and other stakeholders than the current Utilities' return on equity payment, which, prior to being capped at its current level was based on charging a 10% rate of return on the long-term accumulated surplus earned by Utilities.

The use of accumulated surplus raises a variety of complex questions regarding the appropriate calculation of return on equity payments. For example, for the purposes of a return on equity

calculation, should equity be based on accumulated surplus or the difference between utility financed assets and long-term liabilities? Similarly, what is the appropriate rate of return to use in a return on equity calculation? Should be based on the marginal cost of City long-term debt, current pronouncements by the Alberta Utilities Commission, or some other metric?

The use of a municipal property tax calculation as an adjunct to the franchise fees paid by Utilities eliminates these complexities and associated confusion, and, as a result, will create a far less arbitrary basis for determining the overall level of payments Utilities make to the City.

Table 19 estimates the theoretical property tax equivalent payment for the water and wastewater utilities under the following set of assumptions: 1) the City's current property tax rate of 1.07367% for non-residential properties is applied to the assessed value of water and wastewater utility above ground property; 2) the assessed value of water and wastewater utility above ground property is equivalent to estimated replacement cost less accrual accounting-based accumulated depreciation; and, 3) the replacement cost of water and wastewater utility assets is two times greater than the gross book value of utility property.
As shown in Table 19, under this set of assumptions, the property tax equivalent payment for the water and wastewater utilities is $42.4 million compared to the current annual return on equity payment of $42.5 million ($28.75 million for water plus $13.75 for wastewater).

TABLE 19: HYPOTHETICAL PROPERTY TAX CALCULATION
($ Millions)

Item	Water Utility	Wastewater Utility	Total
Gross Book Value of Above Ground Property	1,158,703,460	1,101,166,094	2,259,869,554
Accumulated Depreciation	(285,025,966)	(282,011,069)	(567,037,035)
Net Book Value of Above Ground Property	873,677,494	819,155,025	1,692,832,519
Est. Replacement Cost (2 Times Gross Book Value)	2,317,406,920	2,202,332,188	4,519,739,108
Replacement Cost less Accumulated Depreciation	2,032,380,954	1,920,321,119	3,952,702,073
Current City Non-Residential Property Tax	1.07367%	1.07367%	1.07367%
Hypothetical Property Tax Payment	$21,821,065	$20,617,912	$42,438,976

RFC offers the hypothetical calculation shown in Table 19 to demonstrate that it is entirely feasible to develop a replacement for the current return on equity calculation that, in the opinion of RFC, is much more transparent than the current approach based on the concept of return on equity. Specifically, the assessed value of water and wastewater assets can be estimated using the same methodologies currently used by the City to determine the assessed value of non-residential properties. Once this assessed value has been established, the City can apply the property tax rate appropriate to achieve the level of total transfer payments required from Utilities to achieve its fiscal and public policy objectives.

8.9 GOVERNANCE STRUCTURE COMPARISON

A comparison of the governance structures employed by each of the peer utilities is presented in Table 20. Note that four of the peer utilities (Halifax Water, Denver Water, Louisville Water Company and the San Francisco Public Utilities Commission) are governed in a manner similar to that recommended for UEP. Specifically, they are government-owned utilities governed by independent Boards or Commissions.

TABLE 20: COMPARISON OF PEER UTILITY GOVERNANCE STRUCTURES

Utility	Legal Structure	Utility's Governing Body	Elected/ Appointed	Budget & Rate Approval Authority	Highest Ranking Internal Finance Officer
EPCOR Utilities, Inc.	Independent Corporate	Board of Directors	Appointed by the City of Edmonton	Board of Directors	Chief Financial Officer
Halifax Water	Independent Governmental	Halifax Water Board	Appointed by Halifax Regional Council	Halifax Water Board	Director of Finance and Customer Service
DC Water	Independent Governmental	Board of Directors	Mayor Appoints, DC Council Confirms	Board of Directors	Chief Financial Officer
Denver Water	Independent Governmental	Board of Water Commissioners	Appointed by Mayor	Board of Water Commissioners	Director of Finance
San Francisco PUC	Independent Governmental	Commission	Nominated by the Mayor, Approved by Board of Supervisors	Commission	Chief Financial Officer
Louisville Water Company	Independent Governmental	Board of Water Works	Appointed by the Louisville Metro Mayor	Board of Waterworks approves Budget and Rates	Vice-President, Finance and Treasurer
Philadelphia Water	City Department	City Council	Elected	Water Commissioner Sets Rates	Deputy Commissioner of Finance and Administration
Charlotte Water	City Department	City Council	Elected	Budget & Rates approved by City Council; Advisory Committee reviews and recommends Rate Structure	Utilities Business Manager

8.10 FINANCIAL MANAGEMENT STRUCTURE COMPARISON

All of the peer utilities employ an internal senior finance executive as shown above in Table 20. Even though the job titles for this position may vary (Chief Financial Officer, Director of Finance, etc.), each senior finance executive reports directly to the chief executive of the utility in question. This fully comports with RFC's recommendation that the City establish the position of an internal UEP Director of Finance and Administration position reporting directly to the UEP General Manager. We do want to emphasize, though, that compliance with the City's overall financial policies and procedures must be maintained, and that as a result, the UEP Director of Finance and Administration would work closely with the City's Chief Financial Officer.

SECTION 9: FINANCIAL POLICIES DISCUSSION

9.1 AN OVERVIERW OF UEP/UTILITIES EXISTING FINANCIAL POLICIES

UEP has proactively implemented a number of financial policies that have a direct impact on Utilities' operations. These policies have been designed to insure that UEP can attain the goal contained in the City's 2011 Long-Range Financial Plan for Utilities' to operate as a fully financially self-reliant entity. RFC's perspective on each of the major financial policies implemented by UEP are presented below.

9.2 100% CASH FUNDING OF MAINTENANCE CAPITAL

RFC supports UEP's long-term target of paying for Utilities' maintenance capital (i.e., the renewal of existing assets) via 100% cash funding. The policy of funding maintenance capital expenditures using cash earned from utility rate revenues is a common one followed by many well-managed utilities including at least two members of the peer utility group analyzed by RFC as part of the financial risk assessment (e.g., Denver Water and Charlotte Water).

From a conceptual perspective, maintenance capital does not provide new capacity to serve customer demand growth. Thus, it can be considered an analog of operations and maintenance (O&M) expenses. O&M expenses are not funded by debt, but are 100% cash funded from utility rate revenues.

From a practical standpoint, moving to 100% cash funding for maintenance capital will increase Utilities' borrowing capacity for much needed capacity-related asset additions not funded by off-site levies. It will also better match utility cost recovery with the current UEP ratepayers whose past and current usage has caused the need for maintenance capital expenditures.

9.3 MAXIMUM $2 BILLION DEBT LIMIT

RFC does not support the maintenance of a $2 billion debt limit or any other financial policy that sets a specific level of maximum UEP or Utilities debt. The amount of debt utilized by Utilities should not be based on an arbitrary dollar limit. Instead, it should be based on the achieving an "optimal" capital structure that best balances customer utility bill impacts against the risk of UEP default on its outstanding debt obligations.

Utilities' outstanding debt is currently consolidated with the outstanding debt of other City agencies in order to determine the City's compliance with the maximum debt limitations specified in the Alberta Municipal Government Act. RFC's governance structure recommendation (see Section 10.3) will not change this practice. From a practical perspective, if no actions are taken to modify the off-site levy assessment and recovery process, UEP could exceed the arbitrary $2 billion debt limit as early as 2017. This outcome is appropriate because UEP's capacity to responsibly manage

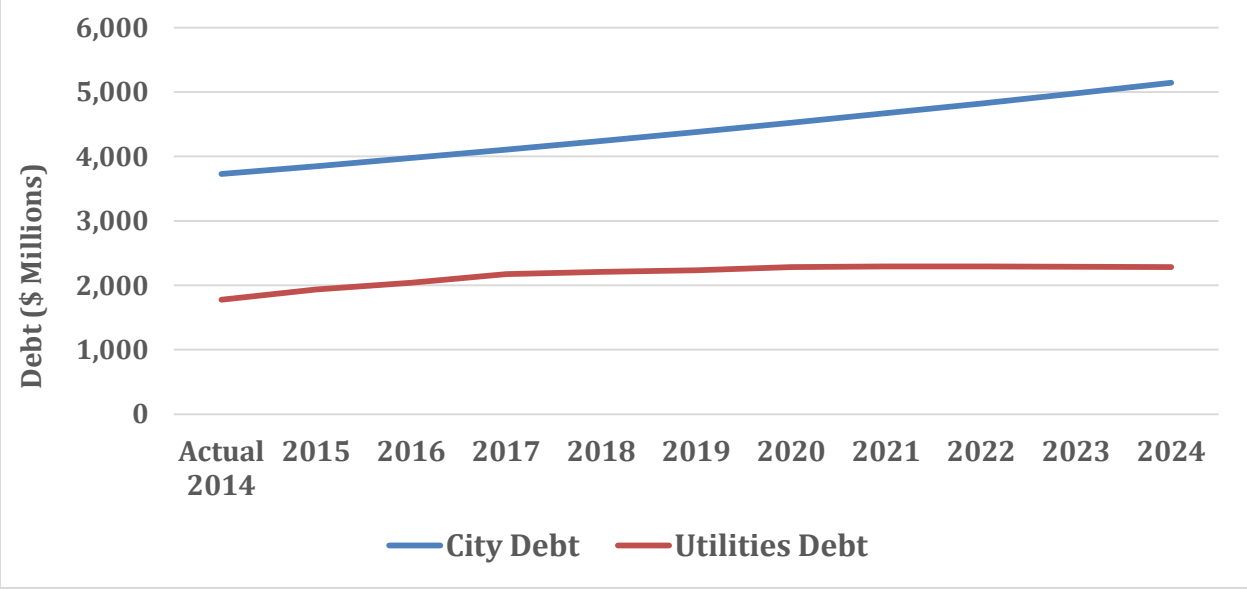
debt in excess of the current $2 billion limit will grow as new customers are added to the system. Similarly, the City of Calgary's debt limit will also grow in the future. Thus, UEP's contribution to overall City of Calgary debt levels should not increase to unsustainable levels in the future.

To test this hypothesis, RFC prepared a forecast of City debt metrics for the ten-year period 2015 – 2024. The forecast, which is presented in Table 21 and Figure 3 below, assumes that City revenues will grow at only 3.3% annually (the actual growth rate during the period 2013 – 2014). This very conservative assumption was used because it reduces the maximum amount of City debt allowable under the Alberta Municipal Government Act. RFC analysis also assumes that actual City debt will remain at 104.7% of total revenues (the actual level in 2014). Added to this consolidated forecast of City debt metrics were projected UEP and Utilities debt levels as obtained from UEP's internal financial planning models. These financial planning models, which were comprehensively reviewed by RFC, are based on the current off-site levy assessment and recovery process before any changes resulting from the City's Build Calgary initiative. As shown in Table 21, based on RFC's analysis, Utilities' contribution to overall debt levels will slightly decline over the next ten years.

TABLE 21: FORECAST OF UTILITIES' CONTRIBUTION TO OVERALL CITY DEBT ($ Millions)

Metric	Actual 2014	Forecast 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
City Debt	3,728	3,850	3,977	4,107	4,241	4,380	4,523	4,671	4,824	4,982	5,145
Utilities Debt	1,779	1,934	2,038	2,173	2,209	2,233	2,284	2,294	2,295	2,290	2,281
Utilities as a % of City Debt	47.72%	50.24%	51.24%	52.92%	52.08%	50.99%	50.49%	49.11%	47.56%	45.97%	44.34%

FIGURE 3: FORECAST OF UTILITIES' CONTRIBUTION TO OVERALL CITY DEBT



9.4 MAXIMUM DEBT SERVICE EQUAL TO 40% OF TOTAL REVENUE

RFC believes the appropriate method to determine a utility's capacity to pay for debt service is through the use of debt service coverage ratios. Debt service coverage ratios reflect the utility's ability to pay debt service after first paying for critical O&M expenses and required transfers to the City. For this reason, RFC recommends that UEP replace the use of debt service coverage ratios in place of the current policy of limiting maximum debt service to 40% of total revenue. As internal financial planning standard, RFC recommends that Utilities' seek to maintain a debt service coverage ratio equal to a *minimum* of 1.75 for the water, wastewater and drainage utilities. For this test, debt service coverage should be calculated per the following formula:

Debt Service Coverage =
(Total Revenues – (O&M Expenses + Payments to the City)) / Total Debt Service

9.5 CAPITAL STRUCTURE OF 60% DEBT AND 40% EQUITY

RFC supports UEP's long-term goal of maintaining a capital structure consisting of 60% debt and 40% equity. While some utilities follow a policy of maintaining a lower level of debt in their capital structure, RFC supports the 60% Debt to 40% Equity mix for the following reasons:

- UEP has adequate revenues to support the level of debt service associated with maintaining a 60%/40% ratio.
- A 60%/40% ratio is fully compliant with Alberta Utilities Commission (AUC) guidance for investor-owned utilities. This metric can also be used as a test or reasonableness for municipal utilities. See AUC Decision No. 2191-D01-2015, in the regulatory docket *2013 Generic Cost of Capital*.
- A 60%/40% ratio reflects a moderate level of debt when viewed through the lens of U.S. credit rating agency criteria such as the ratio of long-term debt to net utility plant.

UEP has a long-term goal of maintain a capital structure consisting of 60% debt and 40% equity. RFC does not explicitly disagree with having a financial policy that defines a long-term target capital structure. However, as discussed in Section 8.8 of this report, there has been a variety of definitions of the term equity used by UEP and the City which yield alterative measurements of the percentage of debt and equity within a utility capital structure. For this reason, RFC recommends that equity be calculated in a manner similar to that used by the AUC for regulated electric and natural gas utilities. The key steps in the AUC equity determination process are as follows:

Step #1: Mid-year utility rate base assets are determined. Rate base assets consist of utility plant in service net of both accumulated depreciation, and contributions in aid of

construction made by developers. For Utilities, developer payments made via the off-site l assessment process would be considered contributions.

Step #2: The mid-year actual utility capital structure is determined. Utility capital structure consists of utility financed short- and long-term debt (i.e., actual borrowings of the utility). The utility capital structure does not include "zero cost capital" associated with developer contributions.

Step #3: The actual mid-year utility capital structure is imputed to reflect a deemed capital structure supporting the regulated rate base assets. In AUC Decision No. 2191-D01-2015, this deemed capital structure consisted of 40% equity and 60% debt. This capital structure is used by the AUC because it allows utilities, when viewed in a standalone basis, to target debt credit ratings in the "A-range." This credit quality is reflective a utility with substantial capacity to pay debt obligations.

The above three-step process would be used by Utilities on an annual basis to calculate its level of equity for the purposes of determining the return on equity transfer payment to the City. The formulas below demonstrate the calculations required to determine equity under RFC's recommended approach:

Mid-Year Utility Plant in Service at Cost
Less: Accumulated Depreciation on Mid-Year Plant-in-Service
Net Plant In-Service

Donated Assets at Cost
Less: Accumulated Depreciation on Mid-Year Donated Assets
Net Donated Assets Plant In-Service

Contributions in Aid of Construction at Cost (Do Not Subtract Out Offsite Levy Receipts)
Less: Accumulated Depreciation on Mid-Year Donated Assets
Contributions in Aid of Construction

Net Plant In Service
Less: Net Donated Assets
Less: Net Contributions in Aid of Construction
Net Rate Base

Net Rate Base
x 40% for Target Capital Structure Equity (in AUC terms this is called "Deemed" Equity)
Utilities Equity

9.6 SUSTAINMENT RESERVES EQUAL TO 10% OF TOTAL REVENUE

As shown in Table 9 in Section 7.4, the existing sustainment reserves maintained by Utilities are far less than the recommended levels established by U.S. credit ratings agencies for utilities with investment grade debt. They are also far below virtually every member of the peer utilities group reviewed by RFC as part of the financial risk assessment (see Table 16 in Section 8.6).

RFC supports Utilities' current financial policy which is to maintain sustainment reserves equal to 10% of total revenue. In 2018, when this policy is fully implemented, it will result in cash reserves equivalent to approximately 120 days of annual operations and maintenance expenditures. However, RFC recommends that in lieu of the policy of maintaining sustainment reserves equity to 10% of total revenues, that Utilities' modify this policy to maintaining sustainment reserves equal to 120 of annual operations and maintenance expenses. As noted Table 9 in Section 7.4, those water and wastewater utilities with cash reserves greater than this level are considered to be of the highest financial strength/lowest financial risk. Maintaining sustainment reserves equal to 120 days of annual operations and maintenance expenditures should be adequate to mitigate the risk of declines in billed water consumption and wastewater discharges caused by fluctuating climatic or economic conditions.

9.7 THE NEED TO CREATE A CAPITAL RESERVE

As discussed in Section 7.11 of this report, a key Utilities financial risk factor is the potential for capital spending in excess of Utilities rate model assumption of 75% of the City Council approved budget. For this reason, in addition to a the sustainment reserve equivalent to 120 days of annual O&M, RFC also recommends the establishment of a capital expenditure cash reserve to mitigate the risk of exceeding the UEP rate model capital expenditure assumption of 75%. RFC recommends that water and wastewater rates for the four-year 2019 – 2022 budget cycle be set at a level that that allows Utilities to achieve a capital expenditure reserve equal to 25% of the average annual capital expenditures forecast for the four-year 2023 – 2026 budget cycle. Table 22 shows RFC's recommended capital reserve calculation using hypothetical forecast capital expenditures for each year in the 2023 – 2026 budget cycle. Note that the calculated capital reserve of $29.2 million is *in addition to* the 10% contingency reserve included in the construction cost estimates of all Utilities' capital projects.

TABLE 22: EXAMPLE CAPITAL RESERVE CALCULATION ($ Millions)

Total Capital Expenditures (i.e., Capital Expenditures Before the Application of the 75% Rate Model Assumption)						Required Reserve at 25% of the Annual Average
2023	2024	2025	2026	Budget Cycle Total	Budget Cycle Average	
$123.6	$135.7	$97.9	$110.3	$467.5	$116.9	$29.2

As the opportunity presents itself in the 2015-2018 budget cycle, a Capital Reserve could be established in advance of the next business cycle.

9.8 DRAINAGE UTILITY RISK ASSESSMENT

The drainage service line provided by Utilities is funded via customer user charges and off-site levy assessments. The City Council adopted annual storm drainage rate increases of 19.1% annually for the four-year 2015 - 2018 budget cycle. The monthly drainage rates paid by customers are applied on a flat-rate basis and do not vary by parcel size. On September 17, 2014 UEP recommended the implementation of an impervious area billing system for the four-year budget cycle beginning in 2019 (See the UEP Report to SPC on Utilities and Corporate Service entitled, "Drainage Cost of Service Study", USC 2014-0612). RFC agrees with this recommendation given that impervious area based rate structures more equitably allocate the cost of drainage service to those customers who create higher volumes of snowmelt and rainfall run-off.

The scope of drainage service line operations is significantly smaller than Utilities' water and wastewater operations. In addition, unlike the water and wastewater utilities, the drainage utility does not make transfer payments to the City in the form of franchise fees or return on equity payments. In 2014, total revenues for the drainage service line were $40.1 million compared to $292.2 million for the water utility and $241.8 million for the wastewater utility. Thus, the drainage service line contributed only approximately 7.0% of consolidated Utilities revenues. Similarly, outstanding drainage debt at the end of 2014 was $148.8 million compared to $821.8 million of the water utility and $772.0 million for the wastewater utility. Thus, drainage service line debt constituted approximately 8.5% of the total outstanding Utilities debt.

Total drainage utility debt service was $12.5 million in 2014 and RFC estimates actual drainage service line debt service coverage in 2014 to be 1.57X debt service. This is equivalent to strong debt service coverage under the Standard & Poor's ratings criteria for water and wastewater utilities as shown in Table 8 of Section 7.3. RFC considers the level of financial risk associated with the drainage service line to be moderate.

Utilities maintains a set of financial policy targets for drainage operations that are fully aligned with the financial policy targets maintained for water and wastewater utility operations. They include:

- 100% cash funding of maintenance capital
- Maximum $300 million debt limit
- Maximum debt service equal to 40% of total revenue
- Sustainment reserves equal to 10% of total revenue

RFC's financial policy recommendations for the drainage service line are similar to those for the water and wastewater utilities. Specifically, RFC:

1. Supports the target of 100% cash funding for maintenance capital.

2. Does not support the imposition of an arbitrary maximum debt limit for the reasons discussed in Section 9.3

3. Recommends replacement the use of debt service coverage ratios in place of the current policy of limiting maximum debt service to 40% of total revenue.

4. Recommends that in lieu of the policy of maintaining sustainment reserves equity to 10% of total revenues, that Utilities' modify this policy to maintaining sustainment reserves equal to 120 of annual operations and maintenance expenses.

5. Recommends that drainage rates for the four-year 2019 – 2022 budget cycle be set at a level that that allows Utilities to achieve a capital expenditure reserve equal to 25% of the average annual capital expenditures forecast for the four-year 2023 – 2026 budget cycle.

SECTION 10: UTILITIES GOVERANCE STRUCTURE

10.1 OVERVIEW OF GOVERNANCE STRUCTURES

Several governance structures were considered in analyzing Utilities' desired future state, including municipal department (UEP's current status), municipal department with an advisory committee, municipal department with an independent governing commission, and a fully independent corporate entity such as ENMAX Corporation or EPCOR Utilities, Inc. Each structure has a number of positive features, as well as some associated drawbacks, and in many cases, those positives and negatives are dependent on which stakeholder group is being considered.

Utilities that are municipal departments are governed by an elected body such as City Council which is ultimately accountable to citizens. For example the UEP General Manager reports to The Calgary City Manager, however, all decisions regarding Utilities budgets and rates are made by the City Council. Because of this link, initiatives within the utility can be tied to public policy, strategic plans, and can align with City goals, such as economic development, sustainability, and service affordability. Elected bodies oversee many lines of business and likely do not have the time to be able to appreciate the complexities and details of each line of service. This may present challenges to Councils when presented with complicated situations where rate increases or capital projects require approval. Municipal utilities typically have some or most of their support services provided by the City, and the City owns the utility assets.

A municipal utility department with a citizens' advisory group operates under the same model, but also has a group of citizens with subject matter expertise (legal, financial, engineering, etc.) or representational views (neighborhood, development, etc.). This group tends to be selected by the governing body, and can serve in an advisory role for both the governing body and the utility leadership. Utilizing a citizens' advisory board can help to ensure more detailed oversight and increased citizen participation, but may require more time for the additional approval step.

A municipal utility department governed by an independent public utility commission (PUC) is much closer to an independent corporatized utility. Under this model, the elected governing body selects members of the PUC (typically 7-9), who then provide complete oversight for the utility. Under this model, the utility general manager reports directly to the PUC. The PUC is responsible for allocating funds provided by the elected body, recommending budgets and rate increase to the elected body. Utilizing a PUC ensures highly detailed oversight and increased understanding of utility issues, but may not foster alignment with City goals and strategic initiatives.

Finally, a municipal utility department can be converted into an independent corporatized utility that is wholly owned by the municipality in question. The two best known examples of this governance model are EPCOR Utilities, Inc. (wholly-owned by the City of Edmonton) and ENMAX

Corporation (wholly-owned by the City of Calgary). Corporatized utilities maintain ownership of the utility assets transferred to them at the time they became independent corporations and do not receive support services from their municipal owners. Due to their investor-owned business model, corporatized utilities focus on maximizing profits for shareholders. Compared to a traditional municipal utility department, this can create more diffuse accountability to citizens and a less clear tie to an overarching public purpose.

The primary benefit associated with the implementation of corporatized governance structure for Utilities is that its outstanding self-supporting debt will not be included the calculation of the City's maximum debt limitation under the Alberta Municipal Government Act. As noted in Section 9.3, RFC estimates that Utilities' contribution to overall City debt levels will slightly decline over the next ten years. Nonetheless, it may be appropriate to consider a corporatized governance model if the City is concerned that Utilities' debt levels will, at some point in the future, cause a "crowding out" effect that makes it more difficult for other City departments to obtain external debt financing at some point in the future.

In theory, the ability to expand into regional and even international markets could allow a corporatized utility to enhance its profits and pay higher dividends to its municipal owner. Unlike a traditional municipal utility department, a corporatized utility is not limited to providing utility services within a single designated service territory. For example, EPCOR Utilities, Inc. offers regional and international energy and water services far beyond the boundaries of the City of Edmonton. RFC does not believe this potential benefit should be given any weight when considering the potential corporatization of Utilities. As noted in Table 17 of Section 8.7, Utilities paid $92.4 million, or fully 17.3% of its revenues to the City in 2014. This is a far larger percentage of revenues than that paid by EPCOR Utilities, Inc. to the City of Edmonton or ENMAX Corporation to the City. RFC believes it highly unlikely that Utilities can significantly increase this level of payments to the City at any point in the near or medium term future even under a under a corporatized governance model and a management focus on aggressive business expansion.

Table 23 provides a comparison of how utilities operating under different governance models cope with commonly experienced risk factors. As noted in Table 23, the risk levels for a municipally-owned corporatized utility are generally similar in nature to other governance models with the exception of higher risks for customer service, customer engagement and the potential for regulatory authority oversight.

TABLE 23: GOVERNANCE STRUCTURES AND ASSOCIATED RISK LEVELS

Risk Factor	Risk Levels for Municipal Department	Risk Levels for a Municipal Department with Advisory Committee	Risk Levels for a Municipal Department Governed by an Independent PUC	Risk Levels for a Municipally-Owned Corporatized Utility
Not Obtaining Sufficient Rate Increases	Higher	Moderate	Lower	Lower
Inability to Obtain External Debt Financing	Similar Risk			
Constrained by Debt Limits	Moderate	Moderate	Moderate	Lower
Amount of Transfers to the City	Utility-Specific			
Challenges of Dealing with Growth	Similar			
Not Obtaining Stakeholder Support	Moderate	Lower	Lower	Higher
Poor Customer Service	Moderate	Lower	Lower	Higher
Responsiveness to Regional Issues	Higher	Higher	Higher	Lower
Lack of Financial Policies	Similar			
Poor Customer Engagement	Moderate	Lower	Lower	Higher
Risk of Political Interference	Higher	Higher	Moderate	Lower
Risk of Political Gridlock	Higher	Higher	Moderate	Lower
Risk of Regulatory Authority Oversight	Lower	Lower	Lower	Higher
Lack of Long-Term Planning Focus	Similar			
Poor Knowledge of Industry	Similar			

10.2 UTILITIES GOVERNANCE STRUCTURE RISK FACTORS

RFC has not identified any specific current *quantifiable* financial risks that will be mitigated by a change in the UEP governance structure. However, RFC's analysis indicates several significant Utilities governance structure risks including:

- The risk that City Council does not understand the complexity of Utilities' financial and operational challenges, especially as it relates to dealing with the financial realities of serving a growing population and changing City Council growth management policies;

- The risk that the UEP General Manager has no PUC to provide wise counsel and assist in strategic decision making regarding the complex financial and operational challenges confronting Utilities;
- The risk that Utilities has no PUC to support Utilities on important issues before City Council. Key among these are requests for rate increase and changes to the off-site levy assessment and recovery process.

10.3 A RECOMMENDATION FOR GOVERNANCE CHANGE

RFC recommends the establishment of an independent PUC to govern Utilities. Note that under such a governance structure, the City Council would: 1) appoint the members serving on the governing board; 2) define the duties and responsibilities of the governing board; and, 3) retain full

control for the approval over future Utilities' Action Plans, including both budgets and rate increases. RFC's governance structure recommendation will not change the current practice of consolidating Utilities' outstanding debt with that of the City in order to determine the City's compliance with the debt limitations specified in the Alberta Municipal Government Act.

10.4 THE BENEFITS OF PUBLIC UTILITY COMMMISSION

The key purpose of any governance change is to assist Utilities in the execution of its complex duty to provide exceptional utility service at a reasonable cost. The benefits of creating an independent PUC, in conjunction with the creation of a UEP Director of Finance and Administration position (discussed in Section 11 of this report) include:

- A reduction in political risk for controversial Utilities items brought before the City Council. Most notable among these are utility rate increases and development growth-related issues such the off-site levy assessment and recovery process.

- Providing decision-making support and counsel to the UEP General Manager and senior staff on complex strategic, operational and financial issues. This will include assistance in the development of strategies to better communicate with customers/stakeholders on key operational, planning, customer service and stakeholder engagement issues.

- Supporting UEP recommendations to City Council regarding budgets, rates, and financial policies, operational changes, etc. The City Council would continue to retain the authority over rate and budget adoption.

RFC supports an independent PUC over the creation of solely an informal citizen's advisory committee, or board, for the following reasons:

- The establishment of an independent PUC will require formal City Council recognition of the Utilities' complex challenges. Such action taken by the City Council will provide a strong public statement regarding the essential nature of the services provided by Utilities.

- The establishment of an independent PUC will create a new identity for UEP as a special/important "quasi-separate" entity within the City's overall corporate structure.

- The establishment of an independent PUC will require members of the commission to throw their full professional and intellectual efforts into understanding and improving UEP's operations. This is an unlikely outcome with a mere citizen's advisory committee.

SECTION 11: UTILITIES FINANCIAL MANAGEMENT STRUCTURE

11.1 CURRENT UEP FINANCIAL MANAGEMENT STRUCTURE

The vast majority of large and sophisticated utilities have a CFO that reports directly to the chief executive officer of the utility in question. UEP currently has a Finance Manager who, as a member of the City CFO's Department, reports to the City Treasurer. The UEP Finance Manager provides business support for both Utilities and other UEP business units. This type of arrangement is uncommon for municipal water and wastewater utilities. As discussed in Section 10 of this report, this is true of all eight peer utilities analyzed by RFC as part of the Financial Review.

The UEP Finance Manager is assisted by a variety of personnel located both inside, and outside, the UEP organization. For example, the UEP Finance Manager is assisted by a member of the CFO's Department with the job title, Senior Finance Lead. At the same time, the UEP Finance Manager is also assisted by individuals within the UEP organization who ultimately report to the Director of Water Resources, not the UEP Finance Manager. In RFC's experience, this model of having decentralized financial personnel distributed through non-finance parts of a utility organization is also uncommon.

11.2 UTILITIES FINANCIAL MANAGEMENT STRUCTURE RISK FACTORS

As noted several times in this report, RFC believes that Utilities level of financial risk is, at worst moderate. This risk assessment notwithstanding, Utilities faces numerous financial risk factors which are summarized in Section 5.1 of this report. Key among these are:

- The potential for large negative variances in forecast aggregate capital expenditures;
- The potential for capital spending in excess of UEP rate model assumption of 75% of the City Council approved budget;
- Overhead capitalization policies that may result in debt financing of operating costs
- Debt financing used for maintenance capital;
- Limited cash reserves to pay for capital cost overruns;
- Inadequate recovery of growth capital via off-site levies;
- Lack of transparency/understandability in UEP financial documents.

11.3 A RECOMMENDATION FOR FINANCIAL MANAGEMENT STRUCTURE CHANGE

RFC strongly recommends the creation of a UEP Director of Finance and Administration position that reports directly to the UEP General Manager. Reporting to Director of Finance and

Administration should be the personnel required to perform the following key financial management functions:

- Accounting;
- Budgeting;
- Rate and Levy Administration;
- Debt Management;
- Economic/Financial Analysis.

11.4 BENEFITS OF A UEP DIRECTOR OF FINANCE AND ADMINISTATION

In conjunction with the creation of a UEP governing commission (discussed in Section 10 of this report), RFC sees a multitude of benefits accruing from the creation of a UEP Director of Finance and Administration position. These benefits include:

- Serving as a counter-balance to the demands of the planning, engineering and operational functions for increased spending. Every utility organization, regardless of size, requires financial leadership that can serve as such a counter-balance. An internal UEP Director of Finance and Administration who resides within the UEP organization and reports to the UEP General Manager can serve this role much more effectively than a UEP Finance Manager who reports to the City Treasurer.

- From RFC's perspective, Utilities' operations are so complex that a fulltime UEP Director of Finance and Administration with control over all key financial management functions is a necessity. Financial activities are currently scattered throughout Utilities and Finance and the consolidation and alignment of financial activities under a UEP Director of Finance and Administration will benefit the financial management of Utilities.

- A UEP Director of Finance and Administration will have greater authority to impose discipline on UEP finances from both a strategic and operational perspective.

- The UEP General Manager requires expert financial management support from within his/her organization when presenting complex financial items before City Council. UEP has traditionally received strong support from the City Council on budgeting and rate issues. A new UEP Director of Finance and Administration should only enhance this support in the future.

SECTION 12: UTILIITIES FINANCIAL RISK RATING

12.1 UTILITIES FINANCIAL RISK RATING

Based on the work performed by RFC as described in Sections 4 – 11 of this report, RFC believes the overall level of financial risk faced by Utilities, is at worst, moderate in nature.

SECTION 13: SUMMARY OF RECOMMENDATIONS

13.1 RFC RECOMMENDATIONS

TABLE 24: SUMMARY OF RFC RECOMMENDATIONS

Recommendation	Description
Priority #1: Financial Management Structure	The position of UEP Director of Finance and Administration should be created (see Section 11.3). This position would reside internally within the UEP organization and report directly to the UEP General Manager. The functions reporting to this new position should include: • Accounting • Budgeting • Rate and Levy Administration • Debt Management • Economic/Financial Analysis
Priority #2: Governance Structure	An independent public utility commission should be established govern Utilities (see Section 10.3).
Priority #3: Financial Policies (Capital Reserve)	Utilities should establish a Capital Reserve similar to the current Sustainment Reserve. The purpose of the Capital Reserve will be mitigate the risk of capital project expenditures in excess of the expenditure assumptions used to set rates in the UEP rate model (see Section 9.7). RFC recommends that water and wastewater rates for the four-year 2019 – 2022 budget cycle be set at a level that that allows Utilities to achieve a capital expenditure reserve equal to 25% of the average annual capital expenditures forecast for the four-year 2023 – 2026 budget cycle.
Priority #4: Financial Policies (Debt Limitation)	Utilities should not continue to set an arbitrary debt limit such as the current self-imposed limit of $2 billion (see Section 9.3). RFC believes the appropriate way to determine the reasonableness of Utilities' total debt burden is through the use of debt service coverage ratios. As internal financial planning standard, RFC recommends that Utilities' seek to maintain a debt service coverage ratio equal to a *minimum* of 1.75 for the water, wastewater and drainage utilities (see Section 9.4).
Priority #5: Sustainment Reserve Policy	Utilities should substitute the financial policy of maintaining a sustainment reserve equal to 10% of total revenues to a sustainment reserve equal to 120 days of annual operations and maintenance expenditures. Note that by 2018, Utilities will meet the criteria of having a sustainment reserve equal to 120 days of annual O&M expenses (see Section 9.6).

Recommendation	Description
Priority #6: Return on Equity Calculation	Utilities should eliminate the return on equity transfer payment made to the City. In its place, utilities should make a transfer payment to the City based on the calculation of municipal property taxes on Utilities' above ground assets (see Section 8.8).
Priority #7: Financial Statements	UEP should produce annual fully auditable annual financial statements for the water, wastewater, drainage and reclaimed water utilities *as if they were fully self-supporting standalone entities.* These financial statements would be prepared under Canadian Public Sector Accounting Standards (see Section 12.6).
Priority #8: Other Financial Policies	Utilities should continue moving toward the long-term goal of 100% cash funding for maintenance capital (see Section 9.2). Utilities should substitute the use of debt service coverage ratios for its current target of having the maximum level of debt service equivalent to 40% of total revenues (see Section 9.4). Utilities should continue moving toward the long-term goal of maintaining a capital structure composed of 60% debt and 40% equity (see Section 9.5).
Priority #9: Water and Wastewater Utility Pro Forma Financial Projections	The final report made to City Council regarding this financial risk assessment should include a comprehensive set of water and wastewater pro form financial projections reflective of: 1) the final modifications made to the off-site levy assessment and recovery process determined as part of the Build Calgary initiative; and, 2) the recommendations made by RFC in this report.

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