THE CORPORATION OF THE

CITY OF WHITE ROCK
CLOSED CORPORATE REPORT

DATE: **June 10, 2013**

TO: **Mayor and Council**

FROM: **Dan Bottrill, Chief Administrative Officer**
Sandra Kurylo, Director of Financial Services
Greg St. Louis, Director of Engineering and Operations

SUBJECT: **Acquisition of EPCOR White Rock Water Inc.**

RECOMMENDATION

THAT Council:

1) Receive for information the June 10, 2013 closed corporate report from the Chief Administrative Officer, Director of Financial Services, and Director of Engineering and Operations titled "Acquisition of EPCOR White Rock Water Inc.;"

2) Authorize staff, in accordance with the Agreement made September 29, 1922 between the Corporation of the District of Surrey and White Rock Water Works Company Limited, and their successor organizations, to:

    a) provide notice to EPCOR White Rock Water Inc. of the City's intention to exercise its option to assume ownership of EPCOR's water utility works and all associated licenses and real and personal property in respect of the water utility service which provides water to the City of White Rock, which ownership would enable the City to provide water service to the residents of White Rock;

    b) commence negotiations with EPCOR to acquire this property; and

    c) report to and obtain approval from City of White Rock Council before completing the purchase; and

3) Authorize release of this decision at the next Regular Council meeting.

INTRODUCTION

The following resolution was adopted at the February 25, 2013 Closed Council meeting:

> "Council approved staff to proceed with the preparation of a business case for the purpose of determining whether or not the City of White Rock should enter formal negotiations to purchase the water utility from EPCOR."

BACKGROUND

Water services for the City of White Rock have been provided by a private operator since prior to the incorporation of the municipality. The source of White Rock's water supply is groundwater obtained from six wells drilled into the Sunnyside Uplands Aquifer. Fraser Health issued an Order to EPCOR White Rock Water Inc. (EWR) stipulating that "On or before March 31, 2016, the drinking water that you provide must be chlorinated with a minimal residual of 0.2 mg/L of chlorine detected at the furthest points in the distribution system."

EWR determined that the best course of action to comply with the Order was to continue to use water from the Sunnyside Uplands Aquifer, construct a chlorination plant to treat the water, and also upgrade the current infrastructure. This capital program is known as the Total Water Quality Management project (TWQM) and is the subject of a current application with the Comptroller of Water Rights for British Columbia to seek approval to proceed with the project and to recover the costs associated with the project through future water rates.

ANALYSIS

The TWQM project is a significant capital project with an estimated cost of $11.5 million. Attached to this corporate report is a business case analysis regarding the acquisition of EPCOR White Rock Water Inc. The two objectives of the business case are to:

1) Review water supply options to the City of White Rock; and
2) Determine the merits of acquiring the water utility from EWR.

The conclusion of the business case is that the water supply option to continue to use the Sunnyside Uplands Aquifer is the best option. This is due primarily to the additional financial costs associated with the option to use Metro Vancouver water. The business case also concludes that it would be in the best interest of the water users in White Rock that the City pursues the acquisition of the water utility from EWR.

BUDGET IMPLICATIONS

The decision to acquire the water utility from EWR would have a significant financial impact on the City. The City would need to expend approximately $15 million (or more) to purchase the water utility from EWR. A further $11.5 million would be required to address the chlorination issue and immediate infrastructure upgrades identified by EWR. It is also assumed that the City would also be addressing the arsenic levels in the Sunnyside Uplands Aquifer in the near future. The arsenic filtration project has a cost estimate of $9.5 million. The City would be required to borrow funds from the Municipal Finance Authority in order to finance these capital costs.

In addition to the capital costs identified above, the city would be responsible for the operating costs of the water utility as well as the billing and collection of water user fees. The development cost charge (DCC) program would also need to be expanded to incorporate water utility DCC charges for new development.

RISK IMPLICATIONS

If the City acquires the water utility from EWR, it will assume all risks associated with the operation including water quality. The City would be responsible for infrastructure replacement and improvements to the water system. It is also very difficult to ascertain the condition of the existing water infrastructure.

NEXT STEPS

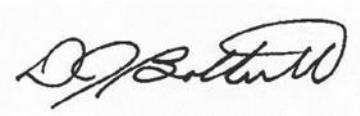
Assuming Council approves the recommendation to acquire the water utility from EWR and is supportive of constructing a chlorination treatment plant, the next steps would be:

1) Provide notice to EPCOR White Rock Water Inc. (EWR) of the City's intention to exercise its option to assume ownership of EPCOR's water utility works and all associated licenses and real and personal property in respect of the water utility service;
2) Complete a final submission to the Comptroller of Water Rights for British Columbia, in our capacity as Intervener to the application process, outlining Council's intention to purchase the water utility from EWR and that the City is supportive, in principle, with the Total Water Quality Management (TWQM) project; and
3) Commence negotiations with EPCOR.

CONCLUSION

The business case attached to this corporate report outlines the financial as well as non-financial considerations of water supply and the merits of acquiring the water utility from EWR. Based on the conclusions of the business case, it is recommended that the City support the continued use of the Sunnyside Uplands Aquifer due primarily to the additional financial costs associated with the option to use Metro Vancouver water. It is further recommended that it would be in the best interest of the water users in White Rock that the City pursues the acquisition of the water utility from EWR.

Respectfully submitted,



Dan Bottrill,
Chief Administrative Officer

Sandra Kurylo,
Director of Financial Services

Greg St. Louis,
Director of Engineering & Operations

Appendix A: Business Case – Acquisition of EPCOR White Rock Water Inc. dated June 10, 2013

APPENDIX A

City of White Rock

BUSINESS CASE

Acquisition of EPCOR White Rock Water Inc.

June 10, 2013

Prepared By:
Dan Bottrill, Chief Administrative Officer
Sandra Kurylo, Director of Financial Services
Greg St. Louis, Director of Engineering and Operations

City of White Rock

Business Case – Acquisition of EPCOR White Rock Water Inc.

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OBJECTIVES

The first objective of this business case is to review water supply options to the City of White Rock. There are essentially two options available:

1. Continue to use the Sunnyside Uplands aquifer and proceed with the Total Water Quality Management (TWQM) project as outlined by EPCOR White Rock Water Inc. (EWR), a subsidiary of EPCOR; or
2. Join the Greater Vancouver Water District and receive water supply from Metro Vancouver.

The second objective is to determine the merits of acquiring the water utility from EWR. It is acknowledged that the timing of the acquisition is due in large part to the significant investment in capital works that EWR is planning to undertake as a result of an Order from Fraser Health to chlorinate the system, system expansion to address current and forecasted demand on the water system, and to replace aging infrastructure.

BACKGROUND

Water services for The City of White Rock have been provided by a private operator since prior to the incorporation of the municipality. In 1922, the District of Surrey ("the Corporation") entered into an agreement (attached as Appendix 1) with White Rock Waterworks Company Limited ("the Company"):

> "… to supply White Rock and the neighborhood thereof with water and to carry on the business of a Water Works Company in all its branches, to sink wells and shafts and move, build and construct, lay down and maintain reservoirs, water works, cisterns, culverts, filter beds, mains and other pipes and appliances, to execute and do all other works and things necessary or convenient for obtaining, storing , selling, delivering, measuring, and distributing water or otherwise for the purpose of the Company.

The agreement provides that:

> "The Corporation … grants unto the Company the privilege to maintain and continue to operate its present water works system and also to lay down, relay, connect, disconnect, repair and maintain all mains and other pipes through and under the streets, avenues, alleys, highways, bridges, and thoroughfares of that portion of the said Municipality of Surrey known as White Rock and the neighborhood thereof …"

The agreement further provides that:

> "The rights, powers and privileges hereinbefore granted shall continue for a period of twenty (20) years from the final passage of the By-law authorizing this Agreement, provided that at the expiration of ten (10) years from the said final passage of the said By-law the Corporation may after giving six (6) months written notice prior to the expiration of such term of its intention so to do assume ownership of the Company's franchise, water works, plant, mains, pipes and fittings, licenses and real and personal property in connection with the working thereof, upon payment of their value to be mutually agreed upon or to be determined by arbitration under the provisions of the act concerning arbitration now in force in

British Columbia, and in case the Corporation shall fail in exercising the right of such ownership at the expiration of said term of ten (10) years the Corporation may thereafter exercise the same right of assuming such ownership after six months' written notice to be given prior to the expiration of any year after the aforesaid ten (10) years and upon payment of the value as determined by arbitration as aforesaid. And provided that in case the Corporation shall fail to assume ownership of the Company's said undertakings within the period of twenty (20) years from the final passage of the said By-law the Company shall be entitled to a renewal of this agreement for further and other term or terms of ten (10) years until the Corporation shall assume ownership of the Company's undertakings as hereinbefore mentioned."

EPCOR White Rock Water Inc. (EWR), a subsidiary of EPCOR, purchased the water utility on May 1, 2005 from White Rock Utilities. EPCOR, according to their website builds, own and operates electrical transmission and distribution networks, water and wastewater treatment facilities and infrastructure in Canada and the United States. EPCOR is headquartered in Edmonton, Alberta. They are governed by an independent Board of Directors. The sole shareholder is the City of Edmonton. In 2011 EPCOR reported total revenue of $1.8 billion, net income of $144 million, and paid a dividend of $138 million to their sole shareholder, City of Edmonton.

WATER QUALITY

The water supply for White Rock is obtained from the Sunnyside Uplands aquifer. On August 19, 2010 EWR's routine testing of the water distribution system detected the presence of e.coli in the system. A Boil Water Advisory was issued by Fraser Health. A temporary chlorination system was installed at Merklin Well No. 6, the source of the contamination to provide a level of residual disinfectant to only part of the system. The disinfectant of Well No. 6 continues to operate however it is a temporary solution as it does not address microbial risk in the entire system.

Arsenic

Levels of arsenic in White Rock's current water supply are just at or below the maximum acceptable concentration defined in the Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ) of 0.010 mg/L. In discussion with Fraser Health, these guidelines are based upon health considerations as well as the economic and technical feasibility of treatment. The maximum allowable concentration for arsenic minimizes health effects while not placing undue burden upon water suppliers. The arsenic concentration has historically been the highest levels from Well No. 5 and Well No. 6. In 2006-2008, the arsenic concentration was at, or slightly above GCDWQ maximum acceptable concentration in the two wells. Attached, as Appendix 2, is EPCOR Annual Performance Data 2007-2012 (Arsenic) taken from EWR website. The data indicates that maximum levels in 2012 were at 0.010 mg/L which is the maximum acceptable level. Although it can be argued that arsenic levels have been somewhat stable over the past six years, the data indicates a recent upward trend in average arsenic levels. In any case, it is reasonable to anticipate that the White Rock Water supply will require treatment for arsenic at some point in the future. Fraser Health is currently looking into a concern by a resident of White Rock

regarding potentially high body burdens of arsenic. Confirmation of this concern could serve to alter the timelines for requiring arsenic removal.

Manganese

The Health Canada Guideline for Canadian Drinking Water Quality for manganese is an aesthetic objective of less than or equal to 0.050 mg/L. Levels of manganese above this level are currently not considered a health risk. Levels above this guideline may cause staining or have an unpleasant appearance or taste. The World Health Organization health-based guideline is 0.400 mg/L, which is believed to be adequate to protect public health. The manganese concentration also varies with the well source and has been the highest in water from Wells No. 3 and No. 4. Attached, as Appendix 3, is EPCOR Annual Performance Data 2007-2012 (Manganese) taken from EWR website. The average levels of manganese have recently been higher than the aesthetic objective but less than the health-based reference of 0.400 mg/L.

Fraser Health Order

Fraser Health issued an Order to EWR that:

> "On or before March 31, 2016, the drinking water that you provide must be chlorinated with a minimal residual of 0.2 mg/L of chlorine detected at the furthest points in the distribution system. As an interim measure, chlorination at well # 6 is to continue until the above works have been completed in 2016. Should arsenic levels trend above the Guidelines for Canadian Drinking Water Quality, a treatment system must be operational on or before December 31, 2018. Should the Guidelines for Canadian Drinking Water Quality deem manganese a health criteria, a treatment system must be operational on or before December 31, 2018."

EWR has made an application to the Comptroller of Water Rights for British Columbia for a major project. Total Water Quality Management (TWQM) project will treat the water supply and upgrade critical system infrastructure in order to meet the conditions of the Order issued by Fraser Health.

OVERVIEW OF EPCOR WHITE ROCK WATER INC. SYSTEM

A schematic of the water distribution system is illustrated in Appendix 4. EWR supplies drinking water to approximately 6,500 dwelling units in White Rock, 89 services in Surrey and 240 residents of Semiahmoo First Nations. All services are metered.
Currently, the water system is supplied by six wells, providing average day demand (ADD) of approximately 85 L/s and a maximum day demand (MDD) of 162 L/s. According to the 2010 Water System Master Plan Update, the future water supply will need to provide a capacity of 180 L/s for the MDD. Storage and pumping upgrades are required to meet this demand. These infrastructure improvements are planned to be addressed as part of the TQWM project proposed by EWR.

The water service area is divided into two pressure zones; the high pressure zone and the low pressure zone. The high zone is supplied by the Oxford Wells (No. 1, 2 and 3), High Street Well No. 4 and the Merklin Well No. 6. The low zone is supplied by the Buena Vista Well No. 5.

The Merklin Low Reservoir, Merklin Tower Reservoir and the Merklin Well are located adjacent to one another in the high zone. The Merklin Low Reservoir provides balancing storage to the high zone via the booster pumps and fire storage for the entire system. The Merlin Tower Reservoir provides balancing storage and maintains pressure within the high zone.

The Roper Reservoir located in the low zone provides balancing storage and maintains pressures within the Low Zone.

REQUIRED INVESTMENT IN INFRASTRUCTURE

Outside any decision to treat the water in White Rock, the water system requires significant infrastructure upgrades at Merklin Street, Oxford Street and High Street. Replacement of aging infrastructure is necessary in order to address reliability and safety issues; and increase storage to meet forecast peak demand, requirements for balancing fire flow storage, emergency storage and system expansion as recommended in EWR's 2010 Master Plan. EWR has provided a cost estimate of $7.5 million to perform the identified high priority items listed below:

- Merklin Street Site Upgrades – Merklin Street site upgrade requires the demolition of the structurally deficient Merklin high reservoir, followed by the addition of a new 1.55ML reservoir, a booster pump station and standby generator in the location of the existing Merklin high reservoir. Distribution system upgrades are also required to tie the new infrastructure into the system at the Merkin Street site and all of these facilities will be connected into EWR's central Supervisory Control Data Acquisition (SCADA) system for alarming and monitoring of major process components.
- Oxford Street Site Upgrades – Oxford Street site upgrades include the addition of a new 1.73ML reservoir, a booster pump station and a standby generator. Distribution system upgrades are also required to tie the new infrastructure into the system at the Oxford Street site and all of these facilities will be connected into EWR's central Supervisory Control Data Acquisition (SCADA) system for alarming and monitoring of major process components.
- High Street Site Upgrades – High Street site upgrades include a small control room that will contain the electrical configuration required to improve the safety and energy efficiency of the pump controls.

WATER SUPPLY OPTIONS

City staff reviewed EPCOR's application to the Comptroller of Water Rights for British Columbia. In addition staff met with Metro Vancouver and City of Surrey staff to review the available options to service the City of White Rock. Due to the time frame to complete this report, City of White Rock staff has not been able to conduct an analysis of the accuracy of the estimates provided by EWR, Metro Vancouver, or the City of Surrey. For purposes of financial analysis, provided further in this report, the estimates have been considered

reasonable. The following options were investigated:

1. Continue with TWQM to provide chlorination and possible arsenic and manganese removal;
2. Water supplied by Metro Vancouver (Greater Vancouver Water District); and
3. Water Supplied by City of Surrey.

1. Total Water Quality Management

According to EPCOR, the TWQM project will treat the water supply and upgrade critical system infrastructure ensuring consistent and reliable service of high-quality drinking water. EPCOR has estimated the capital cost to provide chlorination and infrastructure upgrades at $11.5 million. EPCOR is proposing to build chlorination facilities at the Merklin Street, Oxford Street and High Street locations. The project will be completed by March 31, 2016 in order to comply with Order by Fraser Health. EPCOR will continue to monitor the arsenic and manganese trends and if required will treat the water on or before December 31, 2018. EPCOR has estimated the capital cost to provide arsenic and manganese treatment at $9.5 million.

2. Water Supplied by Greater Vancouver Water District (GVWD)

Capital Costs

Staff met with GVWD staff and requested information about the possibility of the City of White Rock becoming a member of GVWD, the technical feasibility of connecting to the GVWD system and the associated costs. On May 2nd, 2013 at a Closed meeting of GVWD Utilities Committee, GVWD staff presented a report on the technical feasibility and estimated cost to the City of White Rock. The following information was taken from that report.

The GVWD Sunnyside Reservoir in South Surrey is the closest tie-in point to the City of White Rock. This is located at 14600 20th Avenue, Surrey in the South Surrey Athletic Park. City of White Rock staff were advised by EWR that two connection points to the local system are required; the area of the Oxford Wells and the Merkin High Tower. This was supported by the September 2011 Design Report by Stantec and the December 2010 Water System Master Plan by Kerr Wood Leidel.

Connecting the White Rock Water Utility System to the GVWD Sunnyside Reservoir would require the following:

- A pump station adjacent to Sunnyside Reservoir to boost the pressure of the water being sent to the White Rock area;
- Approximately 1.5 km of water main from the Sunnyside Reservoir to the intersection of 148th Street and North Bluff Road. From this point the water main would split with one water main going south to the Oxford Well area and one water main going east to the Merklin Reservoir;
- The length of water main connecting to the White Rock Water System in the area of the Oxford Wells would be approximately 0.4 km; and

- The length of water main connecting to the Merklin Reservoir on the White Rock Water System would be approximately 1.2 km.

The estimated capital cost of the above facilities is $12 million, including contingency. Of the $12 million, $2 million has been included for the possible purchase of land from Surrey for the proposed City of White Rock pump station. If the GVWD Board were to approve these connection facilities as a priority project, GVWD staff advise that it is estimated to take three to four years after GVWD Board approval before the facilities would be operational. The limiting factor in completing this connection would be the procurement of land and the design and construction of the pump station. All of these connection costs would be invoiced to the City of White Rock, as the project is completed, over a 3 to 4 year timeframe. In the future, the City of White Rock may want to pay to twin some or all of these connection facilities to increase system resiliency and operation flexibility.

Cost Allocation to White Rock for Flow Increases Upstream of Sunnyside Reservoir

If the City of White Rock is connected to the GVWD Sunnyside Reservoir it will place additional demands on the GVWD facilities located upstream of Sunnyside Reservoir. The GVWD water transmission system in the South Surrey area is stressed in the peak demand periods of very hot summers. This area is geographically far from the source lakes and is experiencing rapid population growth. Consequently, there are already a number of facilities in the GVWD 10-year Capital Plan to increase water transmission to the South Surrey area.

In the past, new GVWD members have typically paid the incremental upstream costs on a flow-weighted basis. Table 1 lists the planned GVWD facilities upstream of Sunnyside Reservoir, the facility timeframe, the City of White Rock's incremental increase in the design flow, and the corresponding incremental cost to White Rock. For the purpose of developing a business case, the City of White Rock can assume that any incremental costs of GVWD facilities would be invoiced to White Rock on a proportional basis during the facility timeframe outlined in Table 1.

Table 1 - Planned GVWD Facilities Upstream of Sunnyside Reservoir and Incremental Cost

Facility	Facility Timeframe	City of White Rock's Incremental Flow (%)	Incremental Cost to White Rock
Annacis Main No. 5 (North)	2014-2021	5.0	$1,000,000
Annacis Main No. 5 (South)	2014-2021	5.0	$1,100,000
Kennedy Newton Main	2013-2022	9.4	$5,300,000
Newton Pumping Upgrades (preliminary Estimates prepared for this report)	2014-2020	18	$5,700,000
Total of All Facilities	2013-2022	N/A	$13,100,000

As illustrated in the above table, the timeframe for the estimated incremental $13.1 million would be required over a ten year period.

The Commodity Cost of Water from GVWD

During the spring of 2011, EWR requested information from GVWD staff about the possibility for GVWD to sell water to EWR for distribution to White Rock. EWR was advised of the non-member rate which includes a 20% surcharge on the GVWD member rate. If the City of White Rock became a member the water rates (2013) would be:

- $0.6880 per cubic meter for peak season June to September
- $0.5504 per cubic meter for off peak
- $0.6054 per cubic meter blended rate

This report used the blended rate for all calculations. These rates are what GVWD would charge the City of White Rock for the water supply. Note that the end user, or water utility customer, would have to pay additional fees to cover the cost incurred by the City of White Rock to operate and maintain the White Rock water system, including the proposed new pump station at Sunnyside Reservoir and the proposed additional distribution water main to the system. At an estimated volume of 2.6 million cubic metres of water, the commodity cost of water from GVWD is estimated at $1.6 million.

3. Water Supplied through the City of Surrey

Currently, there are six emergency tie-in points along North Bluff Road, Stayte Road and Bergstrom Road between the EWR water distribution system and the City of Surrey water system. To date the tie-in point valves have not been used. Preliminary investigation suggests these points are not suitable to be used to distribute Surrey water permanently to the White Rock water distribution system as the EWR water distribution system is designed to flow from the Oxford wells and Merklin reservoirs.

An alternative option is to utilize the City of Surrey's pump station and construct a new water main to White Rock similar to the GVWD option. The City of Surrey is supplied drinking water by GVWD at the member rates noted previously. The City of Surrey has a pump station at the Sunnyside Reservoir. This pump station requires upgrading to keep up with future development. In addition, the water main down 146th Street also requires upgrading for future development. If this option was pursued, both cities would benefit from the upgrade of infrastructure and share the costs.

Capital Costs

The City of Surrey has provided an estimated incremental cost to the City of White Rock of $3 to $6 million to increase the size of the current pump station at Sunnyside reservoir. This would eliminate the need for White Rock to build an additional pump station. A new water main would be sized to accommodate Surrey and White Rock's demand and go south on 146th street from the Surrey pump station to North Bluff Road and into the Merklin and Oxford Reservoirs. The water main work was estimated at $10 million by Surrey. The result is a total estimated construction cost to the City of White Rock of $13 to $16 million. The estimated cost of $13 to $16 million provided by Surrey is similar to the previous option of $13.1 million provided by GVRD. It is unclear at this time which estimated cost is more in line; GVRD or the City of Surrey. Staff was not provided any backup information to support either figure. However, intuitively it would seem more reasonable to assume that cost sharing with the City of Surrey to upgrade existing infrastructure would be a less

costly option than constructing a separate pump station and water main. For financial analysis purposes, we will assume the costs are the same at $13.1 million.

Surrey is the Operator of the System

Surrey has advised that should White Rock decide to pursue this option, then Surrey would require that it operate and maintain the White Rock water distribution system. The rationale from Surrey is that Surrey could not control the operating costs of their pump station if the White Rock water distribution network is not maintained by Surrey. If the White Rock water distribution network is not well maintained and leaking Surrey's pump station would run continuously adding cost to Surrey. The counter argument to the Surrey rationale is that meters could be used to calculate the volume of water to both White Rock and Surrey in order to allocate operating costs of the pump station and water main system jointly used by both parties.

Cost Allocation to White Rock for Flow Increases Upstream of Sunnyside Reservoir

It is reasonable to assume that the proportional flow increase would be similar to the projections provided by GVWD. The City of Surrey may however, add some administrative fee on top of GVWD's cost allocation.

Summary of Capital Costs for Water Supply Options

The following table provides a summary of the capital costs for each of the above options. For the TWQM option, the $11.5 million cost has been split between the cost of chlorination ($4 million) and the cost required to upgrade the existing water distribution system ($7.5 million) such as the Merklin Reservoir upgrade. The TWQM option also includes $9.5 million to resolve arsenic levels in order to ensure each option results in similar water quality.

Table 2 – Summary of Capital Costs for Water Supply Options

	Time Frame	TWQM	Metro Vancouver	MV with Surrey
Chlorination	2014-2016	$ 4,000,000		
White Rock Upgrades	2014-2016	$ 7,500,000	$ 7,500,000	$ 7,500,000
Arsenic	2017-2018	$ 9,500,000		
Pump Station and Mains	2016		$ 12,000,000	$ 12,000,000
Upstream Upgrades from Sunnyside Reservoir	2016-2026		$ 13,100,000	$ 13,100,000
Total		$ 21,000,000	$ 32,600,000	$ 32,600,000

Operating Cost Implications for Water Supply Options

The commodity cost of water from Metro Vancouver is approximately $1.6 million whereas the cost of water from the aquifer is simply pumping cost and treatment. For financial analysis purposes, it is assumed that the operating costs to pump from the aquifer under the TWQM option would be similar to the pump station costs associated with the other two options. Therefore, the only other cost that has not been accounted for is treatment under the TWQM option. At this time, this cost has not been factored into the operating cost

analysis discussed later in this report. However, it is believed that such costs would not be significant and would not be a factor in the water supply decision.

WATER SUPPLY – NON-FINANCIAL CONSIDERATIONS

Assuming the City acquires the water utility assets from EWR such that it controls the water supply issue, it is recognized that irrespective of the source of treated water supply, the White Rock system still requires significant infrastructure upgrades at the Merklin Street, Oxford Street and High Street sites. These high priority improvements are estimated to cost $7.5 million.

Sunnyside Uplands Aquifer

Advantages:

- City has full control over all aspects of water supply operations and rate structure;
- The commodity cost of the water over its lifetime is relatively free aside from pumping and treatment costs; and
- Operations staffing level would most likely remain the same.

Disadvantages:

- City is solely responsible for the water quality delivered from the aquifer.

Greater Vancouver Water District (GVWD)

Advantages:

- No further treatment of water is required; and
- GVWD solely responsible for water quality to White Rock border.

Disadvantages:

- City has little or no control over the cost of water supplied by GVWD;
- GVWD could pose stricter water restrictions due to supply concerns;
- Change in water supply may not translate to reduction in operating staff levels;
- Operations staff to operate new pump station; and
- City would need to purchase land from Surrey for the pump station. Land is at a premium in the area due to the urban forest.

Water Supplied through the City of Surrey

Advantages:

- No further treatment of water is required;
- GVWD solely responsible for water quality to Surrey; and
- City of Surrey would be responsible for complete operation of the water system.

Disadvantages:

- No control over the cost of water supplied by Surrey/GVWD;
- Surrey/GVWD could pose stricter restrictions due to supply concerns; and
- City of Surrey would maintain White Rock distribution system and could charge a premium for this service.

Conclusion – Water Supply

Discussions with staff from both GVRD and Surrey indicate clearly that the capital cost associated with upgrades to the water system to receive water supply from Metro

Vancouver would be significantly more than the TWQM program outlined by EWR. From a financial perspective, as well as taking into account the other considerations outlined above, the capital program associated with the TWQM project should proceed as the preferred option.

ACQUISITION OF EWR – FINANCIAL IMPLICATIONS

Estimated Value of EWR

The current value of EWR has not been determined. EWR advised that it purchased the shares of the previous water utility company in 2005 for $9.5 million. For purposes of the financial analysis to determine the merits of acquiring water assets from EWR, it is estimated that the current value of the water system assets (net of any surplus lands not required for future operations) is $15 million.

Borrowing Capacity of City of White Rock

In accordance with the *Community Charter*, the City of White Rock, as of December 31, 2012, has total borrowing power of $88 million. Borrowing power is based on revenues. The borrowing power would increase once White Rock owned the water utility as the City would then be imposing its own water fees and receiving the associated revenues derived from operating the water utility.

The City is able to borrow without the consent of the elector for an amount of $17.7 million, as of December 31, 2012. The "assent free" borrowing level also would increase with additional revenue. If the City of White Rock acquired the water utility from EWR, the "assent free" borrowing level is estimated to be $19.1 million.

Debt that would exceed the "assent free" borrowing level can be achieved either through a referendum or a counter petition.

Cost of Capital

As a private water utility operating in British Columbia, EWR is entitled, in accordance with regulations under the Water Utility Act, to a return on equity. The City of White Rock, as one of the Interveners to the current TWQM project application process, has been advised that EWR would expect to be able to continue to receive the current 10.8% return on equity. EWR also has internal loans, presumably from the parent company EPCOR, with a current interest rate of 5.85%. EWR is using a weighted cost of capital (average interest rate) of 7.83%. This weighted cost of capital is based on 60% at 5.85% (internal borrowing) and 40% at 10.8% (return on equity).

The City of White Rock is able to obtain long term debt from the Municipal Finance Authority (MFA) at rates that continue to be well below that of the private sector. Each year the MFA is reviewed by the three major credit rating agencies (Moody's Investor Services, Standard & Poor's, and Fitch Ratings) and each year has continued to earn a triple A credit rating. MFA provides ten year loans. In the case of a loan that exceeds ten years, the lending rate is reset at the end of the ten years at whatever lending rate is available at that time.

It should be noted that proceeds from MFA on a loan is 98.4% of the gross amount as 1% is deducted for security against the loan (held in trust by MFA to be refunded at loan expiry)

and a further 0.6% as debt issue expenses.

We are currently enjoying historically low interest rates as illustrated by the MFA historical interest rate table in Appendix 3. At the time of writing this report, the estimated loan rate for ten year debt is 3.18%. For financial analysis purposes, we are using an interest rate of 4.5% which should be viewed as conservative estimate.

Estimated Operating Expense Savings

EWR currently has expenditures that the City of White Rock could avoid or mitigate if the City acquired the water utility. The following table illustrates the estimated savings in operating expenditures should the City of White Rock acquire the water utility from EWR.

Table 3 – Summary of Estimated Operating Expense Savings (acquisition of EWR)

Expense Type	Amount	Explanation
Interest on Loans	$ 169,470	Replaced by WR debt costs
Rate of Return on Equity	$ 208,988	Profit at 10.8% ROE
Income Tax	$ 64,289	Not Applicable
Property Taxes	$ 84,800	Portion of taxes external to WR
Total	$ 527,547	

Support Services

EWR currently has support service costs of $337,316 that are received from EPCOR, the parent company. For purposes of financial analysis, it is assumed that many of the support services could be delivered by the City of White Rock with existing staff resources such as Engineering and Operations, Finance, Human Resources, and Administration. However, it is also envisioned that additional resources will be required should the City take on the responsibilities of operating the water utility. For example, an additional exempt manager may be required in Engineering and Operations with responsibilities to oversee operations. An additional exempt manager may also be required in Finance to oversee the bimonthly meter readings and associated billing and collection of water utility revenue. There may also be additional costs with the Information Technology department. For these reasons, existing support service costs have not been reduced from their existing levels. For purpose of financial analysis, annual office space rent of $49,100 has also not been reduced.

Adjusted Revenues and Expenses

Attached, as Appendix 4, is a table with adjusted revenues and expenses as described above for the following scenarios:

Scenario A: EWR proceeds with TWQM project as well as arsenic filtration;
Scenario B: City acquires EWR, proceeds with TWQM and arsenic filtration; and
Scenario C: City acquires EWR, with water supply from Metro Vancouver.

Annual Debt Servicing Costs

The debt servicing costs in Appendix 4 assumes that EWR would borrow $21 million at an average interest rate of 7.83%; the City would need to borrow $37 million at 4.5% if we continued to use the Sunnyside Uplands aquifer; or $39.6 million at 4.5% if we wished to use Metro Vancouver water. The Metro Vancouver scenario limits the capital investment for years up to 2018 meaning that only $3,930,000 of the $13,100,000 is recognized for

annual debt servicing purposes (as the other two scenarios have completed the capital program by that time).

Table 4 – Summary of Annual Debt Servicing Costs

	A: EWR - Aquifer	B: City - Aquifer	C: City-MV Supply
Purchase of EWR		$ 15,000,000	$ 15,000,000
Legal and other One-Time Start-up Costs		$ 500,000	$ 500,000
White Rock Upgrades	$ 7,500,000	$ 7,500,000	$ 7,500,000
Chlorination	$ 4,000,000	$ 4,000,000	
Arsenic Filtration	$ 9,500,000	$ 9,500,000	
Pump Station and Mains			$ 12,000,000
Upstream Upgrades from Sunnyside Reservoir *			$ 3,930,000
Debt Expenses		$ 500,000	$ 670,000
Total	**$ 21,000,000**	**$ 37,000,000**	**$ 39,600,000**
Cost of Capital	7.83%	4.5%	4.5%
Annual Debt Servicing Costs	**$ 1,807,933**	**$ 2,324,714**	**$ 2,488,072**

* Note that only 3 years (at $1,310,000 per year x 3 = $3,930,000) of the 10 year capital program ($13,100,000) is included in the annual debt servicing calculation. This leaves almost $9 million of additional debt in future years.

After the City has paid off the debt in thirty years, the $2.3 million in annual debt servicing costs related to the acquisition, immediate infrastructure upgrades, chlorination treatment, and arsenic filtration will no longer be required. At that time, the City may wish to provide additional funding to infrastructure replacement reserves that may have been deferred in recognition that these debt servicing costs would ultimately have an endpoint. It should be noted that our analysis of EWR indicates that there is currently no provision for funds placed into infrastructure replacement reserves.

Impact on Water Rates

As illustrated in Appendix 4, the total revenue required in Scenarios A and B are almost identical. In other words, due to the cost savings of $527,547 (illustrated in Table 3) as well as the reduced cost of capital available to the City of White Rock through MFA, the City is able to borrow an additional $16 million ($15 million for the purchase of EWR; and an additional $1 million for legal, start-up costs, and debt expenses) with little to no impact on water utility rates in comparison to EWR proceeding with TWQM project and arsenic filtration.

Return on Equity – EWR

EWR, as a private utility, is entitled by regulation to a profit. As outlined earlier, the cost of capital or financial structure of EWR is based 60% on internal loans (currently at 5.85%) and 40% return on equity (currently at 10.8%). Currently, $169,470 is charged as an expenditure related to the internal loan and $208,988 is charged as return on equity, or

profit. The following table illustrates the current internal loan and return on equity amounts (ROE).

Table 5 – EWR Current Internal Loan and Return on Equity (ROE)

	Internal Loan (60%)	Equity (40%)	Total
Current value (approximate)	$ 2,878,000	$ 1,935,000	$ 4,813,000
Rate	5.85 %	10.80%	
Interest on Loan / ROE	$ 169,470	$ 208,988	$ 378,458

As previously outlined in this report, a significant investment ($21,000,000) is required to resolve the chlorination and arsenic issues. Any increased investment serves to increase the value of the water utility and will increase the amount of funding (or profit) that will be charged to water users. The following table attempts to illustrate the potential impact of the proposed investment to internal loans and return on equity assuming the 60%/40% financial structure remains the same.

Table 6 – Potential Impact of Proposed Investment to Internal Loans & Return on Equity

	Internal Loan (60%)	Equity (40%)	Total
Current (approximate)	$ 2,878,000	$ 1,935,000	$ 4,813,000
Add: Additional Investment	$ 12,600,000	$ 8,400,000	$ 21,000,000
Total	$ 15,478,000	$ 10,335,000	$ 25,813,000
Rate	5.85 %	10.80%	
Interest on Loan / ROE	$ 905,000	$ 1,116,000	$ 2,021,000

ACQUISITION OF EWR – NON FINANCIAL CONSIDERATIONS

There are several non-financial considerations with regards to the acquisition of the water utility from EWR including:

- Capacity of the City to take responsibility for the water utility;
- Negotiation process of acquiring the water utility from EWR;
- Political risk of purchasing the water utility and associated debt; and
- Efficiencies associated with City ownership.

Capacity of the City

As mentioned earlier in this report, additional resources would be required if the City

acquired the water utility such as:

- Exempt Manager: Engineering – responsible for managing water utility; and
- Exempt Manager: Finance – responsible for utility billing and collection.

There is no question that from the perspective of City operations, it would much easier to allow EWR to continue to manage and operate the water utility. The addition of a water supply and distribution service performed by the City will have an impact on almost all departments and most particularly with Engineering and Operations as well as Finance. Engineering and Operations would be taking on responsibilities somewhat unique to other local governments in the Lower Mainland if the water supply source was to remain using the aquifer instead of Metro Vancouver.

Negotiations Process to Acquire Water Utility

EPCOR has advised that it purchased the shares of White Rock Utilities Limited. By purchasing the shares of the company, EPCOR would hold all the assets and liabilities of the previous company including any and all contractual agreements with the City of White Rock. The City's legal firm of Young Anderson has reviewed the September 29, 1922 agreement, attached as Appendix 1, and have advised that they believe that the City of White Rock should be able to rely on the provisions of the agreement, including the ability to purchase by providing notice, in accordance with the agreement. EWR disputes the existence of any agreement that gives the City of White Rock the current right to purchase the utility. EWR, in its submission to the Comptroller states, "EWR disputes the existence of this right. Accordingly, legal process of proving this right coupled with the actual exercise of the alleged right could be lengthy". It is acknowledged that there may be some uncertainties about the 1922 agreement and subsequent agreements that follow (was elector approval obtained for the 1922 agreement). On the advice of our legal firm, the City should take the position with EWR that the agreements are valid and binding. If for any reason those agreements should be unenforceable, Young Anderson believes that the City would likely have the ability to expropriate the water utility works, and pay no more than fair market value. Staff has used a value of $500,000 for legal and startup costs associated with the purchase of the EPCOR in the financial calculations. However, this is dependent on the length of time to conclude negotiations.

Political Risk

Currently, any and all issues regarding the operation of the water utility lie with EWR. By acquiring the water utility, the City of White Rock will assume all risks associated with the operation including water quality. It is also very difficult to ascertain the condition of the water infrastructure. The counter argument is that the City, for the first time in its history, will have full authority to take charge and manage the utility for, and on behalf of, the community. Council will be able to approve rates, billing cycles, Development Cost Charges, establish replacement reserves, etc.

Efficiencies Associated with City Ownership

Currently developers are required to deal with both the City and EWR for utility service connections. City ownership would mean one less organization that a developer would need to deal with.

There may also be efficiencies for the City to deal with underground utility infrastructure replacement at the same time when road works are being considered.

Advantages and Disadvantages of Acquisition

The following lists the advantages and disadvantages of acquiring the water utility from EWR:

Advantages:

- The cost of borrowing is currently at historical low levels;
- Once the debt to acquire the water utility is paid out, water rates will be lower than under EWR ownership as EWR demands a profit in the form of a return on equity (ROE) of 10.8%. Note that the 10.8% ROE is not based on operating costs but rather the value of the company assets. The overall savings to the community would ultimately be estimated at $1 million (or more) every year;
- There are administrative costs related to dealing with the Comptroller of Water Rights of BC that the City of White Rock would not have to deal with. White Rock Council would determine water rates by bylaw similar to the sanitary sewer and storm drainage utility;
- The City of White Rock will own the water utility on behalf of the community and is able to levy rates on a break-even basis similar to the sanitary sewer or storm drainage utility; and
- The City of White Rock, as a municipality, is eligible for senior government infrastructure grants not available to EWR.

Disadvantages:

- City of White Rock would be responsible for operating the water utility. However, the City could contract the operations back to EWR as an option;
- City of White Rock would be writing a very large cheque (estimated for financial analysis at $15 million but could be higher) and would borrow for the entire purchase price of the utility;
- City of White Rock would have to determine cash flow projections and interim internal borrowing options to cover the amount of cash flow required to finance water utility operations;
- Staff capacity in several departments would be impacted;
- City of White Rock would have to adjust Finance Department operations to accommodate additional billing and collections of water utility revenue;
- City of White Rock would have to be prepared to take on a significant infrastructure review and improvements, including the chlorination issue with Fraser Health, and meet new commitments in accordance with tight timelines;
- City of White Rock "assent free" borrowing level would be completely used up and any further borrowing would require a referendum or counter petition process;
- City of White Rock borrowing capacity is also reduced; and
- The capacity of City staff to undertake this project would impact the work plan and other major capital projects may need to be deferred.

Conclusion – Acquisition of EWR

From a financial perspective, as well as taking into account the other considerations outlined above, there is a very compelling case for the City of White Rock to pursue the acquisition of the water utility from EWR. The most compelling argument would be the fact that water users (essentially all property owners in White Rock) would ultimately benefit from not having to pay water rates that contribute to the profit (projected to increase over time) of a private enterprise. That benefit, however, will not accrue to water users until the debt to acquire the utility has been paid out.

The financial analysis illustrates that there would be little to no impact on water rates due to cost savings and reduced borrowing costs that the City of White Rock enjoys. The financial analysis assumes that the water utility could be acquired for approximately $15 million. It should be noted that this acquisition estimate may be low. Only through negotiation and appraisal of the fair market value of the water utility assets will the City truly have a complete financial analysis. It should be noted that the financial analysis assumes that EWR, or the City if it purchased the water utility, would be addressing arsenic filtration as part of near term capital improvements. It should also be noted that the financial analysis does not consider potential capital grants from senior levels of government to assist with the cost of infrastructure upgrades. These grants could serve to offset any estimated increase in acquisition or infrastructure upgrade costs.

OPERATIONS AND MAINTENANCE

A business case regarding the acquisition of a water utility would not be complete without taking into consideration the operations and maintenance of the utility.

Background of Current Operations

EPCOR has a local office in White Rock on Russell Avenue, which includes about four office staff and about six operations staff. There is a works yard located at Buena Vista Avenue and Oxford Street. The Operating Budget was approximately $1.8 million in 2013, excluding depreciation, interest payments, income taxes and equity return.

Typical operating programs are service replacements, pump replacement, routine well redevelopment, equipment replacement, reservoir cleaning and regular maintenance, water main repairs due to leaks and leak detection programs.

Typical capital programs include a hydrant replacement program, meter replacement program, vehicle replacement program, software replacement, water main replacement program. Excluding the TWQM project the average capital budget on average has been approximately $1.1 million per year.

Operations with a City-owned Water Utility

It is envisioned that should the City pursue the acquisition of the water utility, the City of White Rock Engineering and Operations management staff would have the opportunity to evaluate the ongoing operation and work program of EWR in significant detail to determine whether or not to take over operations in-house or to contract out the operations. If the City determined that it would be best to contract out this work, then it would be preferable to maintain this with EWR due to the obvious experience that they

current hold at this time. However, no decision is required on this matter at this time leaving staff sufficient time to evaluate the advantages and disadvantages associated with the options of ongoing operations and maintenance.

SUMMARY AND CONCLUSION

This business case was prepared to evaluate the issue of water supply options and the merits of acquiring the water utility from EWR. Based on the financial analysis and other considerations with information received from EPCOR, Metro Vancouver, and City of Surrey, it is recommended that the City of White Rock support the water supply option advocated by EWR which is to remain using the Sunnyside Uplands aquifer located in White Rock, rather than Metro Vancouver, and commence with infrastructure upgrades including chlorination treatment. Further, it is recommended that it would be in the best interest of the water users in White Rock that the City pursue the acquisition of the water utility from EWR.

C O P Y

ARTICLES OF AGREEMENT made in duplicate this 29th day of September in the year of our Lord One thousand nine hundred and twenty-two. 1922

BETWEEN:

THE CORPORATION OF THE DISTRICT OF SURREY
in the Province of British Columbia,
hereinafter called "the Corporation"
of the One Part,

AND:

WHITE ROCK WATER WORKS COMPANY LIMITED,
a body corporate having its head office
at White Rock in the said Province,
hereinafter called "the Company"
of the Other Part.

WHEREAS the Company was duly incorporated in the year 1913 under the Companies Act R. S. B. C. 1911 for the object inter alia to supply White Rock and the neighborhood thereof with water and to carry on the business of a Water Works Company in all its branches, to sink wells and shaft and to make, build and construct, lay down and maintain reservoirs, water works, cisterns, culverts, filter beds, mains and other pipes and appliances, to execute and do all other works and things necessary or convenient for obtaining, storing, selling, delivering, measuring, and distributing water or otherwise for the purpose of the Company.

AND WHEREAS the Company having first taken all proper steps thereunto authorizing it so to do including obtaining a license from the proper authorities of the Province of British Columbia did install a water works system in a portion of White Rock aforesaid, which system it is at the present time maintaining and operating.

AND WHEREAS the Company is desirous of increasing and extending the said water works system so as the better to serve the rapidly increasing population of the said White Rock and neighborhood and for that purpose has applied to the Corporation for permission to continue its undertakings in the said White Rock and neighborhood and the Corporation is

willing to grant such permission upon the terms and conditions hereinafter set forth.

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the premises the parties hereto do for themselves their successors and assigns, mutually covenant, promise and agree each with the other in manner following, that is to say:-

1. The Corporation hereby so far as it legally can do so, grants unto the Company the privilege to maintain and continue to operate its present water works system and also to lay down, relay, connect, disconnect, repair and maintain all mains and other pipes through and under the streets, avenues, alleys, highways, bridges, and thoroughfares of that portion of the said Municipality of Surrey known as White Rock and the neighborhood thereof, which may be more particularly described as Sections ten (10) and eleven (11) in Township One (1), New Westminster District, as may be necessarily proper and convenient for distributing and supplying water to consumers thereof, and to make connection between such mains and pipes and the dwellings or other buildings of such consumers where such water is to be used, the same to be laid and connected, maintained and repaired in a workmanlike manner so as not to interfere with the use of the said streets, avenues, alleys, highways, bridges and thoroughfares of the Municipality within the said limits for the purposes of travel and so as not to interfere with any existing improvements on the same or any part thereof, provided always and the right is hereby reserved to the Corporation to decide what streets, avenues, highways, alleys, bridges or thoroughfares the Company can so use for the purposes aforesaid and also as to what part of the same shall be used by the Company.

2. For the purpose of laying, repairing, keeping, maintaining, connecting and disconnecting said mains and pipes, the Corporation hereby grants unto the Company the privilege of digging ditches and excavating the said streets, avenues, alleys, highways and thoroughfares subject to the proviso contained in the last preceding paragraph, provided the Company shall without unnecessary delay and upon such terms and within such reasonable time as may be prescribed by the Council of the

Corporation restore the surface of the ground so dug up or excavated to as good condition as it was in before such work was done, and provided that the Company shall be liable for all damages, loss, costs and expenses occasioned by any of the works hereinbefore or hereinafter mentioned, and shall indemnify and save harmless the said Corporation from all loss and liability for or on account of any loss, damages, costs and expenses that may result from any work or negligence of the Company, and provided that the said work shall be done under the superintendence of the Engineer of the said Corporation or any person or persons to be nominated by the Council.

3. Before the Company proceeds to open or break up any street, avenue, alley, highway or thoroughfare, drain, ditch or tunnel, it shall apply to the Council of the Corporation for leave to do such work and no such work shall be commenced before such permission is duly granted by the said Council, except in the case of emergency, when application may be made to the Chairman of the Board of Works for the time being.

4. During the excavation of any street or highway, or the laying of any pipes and during repairs to and alterations of the same, the Company shall take due care and proper precaution for the safety and protection of foot and other passengers and of horses and other animals, carriages and vehicles lawfully using such street or highway and shall not unnecessarily interfere with or impede the public use of such street or highway.

5. Whenever it shall be necessary in grading any street or in building any sidewalk or making any other improvement, or in doing any work in the streets, avenues, highways, alleys or thoroughfares of the Municipality, to move, raise, or lower any pipe or pipes, or other property belonging to the Company, the Company shall at its own expense upon receiving two (2) weeks' notice from the Corporation, move, raise or lower such pipe or pipes or other property of the said Company within fourteen (14) days after receiving such notice to such height or depth, and to such place or places, designated in such notice, and if the Company shall neglect

or refuse to move, raise or lower such pipe or pipes or other property of the Company within the time limited therein then such pipe or pipes or other property may be moved, raised or lowered by the Corporation at the expense of the Company and the cost thereof may be recovered by the Corporation from the Company as a debt due from the Company to the Corporation.

6. The Company shall at its own expense run service pipes from its mains on any street, avenue, highway, alley or thoroughfare in the area mentioned in paragraph 1 hereof, to which its system extends to the property line of the premises owned by any applicant for water and shall supply such applicant with water at the rates approved by the proper officers of the Government of the Province of British Columbia.

7. The Company shall from time to time and as development and the erection of buildings proceed within the said area upon resolution of the Council to that effect extend its system of mains for the supply of water to meet the demands of residents on new streets when annual revenue equivalently 25% of the cost of construction of such extensions is guaranteed by applicants therefor.

8. The Company shall at the earliest possible date after this agreement has been submitted to the electors of the Corporation and has received the assent of the said electors install at the corners of intersecting streets on which buildings are erected suitable standards or hydrants, connected with the water main, such standards or hydrants, shall not be of less than two (2) inches in diameter and be provided with the necessary valves and turncocks, and shall be properly protected so as not to interfere with the traffic.

9. The Company shall procure and keep on hand at all times during the existence of this agreement or any renewal thereof a sufficient quantity of pure and wholesome water to adequately supply all actual residents in the aforesaid area on streets and roads to which the Company has extended its system and shall in this regard comply with the terms of any resolution or resolutions which may be reasonably passed by the Council of the said Corporation during the existence of this Agreement.

10. The Company shall from and after the assent of the electors has been obtained to this agreement during the season and when required by resolution of the Council at such points as may be designated by the Council supply water to public troughs, fountains and sanitary conveniences at a flat rate of one-half the amount charged for the same class of service to the general consumer, but that the Company shall have the right to control said supply with the object of preventing unnecessary waste of water.

11. The Company shall construct, equip, install, maintain and operate within the area described in Paragraph 1 hereof at such points within the said area to which the mains of the Company have been extended for fire purposes such hydrants as may be designated by the Council of the Corporation, such hydrants shall have a capacity of not less than two inches and shall be connected with a two inch or larger main.

12. The Company shall from time to time and at all times during the existence of this agreement comply with the reasonable requirements of the Council of the Corporation as to size of mains or other pipes installed by the Company in any street, avenue, alley, highway or thoroughfare in the said area and shall remove any mains or other pipes which may be declared to be of insufficient size and replace the same with such mains or pipes as may be declared by resolution of the said Council to be necessary.

13. The Company shall and will from time to time and at all times indemnify and save harmless the Corporation from any injury arising from any accident to any person or property by reason of any neglect or omission to keep the pipes and works of the Company in a safe condition and from all lawful claims against the Corporation for damages, caused by said water pipes of the Company or by any works, alterations, repairs or improvements made by the Company in connection with the undertakings herein contemplated.

14. The Company shall be liable for and shall pay all lawful claims for damages and lawful compensation for losses arising in respect of property through negligence or default of the Company occurring during the construction or by reason of the operation of the works of the Company

herein contemplated for which the Corporation may be liable.

15. The Company agrees to do, observe, fulfil and perform all the conditions, agreements, provisoes and undertakings herein contained.

16. The Company shall concurrently with the execution of this agreement enter into a bond with the Corporation for the sum of Five Thousand Dollars ($5,000.00) with a reliable bonding company to be approved by the Council of the Corporation, conditioned for the performance by the Company of the terms, conditions, provisoes and agreements herein contained on the part of the said Company to be done, observed and performed and shall keep the said bond in full force and effect during the existence of this Agreement.

17. The rights, powers and privileges hereinbefore granted shall continue for a period of twenty (20) years from the final passage of the By-law authorizing this Agreement, provided that at the expiration of ten (10) years from the said final passage of the said By-law the Corporation may after giving six (6) months' written notice prior to the expiration of such term of its intention so to do assume ownership of the Company's franchise, water works, plant, mains, pipes and fittings, licenses and real and personal property in connection with the working thereof, upon payment of their value to be mutually agreed upon or to be determined by arbitration under the provisions of the act concerning arbitration now in force in British Columbia, and in case the Corporation shall fail in exercising the right of assuming such ownership at the expiration of said term of ten (10) years the Corporation may thereafter exercise the same right of assuming such ownership after six months' written notice to be given prior to the expiration of any year after the aforesaid ten (10) years and upon payment of the value as determined by arbitration as aforesaid. And provided that in case the Corporation shall fail to assume ownership of the Company's said undertakings within the period of twenty (20) years from the final passage of the said By-law the Company shall be entitled to a renewal of this Agreement for further and other term or terms of ten (10) years until the Corporation shall assume ownership of the Company's undertakings as hereinbefore mentioned. 10 yr. term

18. The Company agrees to pay all costs and expenses in connection with the preparation and execution of this Agreement and the By-law authorizing same and submitting same to the ratepayers whether the assent of the ratepayers is obtained or not and all matters incidental thereto.

IN WITNESS WHEREOF the parties hereto have caused their Corporate Seals to be hereunto affixed by the hands of their proper officers.

The Corporate Seal of The Corporation of the District of Surrey was hereunto affixed in the presence of

_____ REEVE

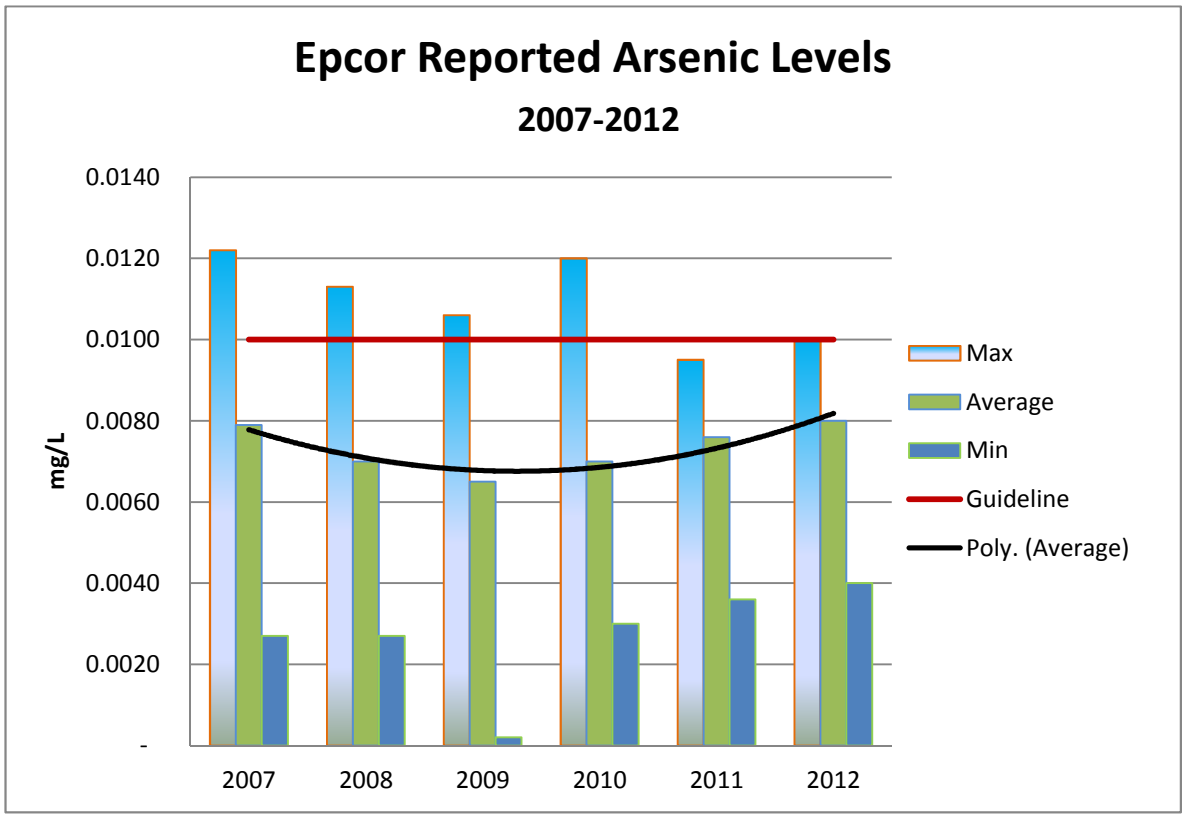
_____ CLERK

The Corporate Seal of White Rock Water Works Company Limited was hereunto affixed in the presence of

_____

Epcor Annual Performance Data 2007-2012

Substance	Year	Min	Max	Average	GCDWQ † Guideline
Arsenic	2007	0.0027	0.0122	0.0079	0.01
	2008	0.0027	0.0113	0.0070	0.01
	2009	0.0002	0.0106	0.0065	0.01
	2010	0.0030	0.0120	0.0070	0.01
	2011	0.0036	0.0095	0.0076	0.01
	2012	0.0040	0.0100	0.0080	0.01



Notes to graph:

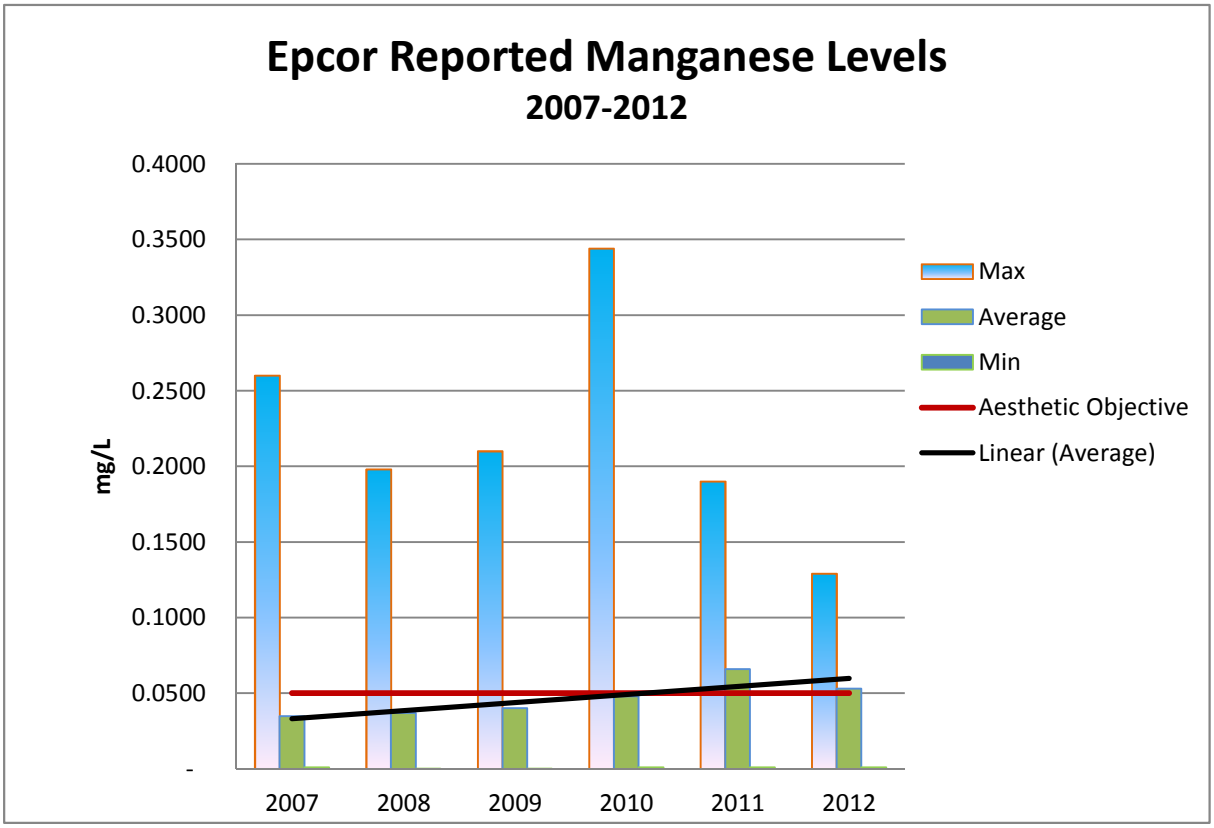
† GCDWQ (Health Canada Guideline for Canadian Drinking Water Quality)
Maximum Acceptable Concentration (MAC) levels for Arsenic is 0.010 milligrams per litre and is represented by the red line (Guideline).

The trend line, shown in black is based on the average of test samples and has been in an upward trend since 2009.

According to Epcor's 2011 White Rock Annual performance report page 9:
"Although the MAC for arsenic is set at 0.010 mg/L, there may be health risks associated with lower levels."

Epcor Annual Performance Data 2007-2012

Substance	Year	Min	Max	Average	GCDWQ Aesthetic Objective *
Manganese	2007	0.0009	0.2600	0.0348	0.05
	2008	0.0002	0.1980	0.0370	0.05
	2009	0.0002	0.2100	0.0400	0.05
	2010	0.0010	0.3440	0.0480	0.05
	2011	0.0010	0.1900	0.0660	0.05
	2012	0.0010	0.1290	0.0530	0.05

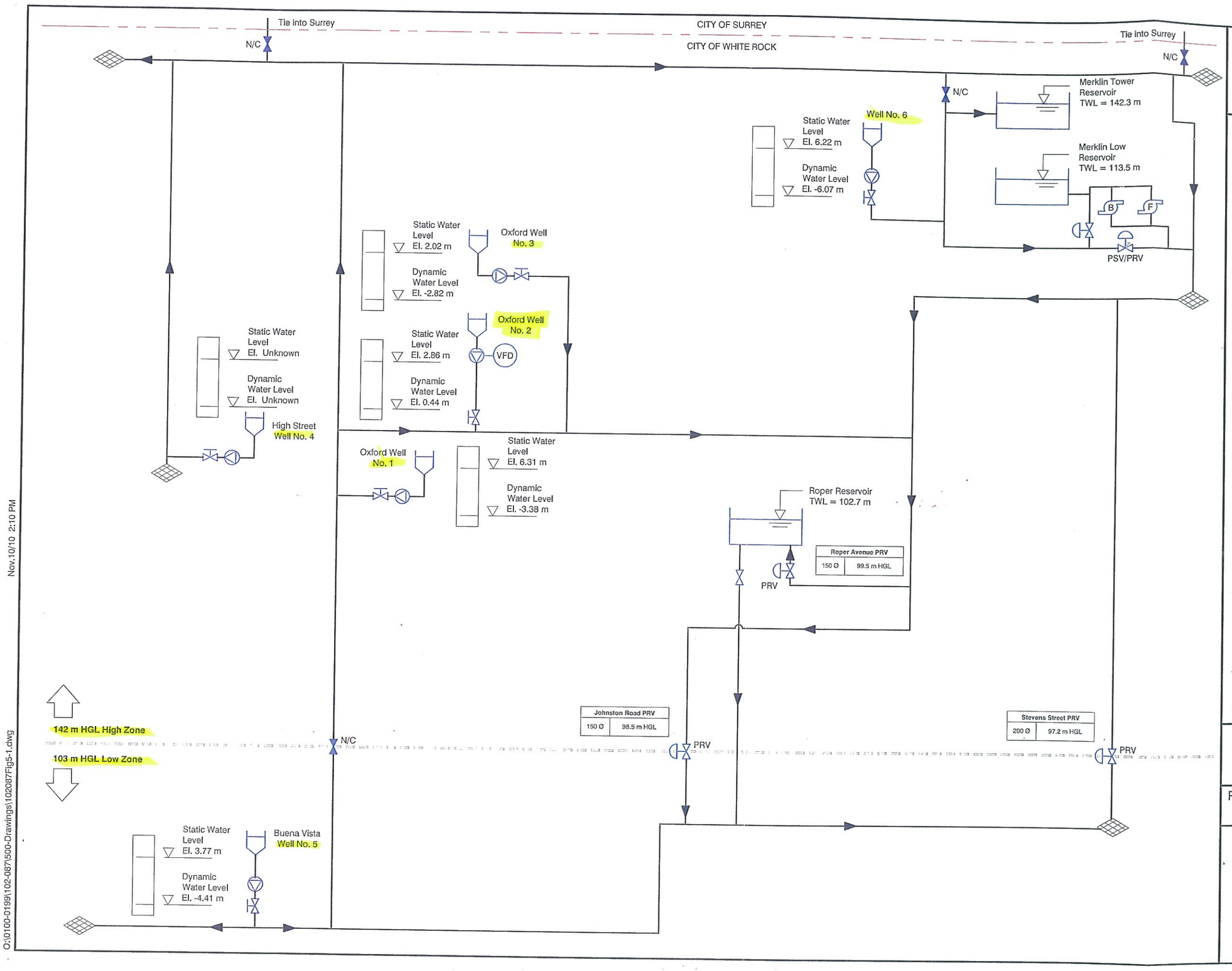


Notes to graph:

* The GCDWQ Aesthetic Objective (AO) is established for parameters that may impair the taste, smell or colour of water. They do not cause adverse health effects. The GCDWQ Aesthetic Objective is represented on this graph as the red line.

The trend line, shown in black is based on the average of test samples and although the average of test samples decreased in 2012 from 2011 the trend line, based on historical data, on an upward trend.

According to Epcor's 2011 White Rock Annual performance report page 9:
"The GCDWQ aesthetic objective for manganese is 0.05 mg/L. At levels above .15mg/L, it can cause staining of plumbing, laundry and objectionable taste. New studies, however, are suggesting some leveles of manganese may also be associated with heath affects."



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Water System Master Plan Update

Legend

- Transmission Main
- Control Valve
  - PRV (Pressure Reducing Valve)
  - PSV/PRV (Pressure Sustaining Valve/Pressure Reducing Valve)
- Well Pump
- Balancing Pump
- Fire Pump
- Manual Flow Control Valve
- N/C Valve Normally Closed
- VFD Variable Frequency Drive
- To Distribution Network

Notes:

1. Static and dynamic water levels are based on well depths and approximate ground elevations.
2. TWL are based on WaterCAD input data.

KERR WOOD LEIDAL associates limited
CONSULTING ENGINEERS

Not to Scale

Project No.	Date
102-087	November 2010

EPCOR White Rock Water Supply Facility System Schematic

Figure 5-1

HISTORICAL RATES

The following are the lending rates set at commencement of each issue. The rates are set for the first 10 years and then subject to a rate reset for loans exceeding that period. In this regard the 15, 20, 25 & 30 year terms will reflect this initial 10 year rate unless the MFA actually issued a longer term debenture for funding purposes.

Year		Issue #	5 yr	10 yr	*15 yr*	*20 yr*	*25 yr*	*30 yr*
2013	Spring	124	**2.150%**	**3.150%**	3.150%	3.150%	3.150%	3.150%
2012	Fall	121	**2.050%**	**2.900%**	2.900%	2.900%	2.900%	2.900%
2012	Spring	118	**2.400%**	**3.400%**	3.400%	3.400%	3.400%	3.400%
2011	Fall	117	**2.150%**	**3.250%**	3.250%	3.250%	3.250%	3.250%
2011	Spring	116	**3.250%**	**4.200%**	4.200%	4.200%	4.200%	
2010	Fall	110	**2.520%**	**3.730%**	3.730%	3.730%	3.730%	
2010	Spring	110	**3.350%**	**4.500%**	4.500%	4.500%	4.500%	
2009	Fall	106	**3.230%**	**4.130%**	4.130%	4.130%	4.130%	4.130%
2009	Spring	105	**3.550%**	**4.900%**	4.900%	4.900%	4.900%	
2008	Fall	104	**4.350%**	**5.150%**	5.150%	5.150%	5.150%	5.150%
2008	Spring	103	**4.250%**	**4.650%**	4.650%	4.650%	4.650%	4.650%
2007	Fall	102	**4.820%**	**4.820%**	4.820%	4.820%	4.820%	
2007	Spring	101	**4.520%**	**4.520%**	4.520%	4.520%	4.520%	
2006	Fall	99	**4.240%**	**4.430%**	4.430%	4.430%	4.430%	4.430%
2006	Spring	97	**4.560%**	**4.660%**	4.660%	4.660%	4.660%	
2005	Fall	95	**3.870%**	**4.170%**	4.170%	4.170%	4.170%	
2005	Spring	92/93	**4.250%**	**4.550%**	4.550%	5.100%	4.550%	
2004	Fall	85	**4.525%**	**4.975%**	4.975%	4.975%	4.975%	4.975%
2004	Spring	81	**4.150%**	**4.860%**	4.860%	4.860%	4.860%	
2003	Fall	80	**4.060%**	**4.775%**	4.775%	4.775%	4.775%	5.500%
2003	Spring	79	**5.491%**	**5.491%**	5.491%	5.491%	5.491%	5.570%
2002	Fall	78	**5.370%**	**5.370%**	5.370%	5.370%	5.370%	
2002	Spring	77	**5.800%**	**6.060%**	6.060%	6.060%	6.060%	
2001	Fall	75	**5.100%**	**5.690%**	5.690%	5.690%	5.690%	
2001	Spring	74	**5.930%**	**5.930%**	5.930%	5.930%	5.930%	
2000	Fall	73	**6.360%**	**6.360%**	6.360%	6.360%	6.360%	
2000	Spring	72	**6.450%**	**6.450%**	6.450%	6.450%	6.450%	

1999	Fall	71	**5.840%**	**5.990%**	5.990%	5.990%	5.990%
1999	Spring	70	**5.490%**	**5.490%**	5.490%	5.490%	5.490%
1998	Fall	69	**5.550%**	**5.550%**	5.550%	5.550%	5.550%
1998	Spring	68	**5.460%**	**5.460%**	5.460%	5.460%	5.460%
1997	Fall	66	**5.500%**	**5.850%**	5.850%	5.850%	5.850%
1997	Spring	65	**6.900%**	**6.900%**	6.900%	6.900%	6.900%
1996	Fall	64	**7.421%**	**7.421%**	7.421%	7.421%	7.421%
1996	Spring	63	**7.750%**	**7.750%**	7.750%	7.750%	7.750%
1995	Fall	61	**7.900%**	**7.900%**	8.000%	8.000%	8.000%
1995	Spring	60	**8.300%**	**8.660%**	8.810%	8.800%	8.900%
1994	Fall	59	**9.350%**	**9.350%**	9.470%	9.520%	9.520%
1994	Spring	58	**8.750%**	**8.850%**	8.900%	8.950%	8.950%
1993	Fall	56	**7.800%**	**7.950%**	8.000%	8.250%	8.500%
1993	Spring	55	**7.000%**	**7.625%**	8.125%	8.500%	
1992	Fall	54	**8.050%**	**8.050%**	8.050%	8.050%	8.050%
1992	Spring	53	**9.625%**	**9.625%**	9.625%	9.625%	
1991	Fall	51	**9.500%**	**9.500%**	9.500%	9.500%	9.500%
1991	Spring	50	**10.070%**	**10.070%**	10.070%	10.070%	

Projected Revenues and Expenses (With Capital Upgrade Scenarios)

High Level Estimates For Discussion Purposes Only	*Epcor 2013	Scenario A - No Purchase Epcor Projected @7.83%	Difference	Scenario B - City Purchase Continue with TWQM Projected @4.5%	Difference	Scenario C - City Purchase Metro Vancouver Water Projected @4.5%	Difference	Scenario B - City Purchase Assume $5M Grant Projected @4.5%	Difference
Revenues:									
Water Fees	$ 2,082,818	$ 2,082,818	$ -	$ 2,476,371	$ 393,553	$ 2,476,371	$ 393,553	$ 2,476,371	$ 393,553
Fire Protection Levy	$ 393,553	$ 393,553	$ -	$ -	$ (393,553)	$ -	$ (393,553)	$ -	$ (393,553)
Other Revenue	$ 44,408	$ 44,408	$ -	$ 44,408	$ -	$ 44,408	$ -	$ 44,408	$ -
Increased Water Fees Required	*$ -*	*$ 1,807,933*	*$ 1,807,933*	*$ 1,797,167*	*$ 1,797,167*	*$ 3,560,525*	*$ 3,560,525*	*$ 1,640,091*	*$ 1,640,091*
	$ 2,520,779	**$ 4,328,712**	**$ 1,807,933**	**$ 4,317,946**	**$ 1,797,167**	**$ 6,081,304**	**$ 3,560,525**	**$ 4,160,870**	**$ 1,640,091**
Expenses:									
Salaries & Benefits	$ 532,035	$ 532,035	$ -	$ 532,035	$ -	$ 532,035	$ -	$ 532,035	$ -
Power & Other Utilities	$ 163,829	$ 163,829	$ -	$ 163,829	$ -	$ 163,829	$ -	$ 163,829	$ -
Operations & Maintenance	$ 310,887	$ 310,887	$ -	$ 310,887	$ -	$ 310,887	$ -	$ 310,887	$ -
General & Administration	$ 171,493	$ 171,493	$ -	$ 171,493	$ -	$ 171,493	$ -	$ 171,493	$ -
Property Taxes	$ 245,391	$ 245,391	$ -	$ 160,591	$ (84,800)	$ 160,591	$ (84,800)	$ 160,591	$ (84,800)
	$ 1,423,635	$ 1,423,635	$ -	$ 1,338,835	$ (84,800)	$ 1,338,835	$ (84,800)	$ 1,338,835	$ (84,800)
Inter-Corporate Service Charges	$ 337,366	$ 337,366	$ -	$ 337,366	$ -	$ 337,366	$ -	$ 337,366	$ -
	$ 1,761,001	$ 1,761,001	$ -	$ 1,676,201	$ (84,800)	$ 1,676,201	$ (84,800)	$ 1,676,201	$ (84,800)
Depreciation & Amortization	$ 317,031	$ 317,031	$ -	$ 317,031	$ -	$ 317,031	$ -	$ 317,031	$ -
Interest Expense - Epcor	$ 169,470	$ 169,470	$ -	$ -	$ (169,470)	$ -	$ (169,470)	$ -	$ (169,470)
Debt Interest & Principal Payments - City		$ -	$ -	$ 2,324,714	$ 2,324,714	$ 2,488,072	$ 2,488,072	$ 2,167,638	$ 2,167,638
Equity Return	$ 208,988	$ 208,988	$ -	$ -	$ (208,988)	$ -	$ (208,988)	$ -	$ (208,988)
Income Taxes	$ 64,289	$ 64,289	$ -		$ (64,289)		$ (64,289)	$ -	$ (64,289)
Epcor Incremental Cost of Capital		$ 1,807,933	$ 1,807,933	$ -	$ -			$ -	$ -
Metro Van Water Supply Cost		**		**		$ 1,600,000	$ 1,600,000	**	
	$ 2,520,779	**$ 4,328,712**	**$ 1,807,933**	**$ 4,317,946**	**$ 1,797,167**	**$ 6,081,304**	**$ 3,560,525**	**$ 4,160,870**	**$ 1,640,091**
Est % Impact on Customer Bills		73%		73%		144%		66%	
Est $ Impact on Avg Monthly Resid Bill (constant dollars)		$ 15		$ 15		$ 30		$ 14	

* Source - Epcor White Rock Water Inc 2011 to 2013 Revenue Requirements Application

** No provision has been made to account for the additional operating costs resulting from chlorination and/or arsenic filtration capital upgrades - cost estimate unknown.

Scenario A - Assumes no other changes in Epcor's costs

Scenario C - Still Need to Finance $1,310,000 in Metro Van System Upgrades annually to 2025