

DATE: October 12, 2016

FILE: 5610-01

TO: Chair and directors
Comox Valley water committee

FROM: Debra Oakman, CPA, CMA
Chief Administrative Officer

RE: Comox Valley water system – 2017 to 2019 bulk water rate strategy

Purpose

To present a strategy for the Comox Valley water supply (CVWS) system bulk water rate.

Policy analysis

Bylaw No. 190, being the “Comox Valley Water Supply System Bulk Water Rate Bylaw No. 190, 2011” sets the bulk water rate for the service.

At its March 2016 meeting the Comox Valley Regional District (CVRD) board established a bulk water rate of \$0.66 per cubic meter effective April 1, 2016 and \$0.68 per cubic meter effective January 1, 2018.

The CVWS permit to operate contains a timeline for compliance for the CVWS to meet the Island Health 4321 drinking water policy thereby facilitating the continued safe, reliable supply of potable drinking water, last updated July 2015.

At the September 13, 2016 meeting of the Comox Valley water committee the following motion was passed:

THAT the Comox Valley Regional District proceed with property acquisition, permits and approvals, detailed design, and grant funding applications for the deep water lake intake and direct filtration treatment as recommended by Opus DaytonKnight in their Water Treatment Options Study – Project Definition Report dated August 12, 2016 immediately to progress the project and maximize opportunities for grant funding.

Executive summary

The CVWS is funded through the bulk water rate, which is charged to users on a per cubic meter basis for the amount of water consumed. The bulk water rate is derived from three main factors; projected future water demand, operating and maintenance costs and capital project requirements for the service. Future bulk water demand has been provided by the City of Courtenay and the Town of Comox and is estimated by the CVRD for their water local service areas (WLSA's). Demand within these areas is expected to increase slightly over the coming years to accommodate community growth.

Operating and maintenance costs are expected to remain relatively stable until the commissioning of the water treatment plant, at that time an increase is expected to cover power usage, labour requirements, equipment and supplies for the new facility. Capital project requirements are significant, especially in the years 2018 and 2019, as the CVRD works towards compliance with Island Health's 4321 drinking water policy.

The CVWS is facing a period of intense capital spending in order to comply with the current drinking water policy. Through an extensive water treatment options study completed by Opus DaytonKnight (Opus) a water treatment plant utilizing direct filtration with UV technology was recommended as the preferred treatment option. The funding required to complete this project will come from a combination of capital works reserves, development cost charges (DCC) reserves, transfers from operating, grant funding and new debt. Over the next four years reserve funds will be drawn to minimum levels and approximately \$74,000,000 of additional revenue will be required either through grant funding or new debt in order to fund capital projects.

To prepare for the significant capital project requirements in the coming years, it is recommended that a gradual increase in the bulk water rate begin in 2017 by raising the rate from \$0.66/m³ to \$0.71/m³ in 2017, \$0.75/m³ in 2018 and \$0.80/m³ in 2019. Beginning the increase to the bulk water rate in 2017 provides additional reserve contributions helping to reduce borrowing in the future, along with allowing for a more gradual rate increase. The estimated long term borrowing required to finance the project will vary with the amount of funding received, however a preliminary analysis completed by CVRD staff indicate that only achieving 75 per cent funding would avoid the need for a future rate increase over the current rate schedule. An initial assessment of potential funding sources would suggest that 50 per cent funding for the project is realistic, however even with 50 per cent funding the bulk water rate will require an additional increase above the proposed rate of \$0.71 per cubic meter. Rates will be reviewed again when project funding is better defined. In September 2016, Canada and British Columbia launched the Clean Water and Wastewater Fund, at this time the CVRD will be applying to the grant program for funding for the water treatment study.

Recommendation from the chief administrative officer:

1. THAT Bylaw No. 190 being the “Comox Valley Water Supply System Bulk Water Rates Bylaw No.190, 2011” be amended as per the revised bylaw attached as Appendix A to the staff report dated October 12, 2016.
2. THAT the CVRD staff proceed with a grant application to the Clean Water and Wastewater Fund for the Comox Valley water system treatment project.

Respectfully:

D. Oakman

Debra Oakman, CPA, CMA
Chief Administrative Officer

Background/current situation

The CVWS is funded through the sale of bulk water to its customers – the City of Courtenay, the Town of Comox and five CVRD WLSAs. The system is regulated by Island Health who provides an operating permit to the CVRD. The operating permit contains a number of conditions as well as a timeline for compliance to meet Island Health’s 4321 policy for drinking water treatment surface water supplies. The permit was recently amended in July 2015 to remove the provision of filtration deferral and now requires the installation of a filtration plant by 2019.

The amount of revenue generated by the service is determined by a combination of the bulk water rate and the water demand within the bulk system. The cost of the construction of filtration plant is expected to exceed one hundred million dollars and in order to reduce borrowing and maintain a gradual change in the rate, bulk water rate increases in 2017, 2018 and 2019 are recommended.

The following sections analyze future water demand, operating and maintenance costs, future capital infrastructure requirements and grant funding scenarios for the next five years for the CVWS.

Future water demand

Revenue for the service is directly related to the amount of water consumed. Table no. 1 provides the 2016-2021 projected water demand for the CVWS. Future water demand for the City of Courtenay and the Town of Comox have been provided by the City and Town to year 2020 and water demand for the WLSAs have been estimated by CVRD staff. Water demand for 2021 has been estimated based on projections to 2020.

Table No. 1: Projected water demand (thousands of m3)

Customer	Water Demand (cubic meters)					
	2016	2017	2018	2019	2020	2021
CVRD WLSA's	641	644	647	651	654	657
Courtenay ¹	4,666	4,713	4,760	4,807	4,855	4,904
Comox ¹	2,300	2,350	2,350	2,350	2,350	2,350
CVWPCC	70	70	70	70	70	70
KFN IR#1	63	64	64	65	66	66
Total (m3)	7,740	7,841	7,891	7,943	7,995	8,047

¹2016-2020 rates provided by the City of Courtenay and Town of Comox respectively

As shown in table no. 1 above, future water demand is trending slightly upwards due to community growth. The total water demand predicted in the table is used to determine water sales revenue for the CVWS.

Capital costs

In July 2015 Island Health removed the provision of filtration deferral and now requires the installation of a filtration plant by 2019. Through an extensive water treatment options study completed by Opus, it is recommended that a treatment plant utilizing direct filtration with UV technology be constructed to comply with Island Health's requirements.

Opus provided Class B infrastructure cost estimates (+/- 20 per cent) for the recommended option. In addition the Marsden reservoir will require duplication in 2021 to increase system capacity. Table no. 2 below lists the required capital projects for the next five years.

Table No. 2: Capital Project List

Project Title	Project Description	Approximate Year of Need	Requirement	Cost
Deep water intake (DWI)	DWI in Comox Lake, near the existing sampling station signed for full system buildout to 2069	2018/2019	Quality	\$11,000,000
Raw water pump station	Pumping station located on lake shore sized for easy expandability to 2069	2018/2019	Quality	\$10,700,000
Raw water conveyance	Raw water conveyance piping from pump station to treatment plant	2018/2019	Quality	\$11,800,000
Treatment plant	Direct filtration and UV disinfection treatment plant with clear well on site	2018/2019	Quality	\$47,100,000
Treated water conveyance	Treated water conveyance piping and tie in to the CVWS	2018/2019	Quality	\$25,200,000
Marsden reservoir duplication	Duplication of the Marsden reservoir to increase capacity	2021	Quantity	\$1,252,900
Total				\$107,052,900

As can be seen in table no. 2 above, capital spending requirements for the filtration project total \$105.8 million and are primarily scheduled to occur in 2018/2019. Engineering design for the project is scheduled to begin late 2016 and early 2017. Capital spending is the main cost driver for the CVWS for the next five years.

Operations and maintenance costs

A major portion of the costs included in the CVWS is the ongoing operating and maintenance costs required to provide the service. It is not expected that these costs will change significantly until the commissioning of the water treatment plant. At that time, it is estimated that operations and maintenance costs will increase by approximately \$500,000/year due to increased power requirements, chemicals for coagulation, equipment replacements, labour and incidentals.

Grant funding

The level of grant funding that the project receives will have a significant impact on the bulk water rate moving forward. Feedback to date from funding agencies is that the project is fundable, but in order to maximize potential funding project readiness must be improved. An initial assessment of potential funding sources would suggest that 50 per cent grant funding is realistic but that more, or less are also possible outcomes. Even with 50 per cent grant funding additional increases over the proposed \$0.71/m³ would be required. Table no. 3 below outlines the required bulk water rates for various funding scenarios.

Table No. 3: Required bulk water rate with various funding scenarios

Budget Year	Required Bulk Water Rate					
	Current Rate	2017	2018	2019	2020	2021
75% funding	0.66	0.66	0.68	0.68	0.68	0.68
50% funding	0.66	0.71	0.75	0.8	0.83	0.85
25% funding	0.66	0.71	0.84	0.97	1.00	1.02
0% funding	0.66	0.71	0.92	1.13	1.20	1.25

Only 75 per cent funding would not require a future increase over the current rate schedule. CVRD staff feel that 50 per cent grant funding is considered realistic and therefore are recommending to increase the rates in 2017, 2018 and 2019 to provide a more gradual increase. Slight rate increases in 2020 and 2021 will help to replenish reserves to provide for future capital work requirements.

In September 2016, Canada and British Columbia launched the Clean Water and Wastewater Fund. The fund will primarily focus investments on meeting immediate priorities for clean water and wastewater to support a cleaner and healthier environment for communities. At this time the CVRD will be applying grant program for the water treatment study.

The financial factors section below discusses the benefits of increasing the bulk water rate in 2017 and considers potential levels of grant funding for the project and the associated impact on users.

Options

The committee has the following options:

1. Amend the bulk water rate from \$0.66/m³ to \$0.71/m³ in 2017, \$0.75/m³ in 2018 and \$0.80/m³ in 2019 and reassess rates once the extent of grant funding is known.
2. To amend the bulk water rate to a different amount.
3. To not amend the bulk water rate at this time.

Due to the significant capital expenditures expected in the coming years, it is recommended to begin gradually increasing the rate now to prepare for future capital project costs. As such only option no. 1 above is recommended.

Financial factors

Based off the water demand, operations and maintenance costs and capital costs that are estimated for the year 2017, the predicted increase in revenue with raising the bulk water rate is outlined in table no. 4 below.

Table No. 4: Estimated revenue generated with varying bulk water rates

Bulk Water Rate	Estimated 2017 Revenue
\$0.66 per cubic meter	\$5.17M
\$0.71 per cubic meter	\$5.57M

A \$0.05 increase will generate approximately \$400,000 more in revenue for 2017, providing additional contribution to reserves to reduce borrowing requirements in future years. However based off the significant amount of capital spending required, additional increases to the bulk water rate are expected depending on the amount of funding received. Grant funding will play a significant role in future bulk water rates, a more detailed analysis of the impact on the bulk water rate for a range of grant funding scenarios can be found in Appendix A.

With zero, 25 or 50 per cent funding new debt will be occurred in 2018 and 2019. Only achieving 75 per cent funding would negate the need for additional borrowing. By increasing the bulk water rate now, future borrowing will be marginally reduced and a more gradual increase in rates will occur. The new debt charges in 2018 and 2019 are based off the required borrowing to complete capital projects and are budgeted based on a 20 year term and a four per cent interest rate. Actual debt terms will be determined at the time of borrowing.

CVRD staff worked with the municipal directors of finance to understand the impact of these estimated increases to the bulk water rate would have on rates paid by property owners in Courtenay and Comox. These results are summarized in table no. 5 below.

Table No. 5: Projected impact on municipal rates in the year 2020

	Current Rates	Expected Municipal Rates for 2020			
		No Grant	25% Grant	50% Grant	75% Grant
<i>Courtenay</i>					
Flat Rate	\$369.59	\$502.65	\$477.37	\$459.32	\$415.98
\$/m ³	\$1.28	\$1.75	\$1.66	\$1.60	\$1.45
<i>Comox</i>					
Flat Rate	\$327	\$518	\$436	\$378	\$337
Minimum/yr	\$180	\$252	\$228	\$192	\$180
\$/m ³	1.04	\$1.78	\$1.52	\$1.33	\$1.20

The range of projected impacts to the regional bulk water rates and municipal rates summarized above highlights the importance of reserve contributions and grant funding. By increasing the bulk water rate in 2017 the CVWS is committing to working towards providing high quality drinking water in the years to come.

Slight rate increases in 2020 and 2021 will help to replenish reserves and fund any future capital work projects that are required. Table no.6 below outlines the reserve fund balance in 2021.

Table No.6: Reserve fund balance

Funding	2021
	Reserve Fund Balance
75% funding	\$15,700,742
50% funding	\$3,228,325
25% funding	\$2,991,957
0% funding	\$2,343,969

Legal factors

The CVWS bulk water rate is set by Bylaw No.190.

Regional growth strategy implications

The regional growth strategy contains several goals and objectives regarding the construction of infrastructure and public health. By constructing a water filtration plant the CVRD is supporting a high quality of life through the protection and enhancement of community health, safety and well-being.

Intergovernmental factors

The bulk water rate projections are used by the City of Courtenay, Town of Comox and the CVRD in planning residential and commercial customer water rates. Changes in the bulk water rate have a direct impact on user rates.

Interdepartmental involvement

This report has been prepared by the engineering services branch in collaboration with the finance department.

Citizen/public relations

In parallel to the development of the preferred treatment option and project definition report completed by Opus a public engagement process was undertaken to inform the public about the study and options being considered, receive input from the community to inform selection and

weighing of evaluation criteria and to provide feedback on the recommendations. Feedback from the engagement process included strong weighting in favour of a deep water intake on Comox Lake, avoiding sensitive environmental areas and ensuring long term security of water supply for the regional system.

The CVWS is facing a period of intense capital spending in order to comply with the new drinking water policy and to ensure safe reliable drinking water to Comox Valley residents. Moving forward the CVRD will be engaging a communications consultant to ensure continued public engagement and communications. As part of this work providing clear and consistent messaging on project progress and next steps, along with providing opportunities for public feedback will be incorporated.

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Attachment: Appendix A – “Redline draft of proposed amendments to the Bylaw No.190”
Appendix B – “Projected 10-year budget for the CVWS”



COMOX VALLEY WATER
SUPPLY SYSTEM BULK
WATER RATES

The following is a consolidated copy of the Comox Valley water supply system bulk water rates bylaw and includes the following bylaws:

Bylaw No.	Bylaw Name	Adopted	Purpose
190	Comox Valley Water Supply System Bulk Water Rates Bylaw No. 190, 2011	October 25, 2011	To set the bulk water rates and charges and enable collection of such fees and charges
410	Comox Valley Water Supply System Bulk Water Rates Bylaw No. 190, 2011, Amendment No. 1	March 22, 2016	To amend Comox Valley Water Supply System Bulk Water Rates Bylaw No. 190, 2011 to update the bulk water rates to be effective April 1, 2016 and January 1, 2018

This bylaw may not be complete due to pending updates or revisions and therefore is provided for reference purposes only. THIS BYLAW SHOULD NOT BE USED FOR ANY LEGAL PURPOSES. Please contact the corporate legislative officer at the Comox Valley Regional District to view the complete bylaw when required.

COMOX VALLEY REGIONAL DISTRICT

BYLAW NO. 190

A bylaw to adopt regulations for the Comox Valley water supply system to set the bulk water rates and charges and enable collection of such fees and charges

WHEREAS the board adopted Bylaw No. 1783 being "Water Local Service Establishment Bylaw, 1995" on the 12th day of December 1996 to convert the water supply service to a local service for that portion of the regional district located within the boundaries of the City of Courtenay, the Town of Comox and Electoral Areas 'A', 'B' and 'C' of the regional district;

AND WHEREAS the board may, by bylaw, regulate the activities under the service;

NOW THEREFORE the board of the Comox Valley Regional District in open meeting assembled enacts as follows:

Citation

1. This Bylaw No. 190 may be cited as the "Comox Valley Water Supply System Bulk Water Rates Bylaw No. 190, 2011".

Rates

2. The rates set out in schedule 'A' of this bylaw are applicable to all water supplied in bulk to the participating member municipalities and electoral areas.

Meters

3.
 - (1) Bulk water supplied to each participating member municipality and electoral area shall be recorded by meters installed at each point of connection of a distribution system to the Comox Valley water supply system.
 - (2) Billing for water supplied shall be made monthly and shall be payable within thirty (30) days of the date of the billing.
 - (3) Where a meter is found not to register, or access is not available, charges shall be estimated on the basis of the amount of water used during a similar period of time when the meter was working or from other information or sources which can be obtained, and such amount so computed shall be paid by the member municipality or electoral area service area.

Repeal

4. Bylaw No. 2631 being "Comox Valley Water Supply System Bulk Water Rates Bylaw No. 2631, 2004" and all amendments hereto are repealed upon the adoption of this bylaw.

Schedule 'A'
Comox Valley Water Supply System Bulk Water Rates

The following bulk water rates are effective as of the date shown

Member Municipality	For each cubic meter of water supplied				
	Effective January 1, 2013	Effective April 1, 2016	Effective January 1, 2017 8	<u>Effective January 1, 2018</u>	<u>Effective January 1, 2019</u>
Town of Comox	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>
City of Courtenay	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>

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Water Service Area	For each cubic meter of water supplied				
	Effective January 1, 2013	Effective April 1, 2016	Effective January 1, 2017 8	<u>Effective January 1, 2018</u>	<u>Effective January 1, 2019</u>
Arden	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>
Comox Valley	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>
England Road	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>
Greaves Crescent	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>
Marsden/Camco	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>

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Comox Indian Band (by agreement)	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>
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User	For each cubic meter of water supplied				
	Effective January 1, 2013	Effective April 1, 2016	Effective January 1, 2017 8	<u>Effective January 1, 2018</u>	<u>Effective January 1, 2019</u>
Local government	\$0.64	\$0.66	\$0. 71 68	<u>\$0.75</u>	<u>\$0.80</u>

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Other than local government	\$1.17	\$1.17	\$1.26447	<u>\$1.31</u>	<u>\$1.42</u>
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75% Funding Scenario

Debt based off 4% interest and 20 year borrowing term

Required Water Rates						
Required Water Sales Revenue	(5,081,033)	(5,566,715)	(5,602,873)	(5,639,383)	(5,676,244)	(5,713,346)
Water Rate	0.66	0.71	0.71	0.71	0.71	0.71
Operating	2016	2017	2018	2019	2020	2021
Revenue						
Water sales	(5,081,033)	(5,566,715)	(5,602,873)	(5,639,383)	(5,676,244)	(5,713,346)
Recoveries other functions	(37,802)	(37,595)	(38,051)	(38,445)	(38,445)	(38,455)
Surplus prior yr	(1,338,003)					
	(6,456,838)	(5,604,310)	(5,640,924)	(5,677,828)	(5,714,689)	(5,751,801)
Expenditures						
Operating	2,289,676	2,103,208	2,090,840	2,111,630	2,635,113	2,687,815
Reserve contribution	1,909,085	2,363,025	236,741	238,284	1,641,499	363,009
Transfer to capital	1,180,000	60,000	2,235,266	2,249,837	360,000	1,622,900
Existing debt	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077
New Debt						
	6,456,838	5,604,310	5,640,924	5,677,828	5,714,689	5,751,801
Capital						
Funding Sources						
Debt proceeds						
Projected DCC's			(750,000)			
Grants			(43,500,000)	(31,500,000)		
Transfer from operating	(1,180,000)	(60,000)	(2,235,266)	(2,249,837)	(360,000)	(1,622,900)
Transfer from reserve		(2,000,000)	(11,514,734)	(8,250,163)		
	(1,180,000)	(2,060,000)	(58,000,000)	(42,000,000)	(360,000)	(1,622,900)
Funding Applied						
Capital projects & equipment	1,180,000	2,060,000	58,000,000	42,000,000	360,000	1,622,900
Debt issue expense						
	1,180,000	2,060,000	58,000,000	42,000,000	360,000	1,622,900
Reserve Fund Balances						
DCC Reserve Funds						
Contributions						
Expenditures		(2,000,000)		(3,977,828)		
Fund Balance	7,767,442	5,767,442	5,767,442	1,789,614	1,789,614	1,789,614
Capital Works Reserve						
Contributions	1,909,085	2,363,025	236,741	238,284	1,641,499	363,009
Expenditures		(11,514,734)	(4,272,335)			-
Fund Balance	15,703,930	15,703,930	11,668,336	11,906,620	13,548,119	13,911,128
Total Reserve Funds	23,471,372	21,471,372	17,435,778	13,696,234	15,337,733	15,700,742



50% Funding Scenario

Debt based off 4% interest and 20 year borrowing term

Required Water Rates						
Required Water Sales Revenue	(5,081,033)	(5,566,715)	(5,918,335)	(6,339,958)	(6,635,609)	(6,839,921)
Water Rate	0.66	0.71	0.75	0.80	0.83	0.85
Operating						
	2016	2017	2018	2019	2020	2021
Revenue						
Water sales	(5,081,033)	(5,566,715)	(5,918,335)	(6,339,958)	(6,635,609)	(6,839,921)
Recoveries other functions	(37,802)	(37,595)	(38,051)	(38,445)	(38,445)	(38,455)
Surplus prior yr	(1,338,003)					
	(6,456,838)	(5,604,310)	(5,956,386)	(6,378,403)	(6,674,054)	(6,878,376)
Expenditures						
Operating	2,289,676	2,103,208	2,090,840	2,111,630	2,635,113	2,687,815
Reserve contribution	1,909,085	2,363,025	38,569	3,761	959,899	
Transfer to capital	1,180,000	60,000	2,583,243	2,349,837	360,000	1,471,519
Existing debt	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077
New Debt			165,657	835,098	1,640,965	1,640,965
	6,456,838	5,604,310	5,956,386	6,378,403	6,674,054	6,878,376
Capital						
Funding Sources						
Debt proceeds			(8,282,828)	(14,556,564)		
Projected DCC's			(750,000)	(250,000)		
Grants			(29,000,000)	(21,000,000)		
Transfer from operating	(1,180,000)	(60,000)	(2,583,243)	(2,349,837)	(360,000)	(1,471,519)
Transfer from reserve		(2,000,000)	(17,466,757)	(3,990,164)		(151,381)
	(1,180,000)	(2,060,000)	(58,082,828)	(42,146,565)	(360,000)	(1,622,900)
Funding Applied						
Capital projects & equipment	1,180,000	2,060,000	58,000,000	42,000,000	360,000	1,622,900
Debt issue expense			82,828	146,565		
	1,180,000	2,060,000	58,082,828	42,146,565	360,000	1,622,900
Reserve Fund Balances						
DCC Reserve Funds						
Contributions						
Expenditures			(2,000,000)	(5,277,828)		
Fund Balance	7,767,442	7,767,442	5,767,442	489,614	489,614	489,614
Capital Works Reserve						
Contributions	1,909,085	2,363,025	38,569	3,761	959,899	-
Expenditures			(12,188,929)	(3,990,163)		(151,381)
Fund Balance	15,703,930	18,066,955	5,916,595	1,930,193	2,890,092	2,738,711
Total Reserve Funds	23,471,372	25,834,397	11,684,037	2,419,807	3,379,706	3,228,325



25% Funding Scenario

Debt based off 4% interest and 20 year borrowing term

Required Water Rates						
Required Water Sales Revenue	(5,081,033)	(5,566,715)	(6,628,752)	(7,704,509)	(7,994,710)	(8,207,906)
Water Rate	0.66	0.71	0.84	0.97	1.00	1.02

	2016	2017	2018	2019	2020	2021
Operating						
Revenue						
Water sales	(5,081,033)	(5,566,715)	(6,628,752)	(7,704,509)	(7,994,710)	(8,207,906)
Recoveries other functions	(37,802)	(37,595)	(38,051)	(38,445)	(38,445)	(38,455)
Surplus prior yr	(1,338,003)					
	(6,456,838)	(5,604,310)	(6,666,803)	(7,742,954)	(8,033,155)	(8,246,361)
Expenditures						
Operating	2,289,676	2,103,208	2,090,840	2,111,630	2,635,113	2,687,815
Reserve contribution	1,909,085	2,363,025	18,378	6,504	845,997	
Transfer to capital	1,180,000	60,000	3,029,946	2,571,769	360,000	1,366,501
Existing debt	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077
New Debt			449,562	1,974,974	3,113,968	3,113,968
	6,456,838	5,604,310	6,666,803	7,742,954	8,033,155	8,246,361
Capital						
Funding Sources						
Debt proceeds			(22,478,078)	(24,937,441)		
Projected DCC's			(750,000)	(250,000)		
Grants			(14,500,000)	(10,500,000)		
Transfer from operating	(1,180,000)	(60,000)	(3,029,946)	(2,571,769)	(360,000)	(1,366,501)
Transfer from reserve		(2,000,000)	(17,466,757)	(3,990,164)		(256,399)
	(1,180,000)	(2,060,000)	(58,224,781)	(42,249,374)	(360,000)	(1,622,900)
Funding Applied						
Capital projects & equipment	1,180,000	2,060,000	58,000,000	42,000,000	360,000	1,622,900
Debt issue expense			224,781	249,374		
	1,180,000	2,060,000	58,224,781	42,249,374	360,000	1,622,900

Reserve Fund Balances						
DCC Reserve Funds						
Contributions						
Expenditures		(2,000,000)	(5,277,828)			
Fund Balance	7,767,442	5,767,442	489,614	489,614	489,614	489,614
Capital Works Reserve						
Contributions	1,909,085	2,363,025	18,378	6,504	845,997	-
Expenditures			(12,188,929)	(3,990,163)		(256,399)
Fund Balance	15,703,930	18,066,955	5,896,404	1,912,745	2,758,742	2,502,343
Total Reserve Funds	23,471,372	23,834,397	6,386,018	2,402,359	3,248,356	2,991,957



0% Funding Scenario

Debt based off 4% interest and 20 year borrowing term

Required Water Rates

Required Water Sales Revenue	(5,081,033)	(5,566,715)	(7,260,061)	(8,975,356)	(9,593,652)	#####
Water Rate	0.66	0.71	0.92	1.13	1.20	1.25

Operating	2016	2017	2018	2019	2020	2021
Revenue						
Water Sales	(5,081,033)	(5,566,715)	(7,260,061)	(8,975,356)	(9,593,652)	#####
Recoveries other functions	(37,802)	(37,595)	(38,051)	(38,445)	(38,445)	(38,455)
Surplus prior yr	(1,338,003)					
	(6,456,838)	(5,604,310)	(7,298,112)	(9,013,801)	(9,632,097)	#####
Expenditures						
Operating	2,289,676	2,103,208	2,090,840	2,111,630	2,635,113	2,687,815
Reserve contribution	1,909,085	2,363,025	22,936	8,916	817,028	
Transfer to capital	1,180,000	60,000	3,370,651	2,691,204	360,000	1,589,392
Existing debt	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077	1,078,077
New Debt			735,608	3,123,974	4,741,879	4,741,879
	6,456,838	5,604,310	7,298,112	9,013,801	9,632,097	10,097,163
Capital						
Funding Sources						
Debt proceeds			(36,780,396)	(35,422,861)		
Projected DCC's			(750,000)	(250,000)		
Grants						
Transfer from operating	(1,180,000)	(60,000)	(3,370,651)	(2,691,204)	(360,000)	(1,589,392)
Transfer from reserve		(2,000,000)	(17,466,757)	(3,990,164)		(33,508)
	(1,180,000)	(2,060,000)	(58,367,804)	(42,354,229)	(360,000)	(1,622,900)
Funding Applied						
Capital projects & equipment	1,180,000	2,060,000	58,000,000	42,000,000	360,000	1,622,900
Debt issue expense			367,804	354,229		
	1,180,000	2,060,000	58,367,804	42,354,229	360,000	1,622,900
Reserve Fund Balances						
DCC Reserve Funds						
Contributions						
Expenditures		(2,000,000)	(5,277,828)			
Fund Balance	7,767,442	5,767,442	489,614	489,614	489,614	489,614
Capital Works Reserve						
Contributions	1,909,085	2,363,025				-
Expenditures			(12,188,929)	(3,990,163)		(33,508)
Fund Balance	15,703,930	18,066,955	5,878,026	1,887,863	1,887,863	1,854,355
Total Reserve Funds	23,471,372	23,834,397	6,367,640	2,377,477	2,377,477	2,343,969