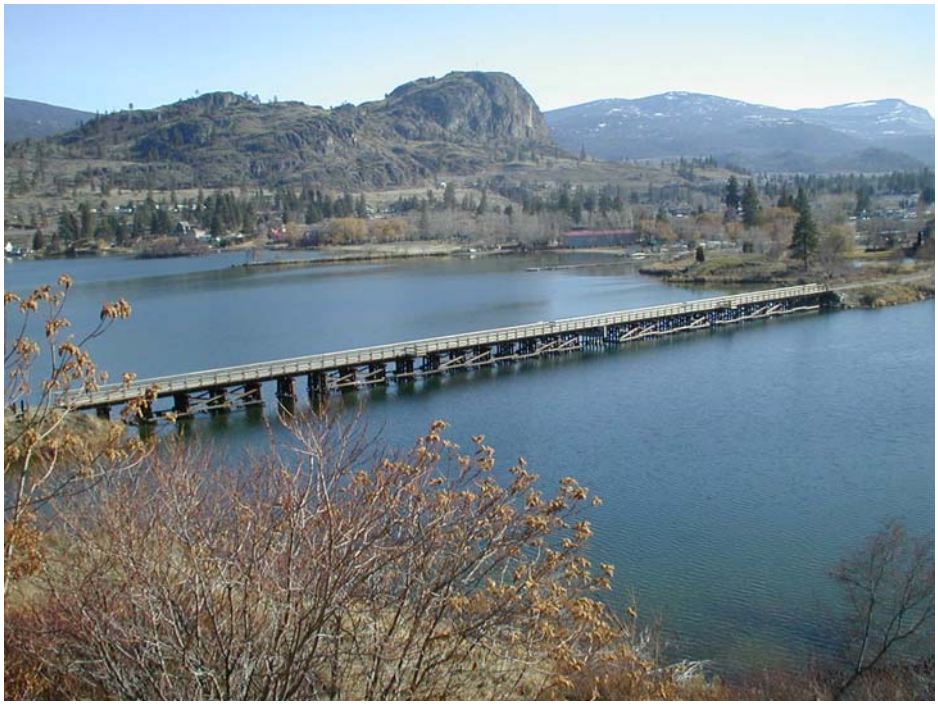
FINAL REPORT

Regional District of Okanagan Similkameen

Okanagan Falls Sewage Treatment Plant DCC



1564.0014.02 / August 2009

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1.0 INTRODUCTION

1.1 Objectives

The objective of this report is to provide background information that supports the Development Cost Charge calculations for the sanitary sewer treatment plant in Okanagan Falls, BC.

After this introductory section, this report contains sections that address the following items:

- Some general considerations such as the legislative background, stakeholder and public involvement, and the municipal assist factor;
- Growth projections and planning assumptions; and,
- Sanitary sewer DCC calculations.

1.2 Background

This DCC program is designed specifically to provide a DCC for a new sewage treatment plant in Okanagan Falls. While the existing facility adequately meets the needs of the existing population, increased capacity is required to accommodate future development in Okanagan Falls. As a result, future development is the sole driver influencing the need for a new plant. However, the new facility will also resolve an existing odour control concern.

1.3 Use of Best Practices Guide

The DCC Best Practices Guide, prepared by the Province of BC, has been used as a guide in preparing this DCC Background Report. This Guide provides a set of best practices that were considered in calculating the Development Cost Charges.

1.4 Guiding Principles

The Provincial DCC Best Practices Guide identifies six significant principles that should be followed in the development of a DCC bylaw. These principles, as they apply to the DCC bylaw in Okanagan Falls, are set out below.

Integration

The DCC program is subordinate to broader goals of the public and it is therefore intended to reflect other initiatives, such as the East Skaha, Vaseux Official Community Plan and the RDOS' long-range financial planning and servicing strategy. The charges are only one element of the RDOS' approach in dealing with the issues of land efficiency, housing affordability, and community sustainability. The development of DCCs is intended to be consistent with community plans, land use plans, and corporate financial and capital infrastructure strategies.

Benefiter Pays

This principle means that infrastructure costs should be paid by those who will use and benefit from the installation of such systems. In this case, as future development is driving the need for the new treatment plant, this is reflected in the calculation of benefit.

Fairness and Equity

Recognizing that costs should be shared in some way amongst benefiting parties, DCCs should employ mechanisms that distribute these costs between existing users and new development in a fair manner. Within the portion attributable to new development, DCCs should equitably distribute costs between the various land uses and different development projects.

Accountability

Establishment of DCCs should be a transparent local government process, and all information on which DCCs are based should be accessible and understood by stakeholders. This report and the stakeholder discussions should provide for accountability in the process.

Certainty

DCCs are a co-ordinated effort, where the local government's role is to plan for the level of development foreseen by regional and community planning. The local government simply acts as the administrator of the DCC program. Therefore, certainty should be built into the DCC process, both in terms of stable charges and orderly construction of infrastructure. Stability of DCC rates will assist the development industry in the planning of their projects. At the same time, sufficient DCC funds must be collected to ensure that financing is available for construction of infrastructure in a timely manner.

Consultative Input

The development of DCCs must provide adequate opportunities for meaningful and informed input from the public and other interested parties.

2.0 GENERAL CONSIDERATIONS

2.1 Legislative and Regulatory Background

The RDOS receives its legislative authority to impose Development Cost Charges from sections 933, 934 and 935 of the *Local Government Act.* In general terms, the RDOS has the authority to impose DCCs for the purpose of providing funds to assist in paying for the capital costs of providing, constructing, altering, or expanding its sanitary sewer system to service, directly or indirectly, the development for which the charge is being imposed.

2.2 Public Participation Process

A public participation process was undertaken by the RDOS prior to the implementation of a new Sanitary Sewer DCC. This process involved publication of this DCC Background Report and the draft DCC rates on the RDOS website. The RDOS hosted a December 3, 2008 stakeholder meeting in Okanagan Falls, open to both the local development community and the public at large. Appendix E contains presentation materials from this public meeting. As well, letters were sent out to members of the development community advising them of the new Sanitary Sewer DCC, and providing them with an opportunity to express their concerns. Finally, there have been ongoing community discussions about the new sewer treatment plant and financing through the Okanagan Falls Wastewater Advisory Committee work, the Sanitary Sewer Strategic Review, the new site rezoning process, and the work towards a new Liquid Waste Management Plan.

2.3 Municipal Assist Factor

In this background report, the Municipal Assist Factor identified for the Sanitary Sewer DCC is 43 percent. This means that for the proportion of projects allocated to new development, the developer will pay 57% and the RDOS will pay 43%. This Municipal Assist Factor has been established by the RDOS Board to ensure that the DCC program does not deter development.

3.0 GROWTH PROJECTIONS AND PLANNING ASSUMPTIONS

3.1 Background Planning Documents

This DCC report builds on work that has already been done. The *Okanagan Falls Sewage Treatment Plant – Strategic Review,* completed by EarthTech in August 2005, provides the main information required to support this DCC background report. Information from this report is used to calculate the DCC program in accordance with the DCC Best Practices Guide. The *Strategic Review* is provided in Appendix A of this report.

3.2 Estimation of New Development

The *Okanagan Falls Sewage Treatment Plant – Strategic Review* contains population and sewer flow rate projections for the period 2005-2030 as follows:

Year		Projected Population			Projected Flow (ML/day)			
					Okanagan Falls, Kaleden & Skaha Estates		Okanagan Falls	
		Okanagan Falls	Skaha Estates	Kaleden Lakeshore	Average Annual Daily Flow (ML/day)	Maximum Day Flow (ML/day)	Average Annual Daily Flow (ML/day)	Maximum Day Flow (ML/day)
2005	0	1,380	550	426	1.11	1.58	0.65	0.93
2006	1	1,480	556	430	1.16	1.66	0.70	0.99
2007	2	1,580	561	435	1.21	1.73	0.74	1.06
2008	3	1,680	567	439	1.26	1.80	0.79	1.13
2009	4	1,698	572	443	1.28	1.82	0.80	1.14
2010	5	1,715	578	447	1.29	1.84	0.81	1.15
2011	6	1,733	583	452	1.30	1.86	0.81	1.16
2012	7	1,751	589	456	1.31	1.88	0.82	1.18
2013	8	1,769	594	460	1.33	1.90	0.83	1.19
2014	9	1,786	600	464	1.34	1.92	0.84	1.20
2015	10	1,804	605	469	1.35	1.93	0.85	1.21
2016	11	1,822	611	473	1.37	1.95	0.86	1.22
2017	12	1,840	616	477	1.38	1.97	0.86	1.24
2018	13	1,857	622	482	1.39	1.99	0.87	1.25
2019	14	1,875	628	486	1.40	2.01	0.88	1.26
2020	15	1,893	634	491	1.42	2.03	0.89	1.27
2021	16	1,910	640	496	1.43	2.05	0.90	1.28
2022	17	1,928	646	500	1.44	2.07	0.91	1.30
2023	18	1,946	652	505	1.46	2.09	0.91	1.31
2024	19	1,964	658	509	1.47	2.10	0.92	1.32
2025	20	1,981	664	514	1.48	2.12	0.93	1.33
2026	21	1,999	669	519	1.50	2.14	0.94	1.34
2027	22	2,017	675	523	1.51	2.16	0.95	1.36
2028	23	2,035	681	528	1.52	2.18	0.96	1.37
2029	24	2,052	687	532	1.54	2.20	0.96	1.38
2030	25	2,070	693	537	1.55	2.22	0.97	1.39

In discussions with EarthTech, the authors of the *Strategic Review*, we were advised that the population projections (shown above) were somewhat out of date as they were based on previous projections combined with estimations based on current development activity. Instead of using these projections as the basis for calculating future flow rates, EarthTech calculated future flow rates by applying a projected 2% annual growth rate to existing sewer flows. This flow rate corresponds with a low to medium annual residential growth rate. As noted in the *Strategic Review:*

> Population growth projections from the East Skaha, Vaseux Official Community Plan (Bylaw No. 1708) indicate a low to medium annual residential growth rate.... A low to medium growth rate corresponds to an annual population increase of 1.5% to 2.5%. Previous sewer studies have adopted a population growth rate of 2.0% for the Okanagan Falls sewerage area. For the purposes of projecting future flow rates and in the absence of any updated population growth figures, a 2.0% growth rate is adopted for this report.

Additionally, for the purposes of calculating peak sewer demands, Okanagan Falls' population data is unreliable as there are significant numbers of vacation units within the community. These vacation units are not included in the population projections that are noted above in the *Strategic Review.* As a result, for the purposes of this DCC program it was necessary to establish alternative methodology for estimating new development based on units rather than population. This methodology, outlined below, was devised through discussions with EarthTech, the authors of the *Strategic Review.*

To determine estimated new residential development to 2030, a 2% growth rate was applied to the number of existing units currently connected to the community sewer system. In 2007 there were 948 single detached residences (including mobile homes), and 104 apartments connected for a total of 1,052 residential units.

Based on discussions with the Regional District, we understand that within the Okanagan Falls sewer service area, there are current development applications, or expressions of interest in developments, for approximately the following numbers of residential units:

Single-Detached Units:	approx. 130	42.6%
Multiple-Family Units:	approx. 175	57.4%
Total Residential Units:	**approx. 305**	**100.0%**

Based on this breakdown, it is anticipated that over the horizon of this DCC program, future residential development will be contain approximately 60% multiple family units and 40% single detached units. Using 2% annual growth in residential units, 607 total new residential units are

anticipated in the period 2008-2030. Of these 607 units, it is projected that 364 units (60%) will be multiple family (apartment and townhouse) units, and 243 units (40%) will be single detached units (including mobile homes and bareland strata).

To determine projections for commercial space, a 2% growth rate was also applied to the amount of existing commercial floor space in Okanagan Falls. The amount of existing commercial floor space was determined by multiplying the number of commercial units connected to the sewer system by typical floor areas for the type of unit. The result is an estimate of 12,745 square meters of existing commercial space in Okanagan Falls. By applying a 2% growth rate to the existing commercial space, it is projected that there will be a need for 7,353 square meters of new commercial space between 2008 and 2030.

No new industrial and institutional land uses are projected for the timeframe of this DCC program. However, DCCs for these land uses have been calculated, based on standard equivalency factors, in the event that new industrial or institutional development does occur.

Current and estimated new residential and commercial development is summarized in the table below.

	Existing Development (2007)	Projected New Development (2008-2030)	Total Development (2030)
Single Detached Residential (units)	948	243	1,191
Multi Family Residential (units)	104	364	468
Total Residential (units)	1,052	607	1,659
Commercial (m^2)	12,745	7,353	20,098

Appendix B sets out the calculations for equivalent units and estimated existing commercial development.

4.0 SANITARY SEWER DEVELOPMENT COST CHARGES

4.1 Sanitary Sewer DCC Program

This DCC program is solely for a staged Wastewater Treatment Plant at a new site in Okanagan Falls. Total project cost is estimated at $8,801,000, broken down as follows:

Treatment Plant Capital Cost	$8,170,000
Land Acquisition	$212,000
5% DCC Administration (of $8,382,000)	$419,000
TOTAL:	**$8,801,000**

This cost estimate is an update from the detailed cost estimate provided in Appendix C: Application for Grant for Okanagan Falls Sewage Treatment Plant. Details on the updated cost estimate are provided in Appendix D: 2008 Cost Estimate for Okanagan Falls Sewage Treatment Plant. The cost estimate was updated by EarthTech from the original cost estimate.

4.2 Equivalent Units

Equivalency in units is used to represent new population growth and the demands that new growth places on infrastructure. Each type of development will place a different pressure on the services, and equivalent units are used to compare the impacts.

It is not feasible to calculate DCCs solely on residential growth, due to the additional capital requirements from non-residential development. Through the DCC analysis, growth has been projected in terms of both residential and non-residential development, and various equivalent unit values have been used to relate the impacts of different land uses.

The following table outlines the equivalent unit calculations for sanitary sewer, by land use type:

Equivalency Factors for Sanitary Sewer DCC Calculations

Land Use	Units	Equivalency Factors
Single Family Residential	Dwelling Units (DU)	2.5 persons per DU
Multi-Family Residential	Dwelling Units (DU)	1.8 persons per DU
Commercial	m^2 Gross Floor Area (GFA)	0.008 persons per m^2 GFA
Industrial	m^2 Gross Floor Area (GFA)	0.008 persons per m^2 GFA
Institutional	m^2 Gross Floor Area (GFA)	0.007 persons per m^2 GFA

These equivalency factors are based on a review of the ranges presented in the Provincial DCC Best Practices Guide, and they also reflect the differentials in sanitary sewer user fee charges for various classes of property in Okanagan Falls, set out in Appendix B. As it is expected that any new industrial development would be small in scale, with primarily indoor uses, the equivalency factor for industrial uses is based on gross floor area of development rather than total site area, and it has been set at the same rate as commercial uses.

4.3 Sanitary Sewer DCC Calculation

To calculate the sanitary sewer DCC, a benefit allocation of 100% has been used, meaning that the full $8,801,000 project cost is attributed to new development. The 100% benefit allocation to new development is justified as the new treatment plant would not be required if new development were not to occur. As noted earlier in this report, the current sewer treatment plant is adequate to meet the needs of the existing population, and the new sewer treatment plant is only necessary to meet the needs of new development. As a result, the DCC Best Practices Guide "rule of thumb" method has been used, allocating 100% of benefit to new development.

Other principles and assumptions are as follows:

- The sewage treatment plant will benefit the entire sewer service area, and therefore the DCC has been calculated on a community-wide basis;
- No senior government funding has been incorporated into this DCC calculation; and,
- The municipal assist factor is set at 43%, as established by the RDOS Board for this DCC.

Based on the above, the net DCC calculations for sanitary sewer transmission are shown on the following table, and are summarized as follows:

Net Sewage Treatment Plant DCC (43% Assist)

- Single Family = $9,493 per unit
- Multiple Family = $6,835 per unit
- Commercial = $30 per square meter GFA
- Industrial = $30 per square meter GFA
- Institutional = $27 per square meter GFA

Sewage Treatment Plant DCC Calculations

(100% benefit allocation to new development)

Equivalency Factors

Land Use	Estimated New Development	Units	Equivalency Factor		Equivalent Population
Single Family Residential	243	dwelling units	2.50	persons/DU	607
Multi Family Residential	364	dwelling units	1.80	persons/DU	655
Commercial	7353	m^2 gross floor area	0.008	persons/m^2 gross floor area	59
Industrial	n/a	m^2 gross floor area	0.008	persons/m^2 gross floor area	0
Institutional	n/a	m^2 gross floor area	0.007	persons/m^2 gross floor area	0
				Total Equivalent Population	**1,321**

Unit DCC Calculation

Net Sewer DCC Program Recoverable	$8,801,000			
Existing Sewer DCC Reserve Monies	$0			
Net Amount to be Paid by DCCs	$8,801,000			
DCC per Equivalent Population	**$6,662**			

Resulting Sewer DCCs	No Assist	43% Assist Factor	
Single Family Residential	$16,653.78	$9,492.65	per dwelling unit
Multi Family Residential	$11,990.72	$6,834.71	per dwelling unit
Commercial	$53.29	$30.38	per m^2 gross floor area
Industrial	$53.29	$30.38	per m^2 gross floor area
Institutional	$46.63	$26.58	per m^2 gross floor area

APPENDIX A

Okanagan Falls Sewage Treatment Plant – Strategic Review

CLICK TO VIEW APPENDIX A

APPENDIX B

Equivalent Unit and Commercial Development Calculations

The table below sets out the number of units by type, based on Sewer Utility Rate information provided by the Regional District of Okanagan Similkameen for 2006. The information was updated to September 2007 through conversations with Staff at the RDOS to arrive at the figures set out below.

OK Falls Sewer Utility – Units, Connections, and Rates

Unit Type	Units	Rate	Rate Equiv	Typical GFA (m2)	Equiv per m2	DCC Equiv Factor	Commercial GFA Estimates (m2)
Single Family Dwelling	720	$ 340	1.000			2.5	
Apartment	104	$ 255	0.750			1.8	
Small Business	38	$ 215	0.632	200	0.003	0.008	7600
Campground/Washroom Per Site	37	$ 87	0.256				
Coin Operated Car Wash	0	$ 1,275	3.750				
Ind Plants / Service Station	0	$ 215	0.632				
Laundromat - Per Washer	0	$ 145	0.426				
Mobile Home - Per Mobile	228	$ 255	0.750				
Motel/Hotel - Per Unit	87	$ 87	0.256	35			3045
Restaurant / Licensed Lounge / Pub	4	$ 765	2.250	150			600
Classrooms	13	$ 215	0.632	220	0.003	0.007	
Sani-Dump - Per Station	0	$ 87	0.256				
Shower/Washroom Building	1	$ 87	0.256				
Supermarket	3	$ 515	1.515	500			1500
Total:	1,235						12,745

APPENDIX C

Application for Grant for Okanagan Falls Sewage Treatment Plant

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REGIONAL DISTRICT
RDOS
OKANAGAN-SIMILKAMEEN

April 5, 2007

RDOS File: 1855.03

Ministry of Community Services
PO Box 9490 Stn Prov Govt
4 – 800 Johnson Street
Victoria, BC, V8W 9N7

Re: **Canada / BC Municipal Rural Infrastructure Fund**
Application for Grant for
Okanagan Falls Sewage Treatment Plant – MRIF Project No. 17331

Subsequent to the Minister and Assistant Deputy Minister's meeting with our CAO and Area Director on March 26, 2007 regarding the Regional District's subject application for Can / BC MRIF grant assistance, this is in response to the suggestion that the Regional District consider a phasing strategy for implementation of the subject project and revise the grant assistance request for the initial phase, given the limited funding availability.

We have developed a strategy whereby the project could be implemented in four (4) stages.

Stage 1 - Provide a Sludge Management System at the New Site

A building will be constructed at the new sewage treatment plant (NTP) site to house the following new equipment:

- a dissolved air flotation (DAF) sludge thickener,
- a centrifuge for dewatering,
- an effluent process water return pump, and
- a blower to provide air to a new aerated holding tank.

A new residual process water return forcemain from the NPT to the existing sewage treatment plant (ETP) and a new sludge forcemain and a new primary effluent gravity trunk, or forcemain, depending on the topography from the ETP to the NTP will be constructed. All will be installed in a common trench; however the primary effluent line will remain inactive until the completion of Stage 2.

A positive displacement pump will be installed at the ETP to pump sludge to the NTP.

The existing oxidation ditch, clarifier, Salsnes filter and effluent pump station at the ETP will continue in service.

In operation, sludge will be diverted from the drying beds and pumped from the clarifier once an hour to the aerated holding tank. Every day or two, sludge will be pumped from the holding tank to the DAF and then through the centrifuge. The residual process water will be pumped back to the oxidation ditch. Dewatered cake will be stored at the NTP and periodically trucked to the landfill or composting facility in Penticton.

Stage 2 - Install a New Bioreactor and Clarifier at the New Site

A new bioreactor and clarifier will be constructed at the NTP to allow the production of secondary effluent.

The sewage service area will be expanded and sewer servicing installed for the homes at the south end of Cedar Street and on Thomas Place.

Effluent from the NTP will be pumped to the ETP using the pump and forcemain developed in Stage 1. The clarifier and oxidation ditch will be taken off-line. The Salsnes filter will continue to serve as the headworks for grit control. The effluent pump station and rapid infiltration basins will continue to be utilized for effluent disposal.

Stage 3 - Add Headworks and Primary Clarifier/Fermenter

An additional primary clarifier at the NTP will serve as a volatile fatty acid fermenter thereby allowing the commencement of the nutrient removal process. Additional upgrades to the headworks will include a new 6mm screen and grit removal facility or the Salsnes filter will be incorporated as part of the headworks at the new site to provide for inorganics removal.

Stage 4 - Add Effluent Filter and Ultra-Violet Disinfection

The addition of the filter and ultra-violet disinfection facility at the NTP will complete the treatment process and provide for advanced biological nutrient removal. The effluent quality would now be sufficiently high to allow for discharge to surface waters for disposal or habitat enhancement. Addition of a chlorine injection facility will provide a disinfection residual should effluent be reused as irrigation water.

Cost Estimate

The total estimated net project costs of Stage 1 are $3,853,000. Under the MRIF program we estimate the net eligible cost to be $3,469,000 for which the Regional District would seek a total of $2,312,667 in grant assistance.

Attached are two appendices. Appendix A being the consultant's estimate of construction and engineering costs for Stage 1 and the subsequent stages. Appendix B is our estimate of Stage 1, taking into account inflation, land costs; which have been tentatively finalized, and other administrative costs.

If you wish to meet or have any other questions, please contact me at 250-490-4210.

Yours truly,

Alfred E. Hartviksen, P.Eng.
Engineer

cc: Dan Ashton, RDOS – Chairman of the Board
Bill Schwarz, RDOS – Director Electoral Area 'D', Kaleden / Okanagan Falls
Jason Johnson, RDOS – Chief Administrative Officer
Marty Willfong, P.Eng., RDOS – Director of Development Services

Staged Wastewater Treatment Plant Construction at New Site (Excluding Land Acquistion)

	Item	Unit	Quantity	Cost/Unit	Cost Estimate ($)
Stage 1: Provide a Sludge Management System at the New Site					
1.1	General (Mob/DeMob, Overhead, insurance)	LS	1	150,000	150,000
1.2	Site grading and access road construction	LS	1	25,000	25,000
1.3	Water/electric utility servicing to site	LS	1	100,000	100,000
1.4	Building to house DAF, centrifuge, pumps & mechanical	m^2	150	2,000	300,000
1.5	DAF Unit (incl. installation)	LS	1	140,000	140,000
1.6	Centrifuge Unit (incl. installation)	LS	1	160,000	160,000
1.7	Pumpstation & forcemain for returning effluent back to old site	LS	1	165,000	165,000
1.8	Conveyance trunk/forcemain from old to new plant	m	1,600	300	480,000
1.9	Concrete sludge storage vault & blower	LS	1	90,000	90,000
1.1	Building mechanical	LS	1	125,000	125,000
1.11	Biofilter for odour control	LS	1	85,000	85,000
1.12	Electrical & Controls	LS	1	200,000	200,000
1.13	Miscellaneous piping & metal fabrication	LS	1	50,000	50,000
1.14	Sludge pump & forcemain at existing WWTP	LS	1	120,000	120,000
1.15	Fencing	LS	1	25,000	25,000
				Sub-Total	2,215,000
				Engineering (15%) & Contingency (20%)	775,250
				Sub-Total (Rounded)	***$2,990,000***
Stage 2: Install a New Bioreactor and Clarifier at the New Site					
2.1	General (Mob/DeMob, Overhead, insurance)	LS	1	200,000	200,000
2.2	Secondary clarifiers (incl. scrapers/sludge pumps)	LS	1	850,000	850,000
2.3	Bioreactor tanks (c/w recycle pumps and aeration)	LS	1	450,000	450,000
2.4	Building addition for staff/lab & blowers	m2	50	2,000	100,000
2.5	Miscellaneous piping & metal fabrication	LS	1	50,000	50,000
2.7	Electrical & Controls	LS	1	150,000	150,000
2.8	Sewage Area Expansion (South Cedar St & Thomas Pl Area)				
	i. 200mm gravity trunk	m	180	325	58,500
	ii. Manholes	LS	3	4,500	13,500
	iii. Services	LS	19	1,100	20,900
				Sub-Total	1,892,900
				Engineering (15%) & Contingency (20%)	662,515
				Sub-Total (Rounded)	***$2,560,000***
Stage 3: Add Headworks and Primary Clarifier/Fermenter					
3.1	General (Mob/DeMob, Overhead, insurance)	LS	1	50,000	50,000
3.2	Bar screen	LS	1	110,000	110,000
3.3	Retrofit Salsnes filter to new site & process	LS	1	20,000	20,000
3.4	Fermenter tank (incl. FRP cover)	LS	1	110,000	110,000
3.5	Building addition for headworks	m^2	25	2,000	50,000
3.6	Miscellaneous piping & metal fabrication	LS	1	50,000	50,000
3.7	Electrical & Controls	LS	1	100,000	100,000
				Sub-Total	490,000
				Engineering (15%) & Contingency (20%)	171,500
				Sub-Total (Rounded)	***$662,000***
Stage 4: Add Effluent Filter and UV Disinfection					
4.1	General (Mob/DeMob, Overhead, insurance)	LS	1	75,000	75,000
4.2	Effluent disk filter unit (incl. installation & tank)	LS	1	325,000	325,000
4.3	UV Disinfection unit (incl. installation & concrete channel)	LS	1	150,000	150,000
4.4	Miscellaneous piping & metal fabrication	LS	1	25,000	25,000
4.5	Electrical & Controls	LS	1	50,000	50,000
				Sub-Total	625,000
				Engineering (15%) & Contingency (20%)	218,750
				Sub-Total (Rounded)	***$844,000***

Okanagan Falls Wastewater Treatment Plant Expansion	
TOTAL (Rounded)	***$7,056,000***

Okanagan Falls Sanitary Sewage Treatment Plant / MRIF Project No.: 17331

Eligible Costs		
Construction / Manufacturing	$	2,603,000
Site Improvements		
Off-site services		
Professional fees	$	345,000
Communication Events / acivities		
Other Eligible Costs		
Contingency	$	521,000
GST	$	208,000
Total Eligible Cost	$	3,677,000
Tax Rebate	$	208,000
Net Eligible Cost	$	3,469,000

	Consultant's Est.	Acct for Inflation
Construction	2,215,000	2,603,210
Engineering	332,250	344,866
Contingency	443,000	520,642
GST	179,415	208,123
	3,169,665	**3,676,840**

1.25% ← Inflation factor / month
Apr-07 ← Date of consultant's estimate
May-08 ← Construction start date
Jul-07 ← Engineering design start date
May-08 ← Construction start date

Ineligible Costs		
Ineligible Costs	$	184,000
Other Ineligible Costs		
Land	$	200,000
Total Ineligible Cost	$	384,000
Net Ineligible	$	384,000

←5% of 'Total Eligible Cost' for Admin, debt servicing, etc.

Total Estimated Gross Project Costs	$	4,061,000
Tax Rebate	$	208,000
Total Estimated Net Project Costs	$	3,853,000

Proposed Financing of Eligible Costs							
Fiscal Year	**Applicant**	**Provincial**	**Federal**	**Third-Party**	**Other Federal**	**Other Provincial**	**Total**
2006 - 07	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2007 - 08	$ 115,000	$ 115,000	$ 115,000	$ -	$ -	$ -	$ 345,000
2008 - 09	$ 520,667	$ 520,667	$ 520,667	$ -	$ -	$ -	$ 1,562,000
2009 - 10	$ 520,667	$ 520,667	$ 520,667	$ -	$ -	$ -	$ 1,562,000
2010 - 11	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 1,156,333	$ 1,156,333	$ 1,156,333	$ -	$ -	$ -	$ 3,469,000
% of Costs	33%	33%	33%	0%	0%	0%	100%

APPENDIX D

2008 Cost Estimate for Okanagan Falls Sewage Treatment Plant

AECOM
Suite 201, 3275 Lakeshore Road, Kelowna, BC V1W 3S9
T 250.762.3727 F 250.762.7789 www.aecom.com

AECOM

October 10, 2008 Refer to File: 83022-04a

Regional District of Okanagan-Similkameen
101 Martin Street
Penticton, BC V2A-5J9

Attention: Mr. Alfred Hartviksen, P.Eng.

Dear Sir:

Re: Okanagan Falls Sewage Treatment Plant
Updated Cost Estimate

Further to your request dated September 26, 2008, the construction cost estimate for the proposed Okanagan Falls Sewage Treatment Plant upgrade has been updated based on our assessment of recent construction cost inflation rates. The previous estimate, dated April 5, 2007, resulted in a total project cost of $7,056,000.

We understand that the updated estimate is not to include over-sizing to accommodate Kaleden or Skaha Estates. Hence, Item 2.8, Sewage Area Expansion (South Cedar St. & Thomas Pl. Area) which represented a total of $125,415.00 including contingencies, is removed from the estimate.

Various factors have contributed to an escalation in the present day cost of the project. Commodity prices, particularly for steel which is a common in material used to construct treatment plants, have seen a strong surge in price in the last 18 months. In addition to higher fuel costs, labour costs have also risen locally due to a strong demand for construction.

Based on these factors, it is recommended that an inflation factor of 18% be used for the updated estimate. This is based on an estimated monthly inflation factor of 1.0% per month and an 18 month time interval. Therefore, the updated cost estimate is $8,170,000

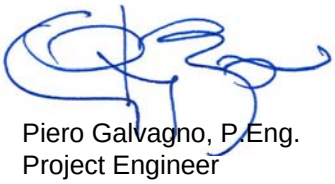
Original Estimate	$7,056,000
less Item 2.8 (Sewerage Area Expansion)	-$125,415
by Inflation Factor	x 1.18
Updated Total Cost Estimate (Rounded) Year 2008 dollars	**$8,170,000**

Application of an inflation factor of 1.18 is recommended given the preliminary nature of the estimate and is based on results of recent tender prices.

We trust this provides adequate information for your purposes. Please call if you have any questions or would like to discuss this further.

Sincerely,

AECOM



Piero Galvagno, P.Eng.
Project Engineer

cc:

APPENDIX E

Public Meeting Presentation

Okanagan Falls Sewage Treatment Plant DCC

Stakeholder Meeting
October 2008

James Klukas

URBAN SYSTEMS.

Presentation Outline

- Purpose
- DCC Overview
- DCC Rate Calculation
- Draft DCC Rates
- Next Steps

URBAN SYSTEMS.

Workshop Purpose

- Provide background information on DCCs
- Introduce Sewage Treatment Plant DCC
- Feedback

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What are DCCs?

- **Section 933 of the *Local Government Act* authorizes the collection of DCCs**
- **DCCs:**
  - fees collected from new development to help recover off-site infrastructure costs associated with growth.

URBAN SYSTEMS.

What are DCCs?

- **DCCs can be levied only for:**
  - Water infrastructure
  - Sanitary sewer infrastructure
  - Storm drainage infrastructure
  - Transportation infrastructure
  - Parkland acquisition and development
- **Infrastructure needs must be related to development**

URBAN SYSTEMS.

What are DCCs?

- **DCCs cannot pay for:**
  - Operation and maintenance
  - Needs of existing population
  - Buildings
    - libraries
    - fire halls
    - police stations
    - parks & recreational buildings

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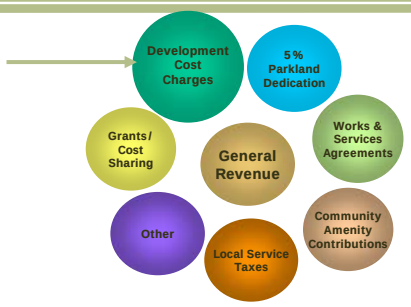
Who pays DCCs?

- **New development**
  - Applicants for subdivision approval
  - Applicants for building permits
- **Developments that do not impact infrastructure are exempt**

URBAN SYSTEMS.

DCCs – One Cost Recovery Tool



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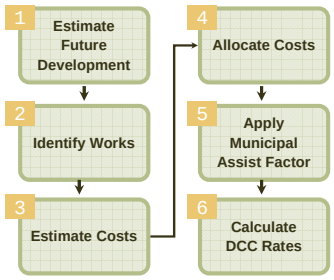
Calculating DCCs

$$DCC = \frac{\text{INFRASTRUCTURE COSTS}}{\text{NEW DEVELOPMENT}}$$

URBAN SYSTEMS.

Calculating DCCs



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Step 1 – Estimate Growth to 2030

Land Use	Units	Total New Development
Single Detached	dwelling unit	243
Multiple Family	dwelling unit	364
Commercial	sq. m. GFA	7,353

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Step 2 – Identify Capital Works

- Sanitary Sewage Treatment Plant
  - Insert additional background info

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Step 3 – Estimate Costs

- Sanitary Sewage Treatment Plant
- Cost Estimate: $7,686,000

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Step 4 - Allocate Costs (cont'd)

- **If a project benefits only new development…**
  - Allocate costs only to new development.
- **Example:**
  - Sewer treatment plant expansion to increase capacity
    - Only required because of new development; would not be required if no development
    - 100% costs allocated to new development

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Step 5 – Apply Municipal Assist Factor

- The *LGA* indicates that DCCs are used "to assist" the local government in paying the above noted costs.
- This contribution is called the **"assist factor"**.
- Political decision based on local conditions.
- Proposed Assist Factor for Sewer DCC: 35%

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Step 6: DCC Rates - Sewer

Land Use	Draft DCC
Single-Detached Residential	$9,454 / dwelling unit
Multi-Family Residential	$6,807 / dwelling unit
Commercial	$30 / sq. m. GFA
Industrial	$30 / sq. m. GFA
Institutional	$26 / sq. m. GFA

Key Assumptions

- Community-wide vs. area-specific DCCs
- DCCs for single detached development - levied at subdivision
- DCCs for multiple unit residential, commercial, industrial, institutional – levied at building permit

Key Assumptions

- **Grace period:**
  - 1 year grace period for in-stream subdivision applications (LGA requirement)
  - For building permits, new DCC rates apply immediately after Bylaw implemented
  - All new subdivision and building permit applications will be levied the new DCC rates immediately after Bylaw implemented

Next Steps…

- Complete Background Report and send to Inspector of Municipalities for preliminary review
- Draft DCC Bylaw
- 1st, 2nd and 3rd readings of DCC Bylaw
- Finalize Background Report and send Bylaw documents to the Inspector of Municipalities
- 4th reading by Council
- Implementation of Bylaw – Target early 2009