



REPORT

Regional District of Central Okanagan

Regional Wastewater Treatment Rates Analysis

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1.0 Introduction

This report aims to establish a cost recovery approach for the Regional District of Central Okanagan Wastewater Treatment Plant and major collection trunks and lift stations. The costs considered include both operations and maintenance costs, and capital replacement costs. The goal is to identify the annual costs and establish equitable charges to West Kelowna, Westbank First Nation and Peachland.

This report is organized into the following sections:

- An overview of the current situation
- A discussion on the philosophy for cost recovery, and a recommended approach
- A review of operations and maintenance costs
- Allocations of operations and maintenance costs to three jurisdictions
- A review of capital replacement costs
- Allocations of capital replacement costs to three jurisdictions
- A summary of cost allocations to three jurisdictions
- A comparison of potential charges to existing charges
- Conclusions



2.0 Current Situation

The Regional District of Central Okanagan (RDCO) owns and operates the Westside Regional Wastewater Treatment Plant (WWTP) and major collection trunks. These facilities provide sewage treatment services to West Kelowna, Westbank First Nation and Peachland. The annual operational budget is collected through user fees set by the Regional District of Central Okanagan Sewer Systems Bylaw No 1171. The fees are collected by the three jurisdictions and remitted semi annually to the Regional District.

The fees charged are set out in the bylaw and the user fee table for the bylaw for 2010 is set out below:

TABLE I – USER FEES FOR THE WESTSIDE REGIONAL SEWER SYSTEM

Description	Monthly User Fee* 2010
Single Family Residence	\$20.68
Apartment, Multi Family Residential, Duplex, Mobile Home (per unit)	\$24.92
Laundromat (per machine)	\$28.96
School (per student)	\$1.08
Restaurant, Beer Parlour, Neighbourhood Pub, Food Take-Out	\$82.72
Beauty Salon, Supermarket, Bakery, Medical Facility	\$41.37
Garage, Service Station, Public Assembly	\$28.44
Class Code Not Used	
Commercial Enterprise	\$20.68
Hospital with Laundry (per bed)	\$20.68
Hospital without Laundry (per bed)	\$12.42
Institution, Work Camp, Rest Home, Residential School (per bed)	\$4.15
Nursing Home (per bed)	\$12.42
Motel or Hotel (per unit)	\$5.77
Motel or Hotel (per housekeeping unit)	\$8.28
Campsite (per seasonal unit)	\$5.05
Campsite (per year round unit)	\$10.67
Commercial	defined by calculated design f
All other uses either not defined in Classes A to Q or which are defined with metered flows (per m ³ of Total Monthly Flow***)	\$1.24

The fee structure was established years ago based on Ministry of Health estimates of sewage flows by use. Subsequently the fees were adjusted year by year to account for inflation and cost



increases. The fees provide enough revenues to cover operations and maintenance costs at this time; however, the Regional District of Central Okanagan wants to ensure that enough revenues are collected to generate funds for future operations and maintenance costs as well as capital replacement over time.

In the past, the fee collection for the area now administered by West Kelowna was administered by the Regional District. This accounted for the majority of the users on the system and was a major responsibility for the Regional District. Now that the area is administered by West Kelowna, the municipality may wish to apply its own cost recovery philosophy to its jurisdiction rather than relying on the previous methodology applied by the Regional District. Peachland and Westbank First Nation are also significant users and may also wish to apply their own approach to cost recovery at the individual user level. The primary concern for the Regional District has shifted from the administration of fees at the individual user level to the equitable allocation of costs across three jurisdictions:

- Peachland
- Westbank First Nation
- West Kelowna

The Regional District also wishes to ensure that the revenues generated are sufficient to cover the operations and maintenance expenditures anticipated for the system as well as the replacement of capital owned by the Regional District. It should be noted that the Regional District is creating a Sewer Plant Stakeholder Select Committee that will make recommendations to the Regional Board regarding items related to cost recovery for the sewer facilities owned by the Regional District.

An important point to note is that this analysis focuses on the system components owned and operated by the Regional District. The collection system components owned by West Kelowna, Peachland and Westbank First Nation are not addressed by this analysis. Previously the Regional District operated and maintained the collection system components owned by the three jurisdictions, but this situation has changed, and West Kelowna has taken over the operations and maintenance of the collection system components it now owns. While the Regional District may continue to operate and maintain the collection system for Westbank First Nation and Peachland, the cost recovery for that service is not included in this analysis.



The Regional District expenditures and revenues for 2007 to 2009 in the Sewer Revenue fund (the fund that looks after Operations and Maintenance) are set out in the table below:

	2009	2008	2007
Revenues	\$3,463,944	\$3,126,382	\$2,947,494
Expenditures	\$3,488,973	\$3,041,325	\$2,471,128

The detailed figures are included in appendix A

As the Regional District of Central Okanagan goes from providing service to individual users to providing service to jurisdictions, the Regional District is moving towards accounting for the facilities owned by them separately (the treatment plant and major collection trunks), the budget calculation method for figures for 2010 will differ from those used in 2009. The figures shown below do not include the operations and maintenance costs for the collection system components owned by Westbank First Nation, Peachland, or West Kelowna. They include the costs for the items for which this report will calculate the cost recovery approach. The O&M budget for 2010 is as follows:

Wastewater Treatment Plant	\$2,514,720
Major Trunks and Lift stations owned by the RDCO	\$127,101
Total	\$2,641,821

The details of the costs are included in Appendix A

Note that the 2010 budget shows the Operations expenses for the Treatment Plant at \$2,149,332 however this cost does not include the Administrative Overhead costs charged by the Regional District, which amounts to \$365,388 in the 2010 budget. The Treatment Plant operating expenses plus the Treatment Plant overhead combined equals a total of \$2,514,720 which is the figure used for this analysis. The \$127,101 figure in the 2010 budget for O&M of Major Trunks and Lift stations owned by the Regional District already includes the Administrative Overhead costs.



3.0 Philosophy for cost recovery

3.1 Options for Cost Recovery

The Regional District wishes to invoice Westbank First Nation, West Kelowna and Peachland in an equitable manner for Wastewater Treatment services. A range of options were considered including:

- Retain the existing system
- Charge based on sewage capacity
- Charge based on water use capacity
- Charge based on water use
- Charge based on sewage flows

The considerations for each of these options are set out below.

Retain the existing system

The Regional District could retain the existing system, where the jurisdictions provide the user fees collected utilizing the current rates table. This would provide the funding required, although it would mean that a portion of the current fees would need to be directed towards operations and maintenance of local collection system. This would also perpetuate the currently perceived inequities with the current method. Furthermore, it does not allow the individual jurisdictions to customize their approach to attain their individual policy goals.

Charge based on sewage capacity

The Regional District could charge based on sewage capacity. This method would be based on the capacity provided to each community for sewage flow. The capacity would be based on the sewer main sizes and capacities of lift stations. The total capacity provided each community would form the basis of the invoice to the community. Issues associated with this approach are as follows:

- The community may be provided with significant sewer main capacity, but it may not be utilizing anywhere near the capacity.
- The capacity can vary between different areas of the community.



Charge based on water use capacity

The Regional District could charge based on water use capacity. Water use capacity can serve as a proxy for sewage usage, and one determinant in water use capacity is the size of the water connection. The charge could be based on the number of various sized connections in each community. There are a number of issues associated with using this approach:

- The water connection size is not known for all connections.
- Varying levels of data exist with the varying jurisdictions.
- Many water connections are of a similar size, even though the sewage usage may differ.
- The association between water connection size and sewage generation is not as closely correlated as desired for this analysis.

Charge based on water use

The Regional District could charge based on water use. The amount of water use during the winter (non-irrigating) months can form a reasonable proxy for sewage use. One method considered was to obtain water consumption data per use, and draw upon that data to interpolate sewage generation. The issues associated with this approach are as follows:

- Water meters and water meter data is not consistently available over the study area. There are still several different water purveyors, some with partial water metering and some with no water metering.
- Data may be difficult to obtain from a wide range of water purveyors.
- Water use is not a precise proxy for sewage generation. While winter usage figures are useful, there are many uses such as tourism-based establishments where the summer sewage generation will be much higher than the winter generation.

Charge based on sewage flows

Using data from lift stations, pumps and sewage flow monitoring, the amount of sewage flow from Westbank First Nation, West Kelowna and Peachland could be measured. It is relatively straight forward to determine the flows from Peachland as all the sewage is conveyed through one trunk (Okanagan Lake force main) to the plant. All the flows from IR 10 come through one dosing chamber, so flow measurement from IR 10 is straight forward as well. The situation is more complex between IR 9 and West Kelowna as some of the sewer lines run from West Kelowna into IR 9 and then into West Kelowna again, however the flows can be calculated using the current sewer model and data from all of the trunks and lift stations.



The issues associated with using flows are as follows:

- The measurement is somewhat complex
- Flows can vary from year to year.

On the other hand, flows present a very equitable method for cost allocation. Each jurisdiction would pay for sewer operations and maintenance costs directly related to the amount of sewage they generate. It also provides each jurisdiction the opportunity to manage their own sewage generation, with benefits realized through the reduction of actual flows.

Preferred Method

Based on a review and consideration of a range of methods, this report uses sewage flows as the preferred basis for determining charges. The reasons for using this method are as follows:

- Flow data is available consistently from the Regional District.
- Sewage flow presents an equitable method of cost allocation: costs are allocated based on the amount of sewage actually generated.
- Sewage flow can be regularly monitored and charges adjusted over time.
- Provides flexibility for each jurisdiction to manage sewage flows and realize benefits of reduced flows.

This method can be used to recover operations and maintenance costs. With the consideration of other factors the flow method can also be used to calculate the allocation for capital replacement costs.

3.2 Calculation of flows

The sewage flows from each jurisdiction - West Kelowna, Westbank First Nation and Peachland – have been calculated using 2008 and 2009 data from the following stations:

- East Trunk
- Bayview
- WFN Gravity
- Hitchner
- Pritchard
- Green Bay
- Sunnyside



- Collens Hill
- Casa Loma
- East Boundary
- West Kelowna Gravity

The data was collected directly from the Regional District WWTP computer system. Due to some discrepancies in the data for 2008, this analysis relies more on the data from 2009 than 2008. The 2008 and 2009 data is quite consistent, except for IR#9 flows. The 2009 data is also more useful in that it is more recent than the 2008 data and will more accurately reflect current flows. The flow information and calculation spreadsheet is included in Appendix A.

The Peachland flows are based on the flows from the Peachland trunk (Okanagan Lake Force Main). The Westbank First Nations flows are based on the flows measured at the IR#10 dosing chamber, plus the calculated flows from IR#9. The flows are calculated for IR#9 are as follows:

$$\text{IR \#9 Flows} = \text{East Trunk} + \text{Bayview} + \text{WFN Gravity} - \text{Hitchner} - \text{Pritchard} - \text{Green Bay} - \text{Sunnyside} - \text{Collens Hill} - \text{Casa Loma} - \text{East Boundary} - \text{DWK Gravity}$$

The West Kelowna Flows are calculated as the total flows minus Peachland and Westbank First Nation flows.

The analysis indicates that for 2009 the flows from each jurisdiction are as set out in the table below:

	Sewage flow in cubic metres	Percentage
West Kelowna	2,581,915	74.42%
Westbank First Nation	606,987	17.50%
Peachland	280,295	8.08%
Total	3,469,197	100.00%

The percentage allocation of sewage flows will form the basis for the percentage allocation of operations and maintenance costs.



4.0 Operation and Maintenance Costs

4.1 Introduction

The operations and maintenance costs will be divided into two different categories for the purpose of calculating cost recovery:

- Costs for operations and maintenance of the Treatment Plant.
- Costs for operations and maintenance of major trunks and lift stations owned by the Regional District.

4.2 Treatment Plant

The costs for the treatment plant can be allocated across the three jurisdictions based on the amount of sewage flow.

The projected operating costs for the Treatment Plant for 2010 is: **\$ 2,514,720**

Based on the projected costs, the allocation of costs to each jurisdiction for 2010 is set out in the table below:

	Percentage	Treatment Plant O&M cost allocation for 2010
West Kelowna	74.42%	\$1,871,555
Westbank First Nation	17.50%	\$439,987
Peachland	8.08%	\$203,178
Total	100.00%	\$2,514,720

With the expansion of the treatment plant to complete Stage 3 of the plant, the operations and maintenance costs of the plant will increase in the future. The Regional District will monitor the costs and budget for those increases as the expansion to the plant is completed. Costs will also increase in the future through the normal inflationary increases over time.



This analysis will rely on the 2010 budget figures for calculating the allocation of costs amongst the three jurisdictions.

4.3 Main collection trunks

The Regional District owns all or portions of the following main collection trunks and lift stations:

- East Trunk,
- East Boundary Trunk,
- Lakeview Trunk,
- Casa Loma Trunk,
- Westbank Trunk,
- A portion of the Shannon Lake Trunk,
- The Peachland Okanagan Lake Force Main,
- Casa Loma Lift station,
- East Trunk Lift station

The projected operations and maintenance costs for these trunks and lift stations have only recently (part way through 2009, and in the projected budget for 2010) been calculated separately from the other collection systems and lift stations now owned by the three jurisdictions. Previous figures combined the operations and maintenance costs for the entire system in one fund, so historical information would be difficult to calculate.

The operations and maintenance costs for the trunks and lift stations serving West Kelowna and Westbank First Nation, and the O&M costs for the Okanagan Lake Force Main from Peachland, will be allocated based on flows from the three jurisdictions.

The operations and maintenance costs, as budgeted for 2010 for the trunks serving West Kelowna, and Westbank First Nation is: **\$127,101**

The 2010 budget does not anticipate any work on the Peachland Okanagan Lake Force main, so the costs allocated to Peachland will be treated separately. There may be an opportunity for the Regional District to discuss including the intermittent work on maintenance of the Peachland underwater trunk in the Operating Agreement that the Regional District has with Peachland. The specific and individual nature of this trunk lends itself to being treated separately, rather than being blended into the costs of all the other trunks.



The operations and maintenance costs will be allocated based on the proportion of flow from West Kelowna and Westbank First Nation. Other methods were considered such as the length of major trunk mains and the number of major lift stations in each jurisdiction; however, due to the configuration of the system, this approach would not be equitable. The lines extend in and out of West Kelowna and Westbank First Nation, and the length of line or location of the lift station bears little relation to the benefit to each jurisdiction.

The table below illustrates the cost allocation.

	2009 sewage flows (cubic metres)	Percentage	Allocation of O&M costs
West Kelowna	2,581,915	80.97%	\$102,908
Westbank First Nation	606,987	19.03%	\$24,193
Total	3,188,902	100.00%	\$127,101

4.4 Summary of O&M charges

As a result of the analysis, the charges allocated to the jurisdictions:

- Peachland
- Westbank First Nation
- West Kelowna

using 2010 as an example year, are as set out in the table below:

	Treatment Plant	Major trunks and Lift stations	Total
West Kelowna	\$1,871,555	\$102,908	\$1,974,463
Westbank First Nation	\$439,987	\$24,193	\$464,180
Peachland	\$203,178	Charged separately	\$203,178
Total	\$2,514,720	\$127,101	\$2,641,821



4.5 Enhanced calculations for the future

The Regional District of Central Okanagan can provide enhanced flow data and calculations in the future. The method used in this report is based on calculations from existing pump stations. More refined information can be obtained by establishing flow monitoring in the locations that more readily allow for calculation of the flows from IR#9. This will allow for more accurate calculations of the flow allocation between Westbank First Nation and West Kelowna.

There are four key locations required to measure the flows from IR #9

- Bayview lift station – information comes directly from the station. We understand that the magmeter could be upgraded to record more accurate volumes.
- Gellatly Road Trunk – install a flow monitoring device in the next manhole north of the connection to the East Trunk (Boucherie Road)
- Vintage Hills Trunk - install a flow monitoring device in the next manhole north of the connection to the East Trunk (Boucherie Road)
- East Boundary Trunk- install a flow monitoring device in the next manhole north of the connection to the East Trunk (Boucherie Road). Flows from East Boundary lift station (SCADA data) must be subtracted to separate out West Kelowna flows.

We suggest calculating the flows at least once a year, and potentially twice a year in order to allow timely adjustments to the charges to each jurisdiction. The Regional District could invoice West Kelowna, Westbank First Nation, and Peachland quarterly based on the latest calculated flows, and those charges could be adjusted in subsequent invoices once new flow calculations have been completed.

Each jurisdiction should also review its sewer user fee bylaw regularly enough to allow for shifts in charges from the Regional District, yet also provide for consistency of charges. One way to achieve this would be for Peachland, West Kelowna and Westbank First Nation to create a reserve fund or surplus fund that can absorb the shifts in charges while keeping the user fees more consistent. The Regional District may also wish to consider creating a 3 year running average of the flows and distribution of charges in order to smooth out the year to year variations in flows.



5.0 Capital Replacement

5.1 Introduction

In addition to charging fees for the operations and maintenance costs, the Regional District of Central Okanagan also needs to recover the costs for capital replacement. While DCCs can pay for a portion of the capital costs required to service new growth, they do not pay for the eventual long term replacement of the capital infrastructure. The Regional District needs to recover the replacement costs of the treatment plant as well as the major trunks and lift stations.

5.2 Capital Replacement Philosophy

Arguments can be made for and against recovering capital replacement costs through current fees or taxes. The primary argument for including the cost recovery in current fees is that current users are using up the life of the treatment plant, trunk, or lift station and therefore should pay for the replacement facility. An argument against is that existing users should not have to pay for a plant or lift station they will not use, and that when it requires replacement in the future, the future users can borrow the money and pay for the debt servicing costs while they are using the facility. The answer depends on the Sewer Plant Stakeholder Select Committee's cost recovery philosophy.

A reasonable approach is to allocate anywhere from 100% to 50% of the capital cost recovery of existing assets to existing users. While it would be more fiscally conservative to allocate 100% to existing users, we suggest that a minimum of at least 50% of the capital replacement costs be recovered by existing users, which would leave 50% to be recovered by future users. By recovering a significant amount of capital cost over time, the Regional District will work to attain financial sustainability along with solid stewardship of its capital assets.

This analysis will be prepared using two options:

- Option 1 assumes that current users will pay for 100% of replacing the plant, lift stations and trunks that they are using.
- Option 2 assumes that current users will pay for 50% of replacing the plant, lift stations and trunks that they are using.

Subsequent analysis examined recovering 40% and 30% of the replacement costs, and these figures are provided as well.



The analysis will allocate the replacement costs based on sewage flow. The amount of funds required to be set aside to replace various sewer system components depends on the cost and life of each component. The details are based on the Tangible Capital Asset inventory, and are set out in appendix B.

5.3 Treatment Plant

The Regional District needs to recover the replacement costs of the existing Treatment Plant. The Regional District will also need to plan for recovering the replacement cost of the upcoming plant expansion.

The sum of the annual amounts required to be set aside each year, based on collecting enough money each year of the remaining life of the component (total replacement cost divided by remaining life) is as follows: \$ 1,557,733, or say **\$1,558,000**

The analysis examines recovering 100% and 50% of this cost and the allocation of costs are set out in the table below:

	Percentage	Annual Cost at 100%	Annual Cost at 50%
West Kelowna	74.42%	\$1,159,526	\$579,763
Westbank First Nation	17.50%	\$272,595	\$136,297
Peachland	8.08%	\$125,879	\$62,940
Total	100.00%	\$1,558,000	\$779,000

	Percentage	Annual Cost at 40%	Annual Cost at 30%
West Kelowna	74.42%	\$463,810	\$347,858
Westbank First Nation	17.50%	\$109,038	\$81,778
Peachland	8.08%	\$50,352	\$37,764
Total	100.00%	\$623,200	\$467,400



5.4 Major Trunk lines and lift stations

The Regional District of Central Okanagan needs to recover the costs for trunk lines owned by them and designed to serve West Kelowna and Westbank First Nation. As with the costs for replacing the treatment plant, arguments can be made for and against recovering the capital replacement costs of the major trunks and lift stations through current fees or taxes. As a conservative approach, this analysis proceeds based on the ideal of recovering replacement costs from existing users.

The amount of funds required to be set aside to replace various components in the major trunks and lift stations depends on the cost and life of each component. The details are based on the Tangible Capital Asset inventory, and are set out in appendix B.

Lift stations

The funds required for the Casa Loma and East Trunk lift stations are identified below. The sum of the annual amounts required to be set aside each year, based on collecting enough money each year of the remaining life of the component (total replacement cost divided by remaining life) is as follows: **\$104,000**

The allocation of replacement costs for the Casa Loma, and East Trunk lift stations are set out in the table below:

	Percentage	Annual Cost at 100%	Annual Cost at 50%
West Kelowna	80.97%	\$84,204	\$42,102
Westbank First Nation	19.03%	\$19,796	\$9,898
Total	100.00%	\$104,000	\$52,000

	Percentage	Annual Cost at 40%	Annual Cost at 30%
West Kelowna	80.97%	\$33,682	\$25,261
Westbank First Nation	19.03%	\$7,918	\$5,939
Total	100.00%	\$41,600	\$31,200



Peachland Okanagan Lake Force Main

The annual costs for replacing the Peachland Okanagan Lake force main is calculated separately. With a calculated replacement cost of \$3,038,449 from the Tangible Capital Asset Inventory and calculated expected remaining useful life or 59 years, this results in an annual amount required of \$51,499.

Major Trunk Lines

The funds required for the major trunk lines and portions of trunk lines that are owned by the Regional District including the Shannon Lake Trunk, East Trunk, East Boundary Trunk, Lakeview Trunk, Casa Loma Trunk, and Westbank Trunk are identified below.

The sum of the annual amounts required to be set aside each year, based on collecting enough money each year of the remaining life of the component (total replacement cost divided by remaining life) is as follows: \$ 190,222 or say \$190,000

As with the Treatment Plant, this analysis proceeds assuming the costs will be collected over the remaining life of the component, with the option of either collecting 100% of the capital cost or 50% of the capital cost. The results are set out in the table below:

	Percentage	Annual Cost at 100%	Annual Cost at 50%
West Kelowna	80.97%	\$153,835	\$76,917
Westbank First Nation	19.03%	\$36,165	\$18,083
Total	100.00%	\$190,000	\$95,000

	Percentage	Annual Cost at 40%	Annual Cost at 30%
West Kelowna	80.97%	\$61,534	\$46,150
Westbank First Nation	19.03%	\$14,466	\$10,850
Total	100.00%	\$76,000	\$57,000



5.5 Summary allocation of capital replacement costs

The analysis indicates that annual charges to each jurisdiction are required in order to recover costs to replace capital infrastructure. The amounts that each jurisdiction should contribute, based on 100% are as follows:

	Treatment Plant 100%	Major Trunks and Lift Stations 100%	Total
West Kelowna	\$1,159,526	\$238,039	\$1,397,565
Westbank First Nation	\$272,595	\$55,961	\$328,556
Peachland	\$125,879	\$51,499	\$177,378
Total	\$1,558,000	\$345,499	\$1,903,499

The amounts that each jurisdiction should contribute, based on 50% are as follows:

	Treatment Plant 50%	Major Trunks and Lift Stations 50%	Total
West Kelowna	\$579,763	\$119,019	\$698,782
Westbank First Nation	\$136,297	\$27,981	\$164,278
Peachland	\$62,940	\$25,750	\$88,689
Total	\$779,000	\$172,750	\$951,750

	Treatment Plant 40%	Major Trunks and Lift Stations 40%	Total
West Kelowna	\$463,810	\$95,216	\$559,026
Westbank First Nation	\$109,038	\$22,384	\$131,422
Peachland	\$50,352	\$20,599	\$70,951
Total	\$623,200	\$138,200	\$761,400



	Treatment Plant 30%	Major Trunks and Lift Stations 30%	Total
West Kelowna	\$347,858	\$71,412	\$419,269
Westbank First Nation	\$81,778	\$16,788	\$98,567
Peachland	\$37,764	\$15,449	\$53,213
Total	\$467,400	\$103,650	\$571,050



6.0 Summary of allocation of costs

This section summarizes the cost allocation for operations and maintenance and capital replacement.

6.1 Operations and Maintenance

The operations and maintenance costs allocated to each jurisdiction is set out in the table below.

	Treatment Plant	Major trunks and Lift stations	Total
West Kelowna	\$1,871,555	\$102,908	\$1,974,463
Westbank First Nation	\$439,987	\$24,193	\$464,180
Peachland	\$203,178	Charged separately	\$203,178
Total	\$2,514,720	\$127,101	\$2,641,821

6.2 Capital Replacement

The capital replacement costs allocated to each jurisdiction is set out in the table below.

	Total at 100%	Total at 50%
West Kelowna	\$1,397,565	\$698,782
Westbank First Nation	\$328,556	\$164,278
Peachland	\$177,378	\$88,689
Total	\$1,903,499	\$951,750

	Total at 40%	Total at 30%
West Kelowna	\$559,026	\$419,269
Westbank First Nation	\$131,422	\$98,567
Peachland	\$70,951	\$53,213
Total	\$761,400	\$571,050



6.3 Total O&M and Capital Replacement

A summary of both the Operations and Maintenance charges and the capital replacement charges are set out in the table below:

	Total, with 100% capital recovery	Total, with 50% capital recovery
West Kelowna	\$3,372,028	\$2,673,246
Westbank First Nation	\$792,736	\$628,458
Peachland	\$380,556	\$291,867
Total	\$4,545,320	\$3,593,571

	Total, with 40% capital recovery	Total, with 30% capital recovery
West Kelowna	\$2,533,489	\$2,393,733
Westbank First Nation	\$595,602	\$562,747
Peachland	\$274,129	\$256,391
Total	\$3,403,221	\$3,212,871



7.0 Comparison of Potential and Existing Charges

This section compares the potential charges and flow allocation with the allocation of existing charges amongst the three jurisdictions.

7.1 Comparison of percentage distribution of 2009 charges and flows

It will be useful to compare the percentage distribution of 2009 charges with the percentage distribution of sewage flows, which forms the basis of the proposed distribution method.

The sewer user fees charges collected by the Regional District for 2009 are as follows:

	Percentage	2009 Sewer user fees collected
West Kelowna	72.7%	\$2,626,876
Westbank First Nation	16.6%	\$598,327
Peachland	10.7%	\$386,219
Total	100.0%	\$3,613,431

The comparison of fee percentages and flow percentages is set out below

	Percentage of Fees collected 2009	Percentage of Calculated Sewage Flows 2009
West Kelowna	72.7%	74.42%
Westbank First Nation	16.6%	17.50%
Peachland	10.7%	8.08%
Total	100.0%	100.00%

The comparison demonstrates that the flow percentages are very close to the fee percentages, which should mean that the transition to a flow-based approach should not result in significant changes to the amount of revenues that each jurisdiction needs to generate.



7.2 Comparison of Charges

A comparison of the potential charges with the current 2009 charges is set out below.

The comparison using 100% capital recovery is as follows:

	Potential charges with O&M and 100% capital recovery	2010 budget for local lift stations and collectors	Total potential charges	2009 Sewer user fees collected ^a
West Kelowna	\$3,372,028	\$369,859 ^b	\$3,741,887 ^c	\$2,626,876
Westbank First Nation	\$792,736	\$83,306	\$876,042	\$598,327
Peachland	\$380,556	\$107,313	\$487,869 ^d	\$386,219
Total	\$4,545,320	\$560,478	\$5,105,798	\$3,613,431

a – The 2009 user fees included charges for the Regional District to maintain the local lift stations and sewer collector lines for West Kelowna, Westbank First Nation, and Peachland.

b - West Kelowna has decided to maintain the lift stations and collectors, but this budget item was prepared before the decision was made and is useful for comparison purposes

c - Includes costs that would have been allocated to West Kelowna for maintenance of local lift stations and collection lines for consistent comparison purposes with 2009 figures.

d – Does not include costs for O&M of the Okanagan Lake Force Main.

The figures indicate that the potential charges at 100% capital recovery are higher, by about 40%, than the 2009 user fees collected. This is a significant increase and may generate concerns from the local jurisdictions.

In order to compare potential charges with charges levied in 2009 there are number of items that need to be kept in mind for both the 100% and the 50% examples:

- The charges in the first column include O&M and capital recovery for the treatment plant and the major lift stations and trunk lines owned by the Regional District of Central Okanagan.
- The first column does not include charges for O&M of sewer system components owned by Peachland, West Kelowna or Westbank First Nation such as lift stations and sewer lines.
- The second column includes 2010 budget estimates for the Regional District costs for O&M on the lift stations and sewer lines for Peachland, West Kelowna and Westbank First Nation. This column is included to allow for an “apples to apples” comparison between 2009 figures and potential 2010 figures.



- The user fees collected in 2009 paid for O&M of the components owned by Peachland, West Kelowna and Westbank First Nation, as well as the components owned by the Regional District.
- In the second and third columns, the budgeted amounts for West Kelowna local lift stations and collectors are included to allow for an “apples to apples” comparison, even though that amount is not being charged to West Kelowna since West Kelowna has recently taken over O&M of local lift stations and collectors. [Note: it would not be an accurate comparison, however, if this figure was excluded, because it would show that the comparative total figure for 2010 as significantly lower, which is not really the case since this cost has simply been taken on by West Kelowna as they have taken over the responsibility].
- The capital recovery costs for the Peachland Okanagan Lake Force Main are allocated entirely to Peachland, and in the 2010 budget there are no O&M costs. Indeed, the O&M costs for the Peachland Force Main could potentially be included in the operating agreement in the future, based on discussions between Peachland and the Regional District. No O&M costs for the Peachland Okanagan Lake Force Main are included in these tables.

The comparison using 50% capital recovery is as follows:

	Potential Charges with O&M and 50% capital recovery	2010 budget for Local lift stations and collectors	Total Potential Charges	2009 Sewer user fees collected ^a
West Kelowna	\$2,673,246	\$369,859 ^b	\$3,043,105 ^c	\$2,626,876
Westbank First Nation	\$628,458	\$83,306	\$711,764	\$598,327
Peachland	\$291,867	\$107,313	\$399,180 ^d	\$386,219
Total	\$3,593,571	\$560,478	\$4,154,049	\$3,613,431

a – The 2009 user fees included charges for the Regional District to maintain the Local lift stations and sewer collector lines for West Kelowna, Westbank First Nation, and Peachland.

b - West Kelowna has decided to maintain the lift stations and collectors, but this budget item was prepared before the decision was made and is useful for comparison purposes

c - Includes costs that would have been allocated to West Kelowna for maintenance of local lift stations and collection lines for consistent comparison purposes with 2009 figures.

d – Does not include costs for O&M of the Okanagan Lake Force main



The figures indicate that at 50% capital recovery, the potential charges are somewhat higher, by about 15% to 20% above the current charges. The exception is Peachland, which is within about 3% of the current charges, however those charges do not include O&M costs for the Okanagan Lake Force Main. This is an interesting conclusion indicating that, even though the existing method may have flaws in terms of the allocation of charges to individual users, it generates aggregate charges that are somewhat consistent with sewage flows.

This approach, however, only allows for the recovery of 50% of the capital costs, which is the minimum level suggested. One approach to consider is gradually increasing the percentage of capital costs recovered over time from the 50% to a higher level, such as 70% or 80%, in order to be more financially sustainable and avoid transferring significant capital replacement costs to future generations.

Comparisons using 40% capital cost recovery

	Potential Charges with O&M and 40% capital recovery	2010 budget for Local lift stations and collectors	Total Potential Charges	2009 Sewer user fees collected^a
West Kelowna	\$2,533,489	\$369,859 ^b	\$2,903,348 ^c	\$2,626,876
Westbank First Nation	\$595,602	\$83,306	\$678,908	\$598,327
Peachland	\$274,129	\$107,313	\$381,442 ^d	\$386,219
Total	\$3,403,221	\$560,478	\$3,963,699	\$3,613,431

a – The 2009 user fees included charges for the Regional District to maintain the Local lift stations and sewer collector lines for West Kelowna, Westbank First Nation, and Peachland.

b - West Kelowna has decided to maintain the lift stations and collectors, but this budget item was prepared before the decision was made and is useful for comparison purposes

c - Includes costs that would have been allocated to West Kelowna for maintenance of local lift stations and collection lines for consistent comparison purposes with 2009 figures.

d – Does not include costs for O&M of the Okanagan Lake Force main



Comparisons using 30% capital cost recovery

	Potential Charges with O&M and 30% capital recovery	2010 budget for Local lift stations and collectors	Total Potential Charges	2009 Sewer user fees collected^a
West Kelowna	\$2,393,733	\$369,859 ^b	\$2,763,592 ^c	\$2,626,876
Westbank First Nation	\$562,747	\$83,306	\$646,053	\$598,327
Peachland	\$256,391	\$107,313	\$363,704 ^d	\$386,219
Total	\$3,212,871	\$560,478	\$3,773,349	\$3,613,431

a – The 2009 user fees included charges for the Regional District to maintain the Local lift stations and sewer collector lines for West Kelowna, Westbank First Nation, and Peachland.

b - West Kelowna has decided to maintain the lift stations and collectors, but this budget item was prepared before the decision was made and is useful for comparison purposes

c - Includes costs that would have been allocated to West Kelowna for maintenance of local lift stations and collection lines for consistent comparison purposes with 2009 figures.

d – Does not include costs for O&M of the Okanagan Lake Force main



8.0 Conclusions

The conclusions of this report are as follows:

- Sewage flows provide the basis for the most appropriate method for allocating costs amongst the three jurisdictions of West Kelowna, Westbank First Nation, and Peachland. This allows each individual jurisdiction to use its own methods for recovering the costs within its boundaries. It also rewards jurisdictions for reducing the amount of sewage generated in their area.
- The percentage allocation of costs, based on 2009 flows should be as follows:

	Percentage flow and cost allocation
West Kelowna	74.4%
Westbank First Nation	17.5%
Peachland	8.1%
Total	100.0%

- The Regional District should calculate sewage flows at least annually and potentially twice a year in order to calibrate the charges to the three jurisdictions.
- Each jurisdiction should review its sewer user fee bylaw regularly enough to allow for shifts in charges from the Regional District, yet also provide for consistency of charges. One way to achieve this would be for Peachland, West Kelowna and Westbank First Nation to create a reserve fund or surplus fund that can absorb the shifts in charges while keeping the user fees more consistent.
- The Regional District may also wish to consider creating a 3 year running average of the flows and distribution of charges in order to smooth out the year to year variations in flows.
- The Regional District should install additional sewage flow monitoring devices in specific locations to enhance the measurements of flows from IR#9.



- The O&M for collection system components owned by West Kelowna, Peachland and Westbank First Nation are not addressed by this analysis, and the cost recovery for these local collection and lift station components need to be addressed separately.
- In addition to recovering operations and maintenance costs, the Regional District should also recover funds to replace existing capital assets.
- The Regional District should recover from existing users, at a minimum, 50% of the funds required to replace capital assets, with a shift towards recovering a higher percentage over time.
- By recovering all of the operations and maintenance costs and starting to recover a minimum of 50% of the capital replacement costs, the potential charges to each jurisdiction will be somewhat higher than the current charges to each jurisdiction. This will result in an increase in charges from the Regional District in the transition from the current form of fee allocation (tables with specific charges for each use) to the proposed form (charges to each jurisdiction based on sewage flows).
- By recovering 40% or 30% of the capital replacement costs, the combined potential charges are closer to the equivalent amounts currently charged to each jurisdiction.

APPENDIX A

- **Expenditures and Revenues**
- **Operations and Maintenance costs**
- **Sewage Flow Spreadsheet**

Regional District of Central Okanagan
Budget List By Function



Account Code : ??-?-????-??? To : ??-?-????-???

Function Type : Selective

SEWER REVENUE FUND
401 - WESTSIDE SEWER SYSTEM

		2008	2009	2009	2010
		Actual Value	Actual Value	Budget Value	Provisional
REVENUES					
07-1-3320-032	O.B.W.B. SEWER GRANTS	86,356	-4,314	-3,803	0
07-1-3370-036	PARCEL TAXES - WFN	-34,566	-11,008	-9,449	0
07-1-4400-106	SEWER USER FEES	-3,143,458	-3,604,904	-3,259,449	-3,700,000
07-1-5500-351	M.F.A. CASH RESERVE REFUN	0	-18,008	0	0
07-1-8210-822	PARCEL TAX - PEACHLAND	-2,502	-1,393	-1,402	0
07-1-8410-842	PARCEL TAX - WEST KELOWN	-38,887	-7,511	-7,511	0
07-1-9110-099	PREVIOUS YEARS SURPLUS-	-264,183	-85,057	-297,240	25,029
07-1-9210-719	ADMINISTRATION OVERHEAD	270,858	268,251	268,251	365,388
	Total REVENUES	-3,126,382	-3,463,944	-3,310,603	-3,309,583
EXPENSES					
07-2-4200-111	SALARIES - FULL TIME	490,352	517,139	505,000	437,087
07-2-4200-112	SALARIES - PART TIME	43,297	42,775	38,000	23,904
07-2-4200-113	SALARIES - OVERTIME	45,579	37,509	35,000	35,000
07-2-4200-124	STANDBY WAGES	0	0	0	30,000
07-2-4200-140	PAYROLL OVERHEAD	135,211	147,393	145,760	129,738
07-2-4200-201	TRAVEL	1,456	1,390	2,500	2,500
07-2-4200-205	TRAINING & EDUCATION	12,937	10,044	10,000	12,000
07-2-4200-209	PERMITS & LICENCES	25	3,066	5,000	5,000
07-2-4200-211	TELEPHONE	34,267	54,621	28,000	40,000
07-2-4200-212	POSTAGE	0	14	100	100
07-2-4200-215	ADVERTISING	84	584	100	500
07-2-4200-216	INSURANCE	100,280	97,738	97,738	101,803
07-2-4200-234	ALUM	93,494	149,975	90,000	150,000
07-2-4200-235	POLYMER CHEMICALS	0	0	0	50,000
07-2-4200-250	GOODS AND SUPPLIES	9,997	8,445	9,500	5,000
07-2-4200-251	OFFICE SUPPLIES	10,128	1,841	2,000	2,000
07-2-4200-266	LAB SUPPLIES	75,951	84,579	85,000	35,000
07-2-4200-267	U.V. LIGHTING	22,153	22,382	25,000	25,000
07-2-4200-268	SAFETY SUPPLIES	4,316	6,400	4,000	6,000
07-2-4200-269	CHLORINE & SO2 GAS	7,600	0	0	0
07-2-4200-270	HARDWARE	357	0	0	0
07-2-4200-271	JANITORIAL SUPPLIES	2,368	1,115	2,000	1,500
07-2-4200-272	SMALL TOOLS	15,353	7,992	10,000	6,500
07-2-4200-277	ELECTRICAL REPAIRS & MTCI	94,756	64,359	65,000	50,000
07-2-4200-302	LEGAL FEES	0	6,490	0	0
07-2-4200-308	STATUTORY RIGHT-OF-WAY	606	0	1,000	0
07-2-4200-311	MEMBERSHIPS	1,272	3,441	1,500	3,200
07-2-4200-313	GENERAL CONSULTING	32,694	4,608	60,000	150,000
07-2-4200-322	GROUNDS MAINTENANCE	35,251	1,365	2,000	2,000
07-2-4200-411	ELECTRICITY - PLANT	188,152	142,368	193,800	140,000
07-2-4200-412	WATER RATES	446	760	500	1,000
07-2-4200-414	GARBAGE PICK-UP	14,525	17,021	13,263	13,500
07-2-4200-415	NATURAL GAS - PLANT	42,707	56,307	43,990	45,000
07-2-4200-421	TIPPING FEES - SLUDGE DISP	0	117,142	75,000	275,000
07-2-4200-422	MINISTRY OF ENVIRONMENT	25,740	20,240	25,164	25,000
07-2-4200-423	PLANT REPAIR & MTCE	10,033	6,283	10,000	10,000
07-2-4200-424	SEWER LINE MTCE & FLUSHIN	125,475	185,229	125,475	15,000
07-2-4200-425	SLUDGE REMOVAL	47,025	62,750	47,025	110,000
07-2-4200-447	MECHANICAL REPAIRS & MTC	37,627	44,340	55,000	45,000
07-2-4200-449	EQUIPMENT	4,028	4,805	5,000	5,000
07-2-4200-450	EQUIPMENT REPAIRS & MTCE	48,344	70,598	50,000	40,000
07-2-4200-452	EQUIPMENT RENTAL	7,600	7,354	7,000	7,500

Regional District of Central Okanagan
Budget List By Function



GL5260

Page : 2

Date : May 14, 2010

Time : 1:38 pm

Account Code : ??-?-????-???

To : ??-?-????-???

Function Type : Selective

SEWER REVENUE FUND
401 - WESTSIDE SEWER SYSTEM

		2008	2009	2009	2010
		Actual Value	Actual Value	Budget Value	Provisional
07-2-4200-454	ENGINEERING	4,462	0	0	0
07-2-4200-455	ODOR CONTROL	0	0	0	55,000
07-2-4200-458	LIFT STATIONS - UTILITIES	54,013	87,280	56,555	0
07-2-4200-459	LIFT STATIONS - REPAIRS & M	66,115	90,681	65,000	0
07-2-4200-470	RDCO LIFT STATIONS/COLLEC	0	0	0	127,101
07-2-4200-471	WFN LIFT STATIONS/COLLEC	0	0	0	83,306
07-2-4200-472	PEACHLAND LIFT STATIONS/C	0	0	0	107,313
07-2-4200-473	WEST KELOWNA LIFT STATIO	0	0	0	369,859
07-2-4200-475	VEHICLE OPERATIONS	55,223	56,890	55,000	45,000
07-2-4200-485	CONTRACT SERVICES	19,447	17,659	10,000	12,000
07-2-4200-487	SECURITY SERVICES	1,349	1,544	1,500	1,500
07-2-8110-551	M.F.A. INTEREST	44,330	22,165	22,165	0
07-2-8110-552	M.F.A. PRINCIPAL	20,625	0	0	0
07-2-8210-507	TRSFER TO CAP. FAC. RES. FU	635,466	824,968	824,968	0
07-2-8220-502	TRANSFER TO CAPITAL	318,808	377,326	400,000	472,672
Total EXPENSES		3,041,326	3,488,973	3,310,603	3,309,583

**REGIONAL DISTRICT OF CENTRAL OKANAGAN
2010 - 2014 Five Year Program Budget Projections**

Program:

401 -- Westside Sewer System

Department:

Environmental Services (Engineering)

General Revenue Fund Budgets

	2010 Budget	2011 Projected Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget
Revenue:					
Fees & Misc. Revenue	(3,700,000) i	(3,590,000) i	(3,790,000) d	(3,990,000) d	(4,190,000) d
Parcel Tax	0	0	0	0	0
Previous Year's Surplus/Deficit	25,029	(0)	0	0	(0)
Administration OH	365,388	372,694	380,148	387,751	395,506
Total Revenue	(3,309,583)	(3,217,306)	(3,409,852)	(3,602,249)	(3,794,494)
Expenses:					
Operations	2,149,332 a	2,192,319 c	2,236,165	2,280,888	2,326,506
Ops - RDCO Lift Stns / Collectors	127,101 b	129,643	132,236	134,881	137,578
Ops - WFN Lift Stns / Collectors	83,306 b	84,972	86,672	88,405	90,173
Ops - Peach. Lift Stns / Collectors	107,313 b	109,459	111,648	113,881	116,159
Ops - WK Lift Stns / Collectors	369,859 b,i	0 i	0	0	0
Debt Payments - Plant	0	46,413	118,483 d	889,929 e,h	815,321 e
Transfer to Capital	472,672	587,244	649,846	0	0
Transfer Cap. Facility Reserves	0	67,256	74,802	94,264	308,757 e
Total Expenses	3,309,583	3,217,306	3,409,852	3,602,248	3,794,494
(Surplus) / Deficit	(0)	0	0	(0)	0
FTE's	8.91	8.91	8.91	8.91	8.91

General Capital Fund Budgets

	2010 Budget	2011 Projected Budget	2012 Projected Budget	2013 Projected Budget	2014 Projected Budget
Revenue					
Grants	(2,500,000)	(2,500,000)	0	0	0
Sale of Assets	(35,000)	0	0	0	0
Capital Financing	0	(2,282,756)	(2,150,154) h	0	0
From Equipment Reserves	(580,000)	(200,000)	0	0	0
From Capital Facility Reserves	0	(1,470,000)	0	0	0
From DCC Reserve Fund	(1,191,328)	(3,360,000)	(800,000)	0	0
From Sewer Revenue Fund	(472,672)	(587,244)	(649,846)	0	0
Total Revenue	(4,779,000)	(10,400,000)	(3,600,000)	0	0
Expenses					
Lab Equipment	15,000	0	0	0	0
Service Air Compressor	14,000	0	0	0	0
Communic./Electrical Standardiz.	65,000	0	0	0	0
Vehicles	135,000	0	0	0	0
Biosolids Facility	450,000 c	1,000,000	0	0	0
Stage 3 Engineering and Design	1,000,000	400,000	100,000	0	0
Stage 3 Construction Costs	3,100,000	9,000,000	3,500,000	0	0
Total Expenses	4,779,000	10,400,000	3,600,000	0	0
(Surplus) / Deficit	0	0	0	0	0
Equip. Reserve Fund Balance at Y/E	(247,552)	(48,028)	(48,508)	(48,993)	(49,483)
Capital Facility Reserve Bal. at Y/E	(1,482,324)	(80,376)	(156,730)	(253,504)	(567,884)
DCC Reserve Fund	(2,573,782) f	(13,782) g	(13,920) g	(22,059) g,h	(830,280)
East Trunk Line DCC Reserve Fund	(1,047,123)	(1,177,595)	(1,309,371)	(1,442,464)	(1,576,889)

Notes

- a. Increases for Utilities, Chemicals, Vehicle Operations, Biosolids disposal.
- b. Started breaking out costs for lift stations and collector systems by area. (These costs include Admin. OH).
- c. Biosolids Planning & Facility.
- d. Assumes 5 year financing will be done in spring of 2012 - 1st payment only for interest and for 2013 short term financing.
- e. We would attempt to get permission to utilize future DCC's to pay the debt down sooner, and utilize the funds that are shown as available for reserve transfers in 2013 & 2014 to pay the debt down instead of building reserves.
- f. Assumes \$1.4 million contributed to DCC's (higher due to WFN development).
- g. Assumes \$.8 million in DCC's are collected each year.
- h. Assumes 5 year financing will be completed in spring of 2013. (Will use DCC's collected in 2013 to pay down debt prior to financing.)
- i. West Kelowna have indicated they will be taking over this service May 15th. The entire annual amount of revenues and costs has been budgeted here in case the deadline is delayed. Proportionate revenues relating to the costs incurred up to the time of transfer will remain with this budget

2008 flow data (flows in cubic meters)

#####																	Station Sum
Month	WWTP	Peachland	IR #10	IR #9	DoWK	East Trunk	Bayview	WFN Gravity	Hitchner	Pritchard	Green Bay	Sunnyside	Collens Hill	Casa Loma	East Boundary	DoWK Gravity	Station Sum
January	272,936.98	22,164.93	5,410.95	27,464.94	217,896.16	123,939.15	12,301.50	2,009.41	2,254.00	1,893.80	7,942.70	2,071.20	2,194.28	10,468.35	47,702.00	36,258.78	210,766.99
February	251,815.07	20,927.24	6,015.50	26,187.75	198,684.59	119,973.10	11,535.09	1,955.55	2,284.59	1,825.10	7,013.90	1,825.00	2,391.88	10,592.58	46,056.00	35,286.94	203,497.24
March	272,825.89	21,478.71	6,602.02	26,097.68	218,647.48	128,242.71	10,533.27	2,070.98	2,400.51	2,118.60	7,701.40	1,934.50	2,414.98	11,567.42	49,242.00	37,369.87	216,155.39
April	268,181.52	22,479.97	5,488.06	21,520.69	218,692.79	120,622.73	10,004.04	1,975.69	2,054.36	1,981.40	7,957.20	1,822.40	2,604.88	10,528.07	48,483.00	35,650.46	206,058.07
May	293,857.10	23,778.73	6,060.33	25,540.61	238,477.43	136,635.04	14,986.59	2,205.99	2,004.45	2,251.30	9,133.80	1,904.70	2,687.50	11,270.70	59,228.52	39,806.04	240,102.61
June	299,461.82	24,703.91	6,044.14	22,357.51	246,356.25	146,936.45	14,227.26	2,366.64	1,983.52	4,026.40	9,250.80	1,873.40	2,633.75	11,779.14	66,921.00	42,704.82	259,631.73
July	303,514.49	27,610.08	5,535.83	19,291.26	251,077.31	146,744.77	12,885.60	2,466.82	2,105.88	4,558.40	11,354.20	2,192.90	2,528.40	12,197.66	63,355.85	44,512.64	257,923.65
August	312,512.52	29,557.67	6,594.33	23,332.56	253,027.95	158,600.66	16,025.58	2,655.69	2,121.98	4,218.20	12,425.40	2,416.00	2,779.30	13,598.35	68,469.49	47,920.64	280,654.96
September	294,658.24	24,154.41	6,163.56	33,094.90	231,245.37	146,455.35	16,922.97	2,278.06	1,891.75	2,699.30	7,716.80	1,996.80	2,728.98	12,273.75	62,147.57	41,106.54	254,833.27
October	297,617.47	24,075.92	6,808.57	27,310.15	239,422.83	146,041.98	16,381.35	2,314.26	1,843.45	2,618.10	8,897.00	1,967.90	2,703.79	12,446.80	65,190.71	41,759.70	258,091.08
November	268,145.84	22,738.39	6,574.93	25,383.29	213,449.22	125,394.39	15,117.57	2,069.08	1,830.57	2,303.80	6,859.30	1,963.50	2,048.69	11,807.23	53,049.16	37,335.50	220,374.20
December	249,375.63	22,599.17	6,839.75	42,273.37	177,663.33	144,364.64	15,722.27	2,128.89	2,031.82	2,172.70	7,285.20	2,038.20	1,983.89	12,436.14	53,579.65	38,414.83	241,614.52
Total	3,384,902.56	286,269.14	74,137.97	319,854.72	2,704,640.73	1,643,950.97	166,643.09	26,497.05	24,806.88	32,667.10	103,537.70	24,006.50	29,700.33	140,966.19	683,424.94	478,126.75	2,849,703.70
Percentage	100.0%	8.5%	2.2%	9.4%	79.9%												

2009 flow data (flows in cubic meters)

#####																	Station Sum
Month	WWTP	Peachland	IR #10	IR #9	DoWK	East Trunk	Bayview	WFN Gravity	Hitchner	Pritchard	Green Bay	Sunnyside	Collens Hill	Casa Loma	East Boundary	DoWK Gravity	Station Sum
January	272,936.98	24,063.98	5,487.91	33,497.10	209,888.00	134,521.66	16,924.74	2,009.41	2,010.19	1,912.50	8,921.80	1,912.20	2,010.19	11,875.05	55,058.01	36,258.78	235,146.34
February	242,677.24	19,169.03	5,599.65	40,669.95	177,238.62	129,424.21	15,680.43	1,955.55	1,959.89	2,068.95	5,894.80	1,759.50	1,959.89	10,182.93	47,277.34	35,286.94	216,207.94
March	281,048.06	20,493.53	6,441.33	48,693.06	205,420.14	144,646.97	21,087.78	2,070.98	2,131.69	2,394.70	8,565.60	2,026.70	2,131.71	11,714.95	52,777.44	37,369.87	247,477.54
April	278,568.01	21,071.22	6,591.37	41,487.46	209,417.96	144,749.07	12,921.00	1,975.69	2,018.49	2,396.20	8,850.10	2,031.30	1,942.69	12,163.62	53,105.43	35,650.46	240,177.91
May	302,116.46	23,118.89	6,413.26	40,346.90	232,237.42	153,670.72	14,954.73	2,205.99	2,267.80	2,487.10	10,158.73	2,239.60	2,267.82	12,029.92	59,227.52	39,806.04	259,303.95
June	302,427.04	23,913.28	6,689.17	34,716.74	237,107.84	157,389.53	11,779.35	2,366.64	2,217.20	4,448.12	10,288.86	2,263.60	2,217.20	12,422.97	60,256.01	42,704.82	263,282.84
July	293,314.97	26,229.74	7,091.50	41,619.59	218,374.15	172,321.55	12,319.20	2,466.82	2,188.69	5,035.84	12,628.29	2,352.80	2,129.09	13,989.19	62,651.44	44,512.64	285,616.10
August	338,629.90	27,632.21	6,819.33	49,700.50	254,477.86	187,605.59	14,398.95	2,655.69	2,728.98	4,660.01	13,819.70	2,614.50	2,728.98	14,284.29	66,202.64	47,920.64	309,043.63
September	302,436.35	23,896.68	6,871.14	53,391.49	218,277.04	169,390.26	16,083.99	2,278.06	2,148.53	2,982.02	6,102.50	2,293.16	2,321.38	13,459.95	63,946.74	41,106.54	278,728.53
October	311,743.50	29,487.21	7,000.74	49,620.38	225,635.17	165,339.73	15,869.82	2,314.26	2,084.08	2,892.32	7,035.81	2,259.97	2,298.17	13,087.91	62,485.47	41,759.70	273,353.28
November	281,840.53	20,429.56	6,587.23	47,148.49	207,675.25	148,679.37	14,821.98	2,069.08	2,063.24	2,545.10	5,424.38	2,254.92	1,746.61	11,998.36	55,053.83	37,335.50	244,587.79
December	261,457.85	20,789.60	7,116.59	47,385.75	186,165.91	151,198.87	15,358.29	2,128.89	2,290.19	2,400.27	5,761.19	2,340.70	1,694.21	13,012.15	55,386.75	38,414.83	249,442.63
Total	3,469,196.90	280,294.92	78,709.21	528,277.40	2,581,915.36	1,858,937.53	182,200.26	26,497.05	26,108.97	36,223.14	103,451.77	26,348.95	25,447.94	150,221.29	693,428.63	478,126.75	3,102,368.48
Percentage	100.0%	8.3%	2.3%	15.6%	76.3%												

IR #9 Flows = East Trunk + Bayview + WFN Gravity - Hitchner - Pritchard - Green Bay - Sunnyside - Collens Hill - Casa Loma - East Boundary - DoWK Gravity

Some of the 2008 data is questionable (such as Pritchard and Green Bay) as observed by the varied values for IR #9

Populations

Peachland (2006 Census data)	4,885	13.94%	
IR #9 (2006 Census data)	5,175	14.77%	
IR #10 (2006 Census data)	1,040	2.97%	
DoWK	8731 SF * 2.6 + 776 * 1.6	23,942	68.32%
		35,042	

	Population	2008			2009		
		Flow	Flow/Capita	L/cap/day	Flow	Flow/Capita	L/cap/day
WWTP	35,042	3,384,902.56	96.60	264.65	3,469,196.90	99.00	271.24
Peachland	4,885	286,269.14	58.60	160.55	280,294.92	57.38	157.20
IR #10	1,040	74,137.97	71.29	195.31	78,709.21	75.68	207.35
IR #9	5,175	319,854.72	61.81	169.34	528,277.40	102.08	279.68
DoWK	23,942	2,704,640.73	112.97	309.50	2,581,915.36	107.84	295.45

DoWK	2,581,915.36	74.4%
WFN	606,986.62	17.5%
Peachland	280,294.92	8.1%
	3,469,196.90	100.0%

APPENDIX B

Tangible Capital Asset Information

Asset Id	Asset Description	Enter Financial Stmt Category	Financial Statements Category	Year Asset Was In Service	Expected Useful Life	Actual Historical Cost	Current Reproduction or Replacement Cost	Estimated Salvage Value	Choose Index CPI = 1 ENR = 2 1st Other = 3 2nd Other = 4 Default = 1	Calculated Expected Useful Life Remaining	Calculated Historical Cost	Calculated Straight Line Depreciation for the Year 2008	Calculated Accumulated Straight Line Depreciation to 2008 Year End	Net Book Value to 2008 Year End	Index Value for Asset	Current Year Index Value	Funding required per year for cost recovery (Original Life)	Funding required per year for cost recovery (remaining life)
STP	Headworks, odour control control gate, screens, etc.	5	Infrastructure - Sewer	1994	25	0	1,200,000	0	2	10	777,384	31,095	466,430	310,954	5408	8348	48000	120000
STP	Grit Removal	5	Infrastructure - Sewer	1994	25	0	1,800,000	0	2	10	1,166,076	46,643	699,645	466,430	5408	8348	72000	180000
STP	Primary Clarifiers Existing	5	Infrastructure - Sewer	1994	50	0	1,860,000	0	2	35	1,204,945	24,099	361,483	843,461	5408	8348	37200	53143
STP	Primary Clarifiers New	5	Infrastructure - Sewer	2005	50	0	1,080,000	0	2	46	963,306	19,266	77,064	886,242	7446	8348	21600	23478
STP	Bioreactors	5	Infrastructure - Sewer	1994	50	0	3,480,000	0	2	35	2,254,413	45,088	678,324	1,578,089	5408	8348	69600	99429
STP	Bioreactors	5	Infrastructure - Sewer	2005	50	0	3,480,000	0	2	46	3,103,987	62,080	248,319	2,855,668	7446	8348	69600	75652
STP	Secondary Clarifiers	5	Infrastructure - Sewer	1988	50	0	240,000	0	2	29	129,819	2,598	54,566	75,353	4519	8348	4800	8276
STP	Secondary Clarifiers	5	Infrastructure - Sewer	1994	50	0	2,040,000	0	2	35	1,321,552	26,431	396,466	925,087	5408	8348	40800	58286
STP	Secondary Clarifiers	5	Infrastructure - Sewer	2005	50	0	2,040,000	0	2	46	1,819,578	36,392	145,566	1,674,012	7446	8348	40800	44348
STP	Existing building and filters	5	Infrastructure - Sewer	1994	50	0	1,980,000	0	2	35	1,282,683	25,654	384,805	897,878	5408	8348	39600	56571
STP	New effluent filters and building	5	Infrastructure - Sewer	2005	50	0	1,500,000	0	2	46	1,337,925	26,759	107,034	1,230,891	7446	8348	30000	32609
STP	Existing disinfection equipment (2 x new \$)	5	Infrastructure - Sewer	1994	25	0	840,000	0	2	10	544,169	21,767	326,501	217,667	5408	8348	33600	84000
STP	New disinfection equipment +channel modifications	5	Infrastructure - Sewer	2005	25	0	420,000	0	2	21	374,619	14,985	95,939	314,680	7446	8348	16800	20000
STP	Existing Fermenters	5	Infrastructure - Sewer	1994	50	0	660,000	0	2	35	427,561	8,551	128,268	299,293	5408	8348	13200	18857
STP	New Fermenters	5	Infrastructure - Sewer	2005	50	0	660,000	0	2	46	588,687	11,774	47,095	541,592	7446	8348	13200	14348
STP	Storage Tanks, DAF, centrifuge, Alum, Blowers	5	Infrastructure - Sewer	2005	25	0	2,400,000	0	2	21	2,140,680	85,627	342,509	1,798,172	7446	8348	96000	114286
STP	PS Pump	5	Infrastructure - Sewer	2005	25	0	180,000	0	2	21	160,551	6,422	25,688	134,863	7446	8348	7200	8571
STP	WAS Pumps	5	Infrastructure - Sewer	2005	25	0	240,000	0	2	21	214,068	8,563	34,251	179,817	7446	8348	9600	11429
STP	RAS Pump	5	Infrastructure - Sewer	2005	25	0	240,000	0	2	21	214,068	8,563	34,251	179,817	7446	8348	9600	11429
STP	Process Piping/Instrumentation	5	Infrastructure - Sewer	2005	25	0	1,320,000	0	2	21	1,177,374	47,095	188,380	988,994	7446	8348	52800	62857
STP	Site and Site Piping	5	Infrastructure - Sewer	1994	50	0	1,200,000	0	2	35	777,384	15,548	233,215	544,169	5408	8348	24000	34286
STP	Roads and Parking	5	Infrastructure - Sewer	1994	50	0	600,000	0	2	35	388,692	7,774	116,608	272,084	5408	8348	12000	17143
STP	Administration Building	5	Infrastructure - Sewer	1994	50	0	4,800,000	0	2	35	3,109,535	62,191	932,861	2,176,675	5408	8348	96000	137143
STP	Fine Screen	5	Infrastructure - Sewer	2007	25	249,750	261,488	0	2	23	249,750	9,990	19,980	229,770	7966	8348	10460	11369
STP	Primary Clarifier	5	Infrastructure - Sewer	2007	50	936,562	980,580	0	2	48	936,562	18,731	37,462	899,100	7966	8348	19612	20429
STP	Fermenter	5	Infrastructure - Sewer	2007	50	936,562	980,580	0	2	48	936,562	18,731	37,462	899,100	7966	8348	19612	20429
STP	Bioreactor and WAS	5	Infrastructure - Sewer	2007	50	1,294,952	1,355,815	0	2	48	1,294,952	25,899	51,798	1,243,154	7966	8348	27116	28246
STP	Bioreactor and WAS	5	Infrastructure - Sewer	2007	50	1,294,952	1,355,815	0	2	48	1,294,952	25,899	51,798	1,243,154	7966	8348	27116	28246
STP	Secondary Clarifier	5	Infrastructure - Sewer	2007	50	999,000	1,045,953	0	2	48	999,000	19,980	39,960	959,040	7966	8348	20919	21791
STP	Secondary Clarifier	5	Infrastructure - Sewer	2007	50	999,000	1,045,953	0	2	48	999,000	19,980	39,960	959,040	7966	8348	20919	21791
STP	Effluent Filter	5	Infrastructure - Sewer	2007	50	749,249	784,464	0	2	48	749,249	14,985	29,970	719,279	7966	8348	15689	16343
STP	Effluent Filter	5	Infrastructure - Sewer	2007	50	749,249	784,464	0	2	48	749,249	14,985	29,970	719,279	7966	8348	15689	16343
STP	UV Disinfection	5	Infrastructure - Sewer	2007	25	499,500	522,977	0	2	23	499,500	19,980	39,960	459,540	7966	8348	20919	22738
STP	Standby Power	5	Infrastructure - Sewer	2007	25	437,062	457,604	0	2	23	437,062	17,482	34,965	402,097	7966	8348	18304	19896
STP	Electrical Service	5	Infrastructure - Sewer	2007	50	191,770	200,783	0	2	48	191,770	3,835	7,671	184,099	7966	8348	4016	4183
STP	Site Mechanical	5	Infrastructure - Sewer	2007	25	874,124	915,208	0	2	23	874,124	34,965	69,930	804,194	7966	8348	36608	39792
\$ 1,114,979 \$ 1,557,734																		

Asset Id	Asset Description	Enter Financial Stmt Category	Financial Statements Category	Year Asset Was In Service	Expected Useful Life	Actual Historical Cost	Current Reproduction or Replacement Cost	Estimated Salvage Value	Choose Index CPI = 1 ENR = 2 1st Other = 3 2nd Other = 4 Default = 1	Calculated Expected Useful Life Remaining	Calculated Historical Cost	Calculated Straight Line Depreciation for the Year 2008	Calculated Accumulated Straight Line Depreciation to 2008 Year End	Net Book Value to 2008 Year End	Index Value for Asset	Current Year Index Value	Funding required per year for cost recovery (Original Life)	Funding required per year for cost recovery (remaining life)
2EBT1EBT22	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	55,389	0	2	65	35,882	449	6,728	29,154	5408	8348	692	852
2EBT22EBT1	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	84,556	0	2	65	54,777	685	10,271	44,506	5408	8348	1057	1301
2EBT32EBT2	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	3,377	0	2	65	2,187	27	410	1,777	5408	8348	42	52
2EBT32EBT2	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	26,968	0	2	65	17,471	218	3,276	14,195	5408	8348	337	415
2EBT42EBT3	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	56,326	0	2	65	36,489	456	6,842	29,647	5408	8348	704	867
2EBT52EBT4	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	97,621	0	2	65	63,241	791	11,858	51,383	5408	8348	1220	1502
2EBT62EBT5	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	96,387	0	2	65	62,441	781	11,708	50,733	5408	8348	1205	1483
CB23CSL1	300 mm PVC sewermain	Financial Stmt	#N/A	2004	80	0	16,505	0	2	75	14,067	176	879	13,188	7115	8348	206	220
CB24CB23	300 mm PVC sewermain	Financial Stmt	#N/A	2004	80	0	5,215	0	2	75	4,444	56	278	4,167	7115	8348	65	70
CB25CB24	200 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	15,034	0	2	71	11,204	140	1,260	9,943	6221	8348	188	212
CB26CB25	200 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	35,116	0	2	71	26,169	327	2,944	23,225	6221	8348	439	495
CB27CB26	200 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	25,093	0	2	71	18,700	234	2,104	16,596	6221	8348	314	353
CL10CL9	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	7,556	0	2	71	5,631	70	633	4,997	6221	8348	94	106
CL11CL10	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	30,845	0	2	71	22,986	287	2,586	20,400	6221	8348	386	434
CL12CL11	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	23,908	0	2	71	17,816	223	2,004	15,812	6221	8348	299	337
CL13CL12	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	19,935	0	2	71	14,856	186	1,671	13,185	6221	8348	249	281
CL14CL13	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	17,618	0	2	71	13,129	164	1,477	11,652	6221	8348	220	248
CL15CL14	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	26,259	0	2	71	19,588	245	2,201	17,367	6221	8348	328	370
CL16CL15	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	22,957	0	2	71	17,108	214	1,925	15,183	6221	8348	287	323
CL17CL16	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	41,577	0	2	71	30,983	387	3,486	27,498	6221	8348	520	586
CL18CL17	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	67,059	0	2	71	49,973	625	5,622	44,351	6221	8348	838	944
CL19CL18	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	53,702	0	2	71	40,019	500	4,502	35,517	6221	8348	671	756
CL20CL19	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	30,547	0	2	71	22,764	285	2,561	20,203	6221	8348	382	430
CL21CL20	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	20,619	0	2	71	15,365	192	1,729	13,637	6221	8348	258	290
CL22CL21	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	15,719	0	2	71	11,714	146	1,318	10,396	6221	8348	196	221
CL23CL22	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	14,558	0	2	71	10,849	136	1,220	9,628	6221	8348	182	205
CL24CL23	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	18,653	0	2	71	13,900	174	1,564	12,336	6221	8348	233	263
CL25CL24	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	15,954	0	2	71	11,889	149	1,337	10,551	6221	8348	199	225
CL26CL25	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	14,556	0	2	71	10,847	136	1,220	9,627	6221	8348	182	205
CL27CL26	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	15,093	0	2	71	11,247	141	1,265	9,982	6221	8348	189	213
CL28CL27	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	15,273	0	2	71	11,382	142	1,280	10,101	6221	8348	191	215
CL29CL28	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	38,671	0	2	71	28,818	360	3,242	25,576	6221	8348	483	545
CL30CL29	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	42,388	0	2	71	31,588	395	3,554	28,034	6221	8348	530	597
CL8CB27	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	18,166	0	2	71	13,537	169	1,523	12,014	6221	8348	227	256
CL9CL8	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	42,387	0	2	71	31,587	395	3,554	28,033	6221	8348	530	597
CSL1CSLLS	375 mm PVC sewermain	Financial Stmt	#N/A	2004	80	0	5,328	0	2	75	4,541	57	284	4,257	7115	8348	67	71
CSLLS	300 mm PVC sewermain	Financial Stmt	#N/A	2004	80	0	467,997	0	2	75	398,874	4,986	24,930	373,944	7115	8348	5850	6240
CSLLS	300 mm PVC sewermain	Financial Stmt	#N/A	2004	80	0	196,962	0	2	75	167,871	2,098	10,492	157,379	7115	8348	2462	2626
EBLS2EBT6	350 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	433,552	0	2	65	280,864	3,511	52,662	228,202	5408	8348	5419	6670
EBT10EBT9	450 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	27,353	0	2	65	17,720	221	3,322	14,397	5408	8348	342	421
EBT11EBT10	450 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	80,495	0	2	65	52,146	652	9,777	42,369	5408	8348	1006	1238
EBT12EBT11	450 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	49,325	0	2	65	31,954	399	5,991	25,963	5408	8348	617	759
EBT13EBT12	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	68,656	0	2	65	44,476	556	8,339	36,137	5408	8348	858	1056
EBT14EBT13	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	23,451	0	2	65	15,192	190	2,848	12,343	5408	8348	293	361
EBT15EBT14	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	86,187	0	2	65	55,834	698	10,469	45,365	5408	8348	1077	1326
EBT16EBT15	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	53,867	0	2	65	34,896	436	6,543	28,353	5408	8348	673	829
EBT17EBT16	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	80,182	0	2	65	51,943	649	9,739	42,204	5408	8348	1002	1234
EBT18EBT17	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	39,081	0	2	65	25,317	316	4,747	20,570	5408	8348	489	601
EBT19EBT18	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	38,805	0	2	65	25,139	314	4,714	20,425	5408	8348	485	597
EBT20EBT19	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	31,512	0	2	65	20,414	255	3,828	16,586	5408	8348	394	485
EBT21EBT20	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	68,737	0	2	65	44,529	557	8,349	36,180	5408	8348	859	1057
EBT21EBT20	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	7,050	0	2	65	4,567	57	856	3,711	5408	8348	88	108

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EBT22EBT21	375 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	84,472	0	2	65	54,722	684	10,260	44,462	5408	8348	1056	1300
EBT22ET28	525 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	33,983	0	2	65	22,015	275	4,128	17,887	5408	8348	425	523
EBT3EBT2	525 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	52,550	0	2	65	34,043	426	6,383	27,660	5408	8348	657	808
EBT4EBT3	525 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	54,996	0	2	65	35,628	445	6,680	28,947	5408	8348	687	846
EBT5EBT4	525 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	73,736	0	2	65	47,768	597	8,956	38,811	5408	8348	922	1134
EBT6EBT5	525 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	57,409	0	2	65	37,191	465	6,973	30,218	5408	8348	718	883
EBT7EBT6	450 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	38,653	0	2	65	25,040	313	4,695	20,345	5408	8348	483	595
EBT8EBT7	450 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	43,774	0	2	65	28,358	354	5,317	23,040	5408	8348	547	673
EBT9EBT8	450 mm PVC sewermain	Financial Stmt	#N/A	1994	80	0	38,777	0	2	65	25,120	314	4,710	20,410	5408	8348	485	597
ET101ET1	250 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	3,019	0	2	61	1,711	21	406	1,305	4732	8348	38	49
ET102ET101	250 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	3,017	0	2	61	1,710	21	406	1,304	4732	8348	38	49
ET102ET101	250 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	63,500	0	2	61	35,994	450	8,549	27,446	4732	8348	794	1041
ET103ET102	250 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	52,473	0	2	61	29,744	372	7,064	22,680	4732	8348	656	860
ET104ET103	250 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	42,691	0	2	61	24,199	302	5,747	18,452	4732	8348	534	700
ET10ET9	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	46,079	0	2	61	26,119	326	6,203	19,916	4732	8348	576	755
ET11ET10	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	41,184	0	2	61	23,345	292	5,544	17,801	4732	8348	515	675
ET12ET11	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	54,628	0	2	61	30,965	387	7,354	23,611	4732	8348	683	896
ET13ET12	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	53,611	0	2	61	30,389	380	7,217	23,171	4732	8348	670	879
ET14ET13	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	72,829	0	2	61	41,283	516	9,805	31,478	4732	8348	910	1194
ET15ET14	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	29,226	0	2	61	16,566	207	3,935	12,632	4732	8348	365	479
ET16ET15	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	63,939	0	2	61	36,243	453	8,608	27,635	4732	8348	799	1048
ET17ET16	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	59,537	0	2	61	33,748	422	8,015	25,733	4732	8348	744	976
ET18ET17	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	56,460	0	2	61	32,004	400	7,601	24,403	4732	8348	706	926
ET19ET18	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	65,529	0	2	61	37,144	464	8,822	28,323	4732	8348	819	1074
ET1ETLS	750 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	3,430	0	2	61	1,944	24	462	1,482	4732	8348	43	56
ET20ET19	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	69,576	0	2	61	39,439	493	9,367	30,072	4732	8348	870	1141
ET21ET20	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	50,832	0	2	61	28,814	360	6,843	21,971	4732	8348	635	833
ET22ET21	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	60,215	0	2	61	34,132	427	8,106	26,026	4732	8348	753	987
ET23ET22	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	63,658	0	2	61	36,084	451	8,570	27,514	4732	8348	796	1044
ET24ET23	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	25,479	0	2	61	14,443	181	3,430	11,013	4732	8348	318	418
ET25ET24	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	63,727	0	2	61	36,123	452	8,579	27,544	4732	8348	797	1045
ET26ET25	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	37,489	0	2	61	21,250	266	5,047	16,203	4732	8348	469	615
ET27ET26	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	72,391	0	2	61	41,034	513	9,746	31,289	4732	8348	905	1187
ET28ET27	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	57,105	0	2	61	32,370	405	7,688	24,682	4732	8348	714	936
ET29ET28	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	48,195	0	2	61	27,319	341	6,488	20,831	4732	8348	602	790
ET2ET1	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	56,087	0	2	61	31,792	397	7,551	24,242	4732	8348	701	919
ET30ET29	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	70,827	0	2	61	40,148	502	9,535	30,613	4732	8348	885	1161
ET31ET30	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	84,263	0	2	61	47,764	597	11,344	36,420	4732	8348	1053	1381
ET32ET31	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	77,755	0	2	61	44,075	551	10,468	33,607	4732	8348	972	1275
ET33ET32	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	26,656	0	2	61	15,110	189	3,589	11,521	4732	8348	333	437
ET34ET33	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	80,497	0	2	61	45,629	570	10,837	34,792	4732	8348	1006	1320
ET35ET34	600 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	77,163	0	2	61	43,739	547	10,388	33,351	4732	8348	965	1265
ET36ET35	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	60,558	0	2	61	34,327	429	8,153	26,174	4732	8348	757	993
ET37ET36	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	60,794	0	2	61	34,461	431	8,184	26,276	4732	8348	760	997
ET38ET37	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	40,505	0	2	61	22,960	287	5,453	17,507	4732	8348	506	664
ET38ET37	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	32,891	0	2	61	18,644	233	4,428	14,216	4732	8348	411	539
ET39ET38	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	31,695	0	2	61	17,966	225	4,267	13,699	4732	8348	396	520
ET3ET2	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	80,045	0	2	61	45,373	567	10,776	34,597	4732	8348	1001	1312
ET40ET39	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	34,251	0	2	61	19,415	243	4,611	14,804	4732	8348	428	561
ET41ET40	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	64,344	0	2	61	36,473	456	8,662	27,810	4732	8348	804	1055
ET42ET41	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	29,764	0	2	61	16,872	211	4,007	12,865	4732	8348	372	488
ET43ET42	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	56,685	0	2	61	32,131	402	7,631	24,500	4732	8348	709	929

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ET44ET43	450 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	63,355	0	2	61	35,912	449	8,529	27,383	4732	8348	792	1039
ET45ET44	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	66,784	0	2	61	37,856	473	8,991	28,865	4732	8348	835	1095
ET46ET45	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	27,612	0	2	61	15,652	196	3,717	11,934	4732	8348	345	453
ET47ET46	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	28,142	0	2	61	15,952	199	3,789	12,164	4732	8348	352	461
ET47ET46	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	26,142	0	2	61	14,818	185	3,519	11,299	4732	8348	327	429
ET48ET47	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	72,914	0	2	61	41,331	517	9,816	31,515	4732	8348	911	1195
ET49ET48	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	71,439	0	2	61	40,495	506	9,617	30,877	4732	8348	893	1171
ET4ET3	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	38,169	0	2	61	21,636	270	5,139	16,497	4732	8348	477	626
ET50ET49	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	52,099	0	2	61	29,532	369	7,014	22,518	4732	8348	651	854
ET51ET50	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	35,628	0	2	61	20,196	252	4,796	15,399	4732	8348	445	584
ET52ET51	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	38,550	0	2	61	21,852	273	5,190	16,662	4732	8348	482	632
ET5ET4	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	49,677	0	2	61	28,159	352	6,688	21,471	4732	8348	621	814
ET6ET5	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	43,122	0	2	61	24,443	306	5,805	18,638	4732	8348	539	707
ET7ET6	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	36,755	0	2	61	20,834	260	4,948	15,886	4732	8348	459	603
ET8ET7	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	52,327	0	2	61	29,661	371	7,045	22,617	4732	8348	654	858
ET8ET7	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	10,497	0	2	61	5,950	74	1,413	4,537	4732	8348	131	172
ET9ET8	675 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	41,604	0	2	61	23,583	295	5,601	17,982	4732	8348	520	682
ETLSWT5	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	533,176	0	2	61	302,227	3,778	71,779	230,448	4732	8348	6665	8741
ETLSWT5	375 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	4,013	0	2	61	2,275	28	540	1,735	4732	8348	50	66
FST3FST2	525 mm PVC sewermain	Financial Stmt	#N/A	1996	80	0	72,481	0	2	67	48,795	610	7,929	40,866	5620	8348	906	1082
FST4FST3	525 mm PVC sewermain	Financial Stmt	#N/A	1996	80	0	49,152	0	2	67	33,090	414	5,377	27,713	5620	8348	614	734
FST5FST4	525 mm PVC sewermain	Financial Stmt	#N/A	1996	80	0	52,170	0	2	67	35,122	439	5,707	29,414	5620	8348	652	779
Gel-2GET10	200 mm PVC sewermain	Financial Stmt	#N/A	1989	80	0	64,983	0	2	60	35,924	449	8,981	26,943	4615	8348	812	1083
Gel-3Gel-2	200 mm PVC sewermain	Financial Stmt	#N/A	1989	80	0	60,729	0	2	60	33,573	420	8,393	25,179	4615	8348	759	1012
Gel-4Gel-3	200 mm PVC sewermain	Financial Stmt	#N/A	1989	80	0	25,722	0	2	60	14,220	178	3,555	10,665	4615	8348	322	429
Gel-5Gel-4	200 mm PVC sewermain	Financial Stmt	#N/A	1990	80	0	40,284	0	2	61	22,835	285	5,423	17,411	4732	8348	504	660
GET10GET-9	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	10,334	0	2	66	6,773	85	1,185	5,588	5471	8348	129	157
GET-1ET13	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	8,592	0	2	66	5,631	70	985	4,645	5471	8348	107	130
GET-2GET-1	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	16,305	0	2	66	10,686	134	1,870	8,816	5471	8348	204	247
GET-3GET-2	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	22,201	0	2	66	14,550	182	2,546	12,004	5471	8348	278	336
GET-4GET-3	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	45,098	0	2	66	29,555	369	5,172	24,383	5471	8348	564	683
GET-5GET-4	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	24,206	0	2	66	15,864	198	2,776	13,088	5471	8348	303	367
GET-6GET-5	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	35,610	0	2	66	23,337	292	4,084	19,253	5471	8348	445	540
GET-7GET-6	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	23,090	0	2	66	15,133	189	2,648	12,484	5471	8348	289	350
GET-8GET-7	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	21,646	0	2	66	14,186	177	2,483	11,704	5471	8348	271	328
GET-9GET-8	200 mm PVC sewermain	Financial Stmt	#N/A	1995	80	0	35,140	0	2	66	23,029	288	4,030	18,999	5471	8348	439	532
LV11LV12	450 mm PVC sewermain	Financial Stmt	#N/A	2007	80	0	43,139	0	2	78	41,165	515	1,029	40,136	7966	8348	539	553
LV16ALVT16	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	16,992	0	2	69	12,050	151	1,657	10,393	5920	8348	212	246
LV1SLT-7	375 mm PVC sewermain	Financial Stmt	#N/A	1993	80	0	35,007	0	2	64	21,848	273	4,370	17,478	5210	8348	438	547
LVT10LVT-9	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	66,538	0	2	69	47,185	590	6,488	40,697	5920	8348	832	964
LVT11LVT10	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	62,105	0	2	69	44,042	551	6,056	37,986	5920	8348	776	900
LVT12LVT11	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	40,539	0	2	69	28,748	359	3,953	24,795	5920	8348	507	588
LVT12LVT11	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	33,142	0	2	69	23,503	294	3,232	20,271	5920	8348	414	480
LVT13LVT12	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	48,382	0	2	69	34,310	429	4,718	29,593	5920	8348	605	701
LVT14LVT13	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	64,068	0	2	69	45,434	568	6,247	39,186	5920	8348	801	929
LVT15LVT14	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	13,409	0	2	69	9,509	119	1,307	8,202	5920	8348	168	194
LVT16LVT15	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	82,223	0	2	69	58,308	729	8,017	50,291	5920	8348	1028	1192
LVT17LV16A	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	57,657	0	2	69	40,888	511	5,622	35,266	5920	8348	721	836
LVT18LVT17	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	19,126	0	2	69	13,564	170	1,865	11,699	5920	8348	239	277
LVT18LVT17	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	66,018	0	2	69	46,817	585	6,437	40,380	5920	8348	825	957
LVT19LVT18	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	39,008	0	2	69	27,662	346	3,804	23,859	5920	8348	488	565
LVT20LVT19	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	25,538	0	2	69	18,110	226	2,490	15,620	5920	8348	319	370

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LVT21LVT20	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	5,006	0	2	69	3,550	44	488	3,062	5920	8348	63	73
LVT22LVT21	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	39,103	0	2	71	29,140	364	3,278	25,861	6221	8348	489	551
LVT23LVT22	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	30,165	0	2	71	22,479	281	2,529	19,950	6221	8348	377	425
LVT24LVT23	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	68,673	0	2	71	51,176	640	5,757	45,418	6221	8348	858	967
LVT25LVT24	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	75,682	0	2	71	56,399	705	6,345	50,054	6221	8348	946	1066
LVT26LVT25	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	67,936	0	2	71	50,626	633	5,695	44,931	6221	8348	849	957
LVT27LVT26	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	43,890	0	2	71	32,707	409	3,680	29,028	6221	8348	549	618
LVT28LVT27	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	13,438	0	2	71	10,014	125	1,127	8,888	6221	8348	168	189
LVT28LVT27	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	33,015	0	2	71	24,603	308	2,768	21,835	6221	8348	413	465
LVT29LVT28	375 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	83,522	0	2	71	62,242	778	7,002	55,239	6221	8348	1044	1176
LVT-2LVT-1	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	40,709	0	2	69	28,869	361	3,969	24,899	5920	8348	509	590
LVT30LVT29	300 mm PVC sewermain	Financial Stmt	#N/A	2000	80	0	55,224	0	2	71	41,154	514	4,630	36,524	6221	8348	690	778
LVT-3LVT-2	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	45,805	0	2	69	32,483	406	4,466	28,016	5920	8348	573	664
LVT-4LVT-3	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	50,618	0	2	69	35,896	449	4,936	30,960	5920	8348	633	734
LVT5ALVT-5	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	48,351	0	2	69	34,288	429	4,715	29,573	5920	8348	604	701
LVT-5LVT-4	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	25,969	0	2	69	18,416	230	2,532	15,884	5920	8348	325	376
LVT-6LVT5A	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	28,651	0	2	69	20,318	254	2,794	17,524	5920	8348	358	415
LVT-7LVT-6	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	87,776	0	2	69	62,247	778	8,559	53,688	5920	8348	1097	1272
LVT-8LVT-7	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	57,372	0	2	69	40,686	509	5,594	35,091	5920	8348	717	831
LVT-9LVT-8	375 mm PVC sewermain	Financial Stmt	#N/A	1998	80	0	34,950	0	2	69	24,785	310	3,408	21,377	5920	8348	437	507
MR57ET45	200 mm PVC sewermain	Financial Stmt	#N/A	1992	80	0	19,193	0	2	63	11,461	143	2,435	9,026	4985	8348	240	305
MTB12EBT2	200 mm PVC sewermain	Financial Stmt	#N/A	2001	80	0	23,199	0	2	72	17,602	220	1,760	15,842	6334	8348	290	322
SLT10SLT-9	375 mm PVC sewermain	#REF!	#REF!	1988	80	0	77,823	0	2	59	42,126	527	11,059	31,069	4519	8348	973	1319
SLT11SLT10	300 mm PVC sewermain	#REF!	#REF!	1988	80	0	35,041	0	2	59	18,969	237	4,979	13,989	4519	8348	438	594
SLT12SLT11	300 mm PVC sewermain	#REF!	#REF!	1988	80	0	47,815	0	2	59	25,884	324	6,794	19,089	4519	8348	598	810
SLT13SLT12	300 mm PVC sewermain	#REF!	#REF!	1988	80	0	60,543	0	2	59	32,774	410	8,603	24,171	4519	8348	757	1026
SLT14SLT13	300 mm PVC sewermain	#REF!	#REF!	1988	80	0	45,402	0	2	59	24,577	307	6,452	18,126	4519	8348	568	770
SLT15SLT14	300 mm PVC sewermain	#REF!	#REF!	1988	80	0	57,864	0	2	59	31,323	392	8,222	23,101	4519	8348	723	981
SLT16SLT15	300 mm PVC sewermain	#REF!	#REF!	1988	80	0	44,825	0	2	59	24,265	303	6,370	17,895	4519	8348	560	760
SLT-1FST5	525 mm PVC sewermain	#REF!	#REF!	1996	80	0	52,666	0	2	67	35,456	443	5,762	29,694	5620	8348	658	786
SLT-1FST5	525 mm PVC sewermain	#REF!	#REF!	1996	80	0	24,210	0	2	67	16,299	204	2,649	13,650	5620	8348	303	361
SLT27SLT-6	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	4,218	0	2	59	2,283	29	599	1,684	4519	8348	53	71
SLT27SLT-6	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	33,917	0	2	59	18,360	230	4,820	13,541	4519	8348	424	575
SLT28SLT27	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	62,239	0	2	59	33,692	421	8,844	24,848	4519	8348	778	1055
SLT29SLT28	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	51,384	0	2	59	27,816	348	7,302	20,514	4519	8348	642	871
SLT-2SLT-1	525 mm PVC sewermain	#REF!	#REF!	1988	80	0	25,515	0	2	59	13,812	173	3,626	10,186	4519	8348	319	432
SLT30SLT29	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	46,833	0	2	59	25,352	317	6,655	18,697	4519	8348	585	794
SLT-3SLT-2	525 mm PVC sewermain	#REF!	#REF!	1988	80	0	73,191	0	2	59	39,620	495	10,400	29,220	4519	8348	915	1241
SLT-4SLT-3	525 mm PVC sewermain	#REF!	#REF!	1988	80	0	68,936	0	2	59	37,317	466	9,796	27,521	4519	8348	862	1168
SLT-5SLT-4	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	68,553	0	2	59	37,109	464	9,741	27,368	4519	8348	857	1162
SLT-6SLT-5	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	65,623	0	2	59	35,524	444	9,325	26,199	4519	8348	820	1112
SLT-7SLT30	450 mm PVC sewermain	#REF!	#REF!	1988	80	0	22,111	0	2	59	11,970	150	3,142	8,828	4519	8348	276	375
SLT-8SLT-7	375 mm PVC sewermain	#REF!	#REF!	1988	80	0	30,107	0	2	59	16,298	204	4,278	12,019	4519	8348	376	510
SLT-8SLT-7	375 mm PVC sewermain	#REF!	#REF!	1988	80	0	35,007	0	2	59	18,950	237	4,974	13,976	4519	8348	438	593
SLT-9SLT-8	375 mm PVC sewermain	#REF!	#REF!	1988	80	0	59,369	0	2	59	32,138	402	8,436	23,702	4519	8348	742	1006
USL3559	200 mm PVC sewermain	#REF!	#REF!	2007	80	0	134,193	0	2	78	128,052	1,601	3,201	124,851	7966	8348	1677	1720
USL3560	200 mm PVC sewermain	#REF!	#REF!	2007	80	0	135,388	0	2	78	129,192	1,615	3,230	125,962	7966	8348	1692	1736
USL3561	200 mm PVC sewermain	#REF!	#REF!	2007	80	0	45,227	0	2	78	43,158	539	1,079	42,079	7966	8348	565	580
USL3563	200 mm PVC sewermain	#REF!	#REF!	2007	80	0	89,801	0	2	78	85,692	1,071	2,142	83,549	7966	8348	1123	1151
USL3647	200 mm PVC sewermain	#REF!	#REF!	2007	80	0	96,827	0	2	78	92,396	1,155	2,310	90,086	7966	8348	1210	1241
USL3775	200 mm PVC sewermain	#REF!	#REF!	2007	80	0	0	0	2	78	0	0	0	0	7966	8348	0	0
USL516	300 mm PVC sewermain	#REF!	#REF!	2007	80	0	141,510	0	2	78	135,035	1,688	3,376	131,659	7966	8348	1769	1814

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USL517	300 mm PVC sewermain	#REF!	#REF!	2007	80	0	182,943	0	2	78	174,571	2,182	4,364	170,207	7966	8348	2287	2345
WT10WT9	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	28,703	0	2	60	15,868	198	3,967	11,901	4615	8348	359	478
WT11WT10	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	52,575	0	2	60	29,065	363	7,266	21,799	4615	8348	657	876
WT12WT11	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	70,501	0	2	60	38,975	487	9,744	29,231	4615	8348	881	1175
WT13WT12	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	19,731	0	2	60	10,908	136	2,727	8,181	4615	8348	247	329
WT13WT12	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	15,746	0	2	60	8,705	109	2,176	6,528	4615	8348	197	262
WT13WT12	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	34,536	0	2	60	19,092	239	4,773	14,319	4615	8348	432	576
WT14WT13	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	52,098	0	2	60	28,801	360	7,200	21,601	4615	8348	651	868
WT15WT14	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	25,689	0	2	60	14,201	178	3,550	10,651	4615	8348	321	428
WT16WT15	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	37,015	0	2	60	20,463	256	5,116	15,347	4615	8348	463	617
WT17WT16	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	34,544	0	2	60	19,097	239	4,774	14,322	4615	8348	432	576
WT18WT17	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	37,405	0	2	60	20,678	258	5,170	15,509	4615	8348	468	623
WT19WT18	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	46,251	0	2	60	25,569	320	6,392	19,177	4615	8348	578	771
WT1AWT1	750 mm PVC sewermain	#REF!	#REF!	1989	80	0	20,927	0	2	60	11,569	145	2,892	8,677	4615	8348	262	349
WT20WT19	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	54,114	0	2	60	29,916	374	7,479	22,437	4615	8348	676	902
WT21WT20	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	77,788	0	2	60	43,004	538	10,751	32,253	4615	8348	972	1296
WT22WT21	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	81,968	0	2	60	45,314	566	11,329	33,986	4615	8348	1025	1366
WT23WT22	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	83,766	0	2	60	46,308	579	11,577	34,731	4615	8348	1047	1396
WT24WT23	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	59,556	0	2	60	32,924	412	8,231	24,693	4615	8348	744	993
WT25WT24	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	78,609	0	2	60	43,457	543	10,864	32,593	4615	8348	983	1310
WT26WT25	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	62,282	0	2	60	34,431	430	8,608	25,823	4615	8348	779	1038
WT2WT1A	750 mm PVC sewermain	#REF!	#REF!	1989	80	0	22,265	0	2	60	12,308	154	3,077	9,231	4615	8348	278	371
WT3WT2	750 mm PVC sewermain	#REF!	#REF!	1989	80	0	76,275	0	2	60	42,167	527	10,542	31,625	4615	8348	953	1271
WT4WT3	750 mm PVC sewermain	#REF!	#REF!	1989	80	0	53,828	0	2	60	29,758	372	7,439	22,318	4615	8348	673	897
WT5WT4	750 mm PVC sewermain	#REF!	#REF!	1989	80	0	18,476	0	2	60	10,214	128	2,553	7,660	4615	8348	231	308
WT6WT5	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	21,493	0	2	60	11,882	149	2,970	8,911	4615	8348	269	358
WT7WT6	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	13,148	0	2	60	7,269	91	1,817	5,452	4615	8348	164	219
WT8WT7	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	15,329	0	2	60	8,474	106	2,119	6,356	4615	8348	192	255
WT9WT8	600 mm PVC sewermain	#REF!	#REF!	1989	80	0	27,894	0	2	60	15,421	193	3,855	11,566	4615	8348	349	465
																	154069	190222

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LS-1	East Trunk Lift Station Chamber	5	Infrastructure - Sewer	1990	50	0	180,000	0	2	31	102,032	2,041	38,772	63,260	4732	8348	3600	5806		
LS-1	East Trunk Lift Station Mechanical	5	Infrastructure - Sewer	2006	20	244,758	263,604	0	2	17	244,758	12,238	36,714	208,044	7751	8348	13180	15506		
LS-1	East Trunk Lift Station Electrical	5	Infrastructure - Sewer	2006	20	193,230	208,109	0	2	17	193,230	9,662	28,985	164,246	7751	8348	10405	12242		
LS-1	East Trunk Lift Station Site/Building	5	Infrastructure - Sewer	2006	50	158,877	171,111	0	2	47	158,877	3,178	9,533	149,344	7751	8348	3422	3641		
LS-3	Casa Loma Lift Station Chamber	5	Infrastructure - Sewer	2004	50	401,873	470,191	0	2	45	401,873	8,037	40,187	361,686	7115	8348	9404	10449		
LS-3	Casa Loma Lift Station Mechanical	5	Infrastructure - Sewer	2004	20	200,936	235,095	0	2	15	200,936	10,047	50,234	150,702	7115	8348	11755	15673		
LS-3	Casa Loma Lift Station Electrical	5	Infrastructure - Sewer	2004	20	401,873	470,191	0	2	15	401,873	20,094	100,468	301,405	7115	8348	23510	31346		
LS-3	Casa Loma Lift Station Site	5	Infrastructure - Sewer	2004	50	334,894	391,826	0	2	45	334,894	6,698	33,489	301,405	7115	8348	7837	8707		
																	\$	83,113	\$	103,370