

REGIONAL DISTRICT OF CENTRAL OKANAGAN WESTSIDE WASTEWATER TREATMENT SERVICE STAKEHOLDER SELECT COMMITTEE MEETING

Wednesday, February 10, 2021 9:00 a.m. Woodhaven Board Room 1450 K.L.O. Road, Kelowna, BC

1. CALL TO ORDER

Chair Milsom acknowledged that this meeting is being held on the traditional territory of the syilx/Okanagan peoples.

In accordance with the Provincial Health Officer Order regarding gatherings and events, the public is currently not permitted to attend Committee meetings in-person.

Roll Call

2. ADOPTION OF THE AGENDA

Recommended Motion: THAT the Agenda be adopted.

3. ADOPTION OF MINUTES

Recommended Motion: THAT the Westside Wastewater Treatment Service Stakeholder Select Committee meeting minutes of February 12, 2020, be adopted.

4. BUSINESS ARISING

4.1. 2020 Wastewater Flow Monitoring Program

Recommended Motion: THAT the Westside Wastewater Treatment Plant Stakeholder Committee receives the 2020 Wastewater Flow Monitoring Program report for information. Pages

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4.2. Westside Sewer System Draft 2021-2025 Financial Plan

Recommended Motion:

THAT the Westside Regional Wastewater Treatment Plant Stakeholder Select Committee receive the Westside Sewer System Draft 2021-2025 Financial Plan Report for information; and

AND THAT the Committee recommends increasing reserve funding and capital levels from 45% to 50% of the recommended annual replacement amount, and to continue with 5% increases annually to continue to bridge the funding gap.

AND FURTHER THAT the Committee recommends the Westside Sewer System budgeted Draft 2021 – 2025 Financial Plans to the Board.

4.3. 2020 Project Update

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Recommended Motion:

THAT the Westside Wastewater Treatment Plant Stakeholder Committee receives the 2020 Project Update report for information.

- 5. NEW BUSINESS
- 6. NEXT MEETING
- 7. ADJOURN

Minutes of the WESTSIDE WASTEWATER TREATMENT SERVICE STAKEHOLDER SELECT COMMITTEE Meeting held at the Regional District of Central Okanagan, 1450 KLO Road, Kelowna, BC on Wednesday, February 12, 2020, Woodhaven Room

Voting Members:	Director G. Milsom, Chair (City of West Kelowna) Director C. Fortin, Vice Chair(Regional District of Central Okanagan) Director S. Johnston (City of West Kelowna) Director J. Coble (Westbank First Nation)
Attendees:	G. Given (Chair of the Regional Board) Ex-officio
Technical Staff:	 B. Reardon, CAO (Regional District of Central Okanagan) D. Komaike, Director of Engineering Services (Regional District of Central Okanagan) M. Rilkoff, Director of Finance/Deputy CAO (Regional District of Central Okanagan) M. Wyman, Supervisor of Utility Services (Regional District of Central Okanagan) J. Mitchell, CAO (District of Peachland) D. Pryde, Director of Finance (District of Peachland) S. Grundy, Director of Operations (District of Peachland) P. Gipps, CAO (City of West Kelowna) W. Everton, CFO (City of West Kelowna) A. Fillion, GM of Engineering and Public Works (City of West Kelowna) D. Corning, Infrastructure Engineer (Westbank First Nation) K. McIntosh, Recording Secretary (Regional District of Central Okanagan)
Absent:	P. Leitch, Director of Finance (Westbank First Nation) R. Hillis, Engineering Manager (City of West Kelowna) J. Mocilac, Director of Development Services (Westbank First Nation)

1. CALL TO ORDER

B. Reardon called the meeting to order at 10:03 a.m. The meeting is being held on the traditional territory of the Syilx/Okanagan Peoples.

B. Reardon reviewed the Committee's Terms of Reference.

2. ELECTION OF THE CHAIR FOR 2020/2021

G. Milsom was nominated as Chair for the 2020/2021 term and accepted the nomination.

FORTIN/COBLE

THAT G. Milsom be elected as Chair of the Westside Wastewater Treatment Service Stakeholder Select Committee for 2020/2021.

CARRIED

3. ELECTION OF VICE CHAIR FOR 2020/2021

C. Fortin was nominated for Vice-Chair for the 2020/2021 term and accepted the nomination.

MILSOM/JOHNSTON

THAT C. Fortin be elected as Vice-Chair of the Westside Wastewater Treatment Service Stakeholder Select Committee for 2020/2021.

CARRIED

G. Milsom took over as Chair of the meeting at 10:05 a.m.

Introductions were conducted.

4. ADOPTION OF THE AGENDA

JOHNSTON/FORTIN

THAT the February 12, 2020 Agenda be adopted.

CARRIED

5. ADOPTION OF THE MINUTES OF JUNE 5, 2019

FORTIN/MILSOM

THAT the Westside Wastewater Treatment Service Stakeholder Select Committee Minutes of June 5, 2019 be adopted.

CARRIED

6. RDCO/UBC ADVANCED BIOSOLIDS DIGESTION PROJECT UPDATE

Presentation by Tim Abbott, Graduate Assistant/Technician III, Ph.D. Candidate, UBC Bioreactor Lab – School of Engineering, UBC – Okanagan Campus

Staff and the presenter, Tim Abbott, responded to questions from the Committee members.

FORTIN/JOHNSTON

THAT the Westside Wastewater Treatment Service Stakeholder Select Committee receives, for information, the presentation dated February 12, 2020 by Tim Abbott regarding an update on the RDCO/UBC Advanced Biosolids Digestion Project.

CARRIED

7. UPDATE ON INITIATIVES

Report by C. Kruiswyk, Environmental Services Analyst (Regional District of Central Okanagan)

A discussion took place with respect to some of the initiatives that staff provided an update on.

FORTIN/JOHNSTON

THAT the Westside Wastewater Treatment Service Stakeholder Select Committee receives, for information, the Report from the Environmental Services Analyst dated February 2, 2020 regarding an update on initiatives.

CARRIED

8. WESTSIDE SEWER SYSTEM DRAFT 2020-2024 FINANCIAL PLAN

Report by M. Rilkoff, Director of Finance/Deputy CAO (Regional District of Central Okanagan)

A discussion took place regarding the draft Financial Plan and the possibility of accessing grant funding.

FORTIN/JOHNSTON

THAT the Westside Wastewater Treatment Service Stakeholder Select Committee receives, for information, the Report from the Director of Financial Services dated February 7, 2020 regarding the Westside Sewer System Draft 2020-2024 Financial Plan Report;

AND THAT the Committee recommends increasing reserve funding and capital levels from 40% to 45% of the recommended annual replacement amount;

AND THAT the Committee recommends the Westside Sewer System budgeted Draft 2020 – 2024 Financial Plans to the Board;

AND FURTHER THAT the Committee recommends to the Board that the Westside Sewer System \$1 million Blower project be deferred to a future year should grant funding not be approved in the \$600,000 to \$700,000 range as noted in the budget.

CARRIED

9. EAST TRUNK SEWER AND WESTSIDE TREATMENT PLANT DEVELOPMENT COST CHARGE – IMPLEMENTATION PROPOSAL

Report by D. Komaike, Director of Engineering Services (Regional District of Central Okanagan)

A discussion took place regarding the next steps and the possibility of conducting a workshop with key staff and proving the community with advanced notice of the workshop.

JOHNSTON/FORTIN

THAT the Westside Wastewater Treatment Service Stakeholder Select Committee receives, for information, the Report from the Director of Engineering dated February 7, 2020 regarding the implementation proposal for the East Trunk Sanitary Sewer and Westside Wastewater Treatment Plant Development Cost Charges;

AND THAT the Committee provides direction regarding the implementation and phasing of the Development Cost Charges for the East Trunk Sanitary Sewer and Westside Wastewater Treatment Plant Bylaws.

CARRIED

10. NEW BUSINESS

There was no new business raised.

11. NEXT MEETING

The next Stakeholder Select Committee meeting will be confirmed at a later date.

12. ADJOURN

The meeting was adjourned at 11:28 a.m.

CERTIFIED TO BE TRUE AND CORRECT

Director G Milsom (Chair)

Committee Member



Report to the Westside Regional Wastewater Treatment Plant Stakeholder Committee

From: David Komaike, Director of Engineering Services

Date: February 8, 2021

RE: 2020 Wastewater Flow Monitoring Program

Recommendation

THAT the Westside Wastewater Treatment Plant Stakeholder Committee receives this report for information.

Background:

Each year, the Regional District completes a Flow Monitoring Program to estimate the sewage contributions to the Regional Wastewater Treatment Plant and the East Trunk Sanitary Sewer. The flow splitting is calculated using two methods (Flow Monitoring and Lift Station SCADA records) which are then averaged to produce a final estimate for each participant in the service.

WWTP Flow Splitting Results for 2020

JURISDICTION	CALCULATI	CALCULATION METHOD			
	Flow Monitor	Lift Station SCADA	Average		
District of Peachland	7.43%	7. 43%	7.43%		
City of West Kelowna	67.96%	70.22%	69.05%		
Westbank First Nation	24.61%	22.35%	23.52%		
Wastewater Treatment Plant	100.00%	100.00%	100.00%		

East Trunk Sewer Flow Splitting Results for 2020

JURISDICTION	CALCULATION METHOD					
	Flow Monitor	Lift Station SCADA	Average			
City of West Kelowna	67.96%	70.22%	69.05%			
Westbank First Nation	24.61%	22.35%	23.52%			
Wastewater Treatment Plant	100.00%	100.00%	100.00%			

WWTP Flow Splitting Results – 2015 - 2020

The following graph shows the flow trends over the past 5 years. <u>Peachland</u>

- Flow contribution has remained relatively constant: Averaging 7.79% over the past 5 years.
- Flow contribution increased in 2017 due to the flooding but has returned to traditional levels.

Westbank First Nations

- Flow contributions continue to gradually increase from 18.6% in 2015 to 22.35% in 2020 (5-year average – 20.37%)
- The increase in flowrate is directly related to the growth in population and accelerated development as compared to Peachland and the City of West Kelowna.

City of West Kelowna

- Flow contributions continue to decrease from 73.7% in 2015 to 70.22% in 2020. (5-year average 71.84%)
- The decrease is directly related to the lower development activity relative to Westbank First Nations.



East Trunk Flow Splitting Results – 2015 -2020

The following graph shows the flow trends over the past 5 years.

Westbank First Nations

- Flow contributions continue to gradually increase from 20.6% in 2015 to 26.6% in 2020 (5year average – 22.04%)
- The increase in flow rate is directly related to the growth in population and accelerated development as compared to Peachland and the City of West Kelowna.

City of West Kelowna

- Flow contributions continue to decrease from 79.4% in 2015 to 73.4% in 2020. (5-year average 77.96%)
- The decrease is directly related to the lower development activity relative to Westbank First Nations.



Future Trends

Dwelling Units

Over the next 20-years, the number of dwelling units is estimated to increase by 4,556 units. The growth within the two jurisdictions is as follows:

<u>The City of West Kelowna</u> = 934 dwelling units, with 324 single detached and 610 multifamily units, based on an analysis of the potential development in the West Kelowna OCP that could connect to the East Trunk over the next 20 years. The lands designated for future development in the West Kelowna Official Community Plan that remain undeveloped within the catchment area of the East Trunk were ascribed a density similar to the existing density of development with the same designation and in the same vicinity. The resulting amount of development is approximately 47 units per year over a 20-year period, or about 0.36% per year. While the figure will likely fluctuate significantly over the years, this volume of development should be possible given that the entire City of West Kelowna saw development of about 277 units per year over the last 5-years.

<u>The Westbank First Nation</u> = 3,622 dwelling units, with 372 single detached and 3250 multifamily units, based on units forecast by Westbank First Nation for individual development cells within the East Trunk catchment area as set out on Land Use Maps. The subject area of Westbank First Nation currently has a total of 4461 residential units. The growth of 3622 units from 4461 to 8083 is an increase of approximately 3.0% per year over the 20-year projection period, which is less than the annual growth rate of 6.3% from 2011 to 2016, but is more comparable to the annualized growth rate of 3.6% over the 15-year period from 2001 to 2016, and is likely more reasonable over a 20-year period. This is also a rate of about 181 units per year over the 20-year period compared to about 236 units per year from 2011 to 2016.

Residential and Non-Residential Growth 20 years (2018 – 2038)									
	City of West Kelowna	% of Future Growth	Westbank First Nation	% of Future Growth	Total				
Projected New Development (units)	934	21%	3,622	79%	4,556				
Single-Detached Units	324	47%	372	53%	696				
Multi-Family Units	610	16%	3,250	84%	3,860				
Non Residential Floor Area (sq. m)									
Commercial	15,000	14%	94,244	86%	109,244				
Industrial	45,000	49%	47,122	51%	92,122				
Institutional	11,700	43%	15,707	57%	27,407				

The differences in projected growth will continue the shift in cost from the City of West Kelowna to Westbank First Nations. This trend will be reflected in both the East Trunk and WWTP functions. It is expected that Peachland will remain relatively unchanged with a slow decrease in percentages expected over the next 20-years.

20-year projections:

- City of West Kelowna 63%-65%
- Westbank First Nations 28%-30%
- Peachland 7%

2020 WASTEWATER FLOW MONITORING PROGRAM

REGIONAL DISTRICT OF CENTRAL OKANAGAN January 13, 2021



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PREPARED FOR:

Regional District of Central Okanagan 1450 KLO Road Kelowna, BC, V1W 3Z4

PREPARED BY:

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APPENDIX	B:	FLOW	MONITOR	TREND	DATA	-	TWO EAGLES	AND	SONO	AN	PINES
APPENDIX	C:	FLOW	MONITOR	TREND	DATA	_	BOUCHERIE A	ND E	AST BO)UN	DARY



EXECUTIVE SUMMARY

The proposed jurisdictional split for flows into the regional wastewater treatment plant, operated by RDCO, was calculated by two methods, which are summarized in **Table 1** below.

JURISDICTION	CALCULATION METHOD			
	Flow Monitor	Lift Station SCADA	Average	
District of Peachland	7.43%	7.43%	7.43%	
City of West Kelowna	67.96%	70.22%	69.05%	
Westbank First Nation	24.61%	22.35%	23.52%	
Wastewater Treatment Plant	100.00%	100.00%	100.00%	

 Table 1: WWTP Flow Splitting Results for 2020

The results from the two methods are within 2.3% of each other, which confirms that the flow meter data are reliable. Given that there is a significant financial impact for each percentage point in the allocation, it is recommended that the Flow Monitor method of calculation be adopted for the 2020 results as the Lift Station SCADA method relies on significantly more parcel counts and estimation than the Flow Monitoring method.

Recall that the District of Peachland is not included in the trunk sewer calculation since it has its own separate connection to the plant. Thus, the split for the regional trunks is calculated using the ratio of City of West Kelowna to Westbank First Nation flows. The 2020 regional trunk allocation is shown in **Table 2**.

Table 2: Regional Trunk Sewer Apportionment

FLOW SPLITTING FOR REGIONAL TRUNK SEWERS				
City of West Kelowna	73.4%			
Westbank First Nation	26.6%			

The flow splitting calculations and background of the monitoring program are explained in greater detail in the report:

- Section 1 of the report describes how the flow splitting by jurisdiction is undertaken.
- Section 2 provides details and results of the different flow splitting methods.
- Section 3 gives information and the flow monitoring devices used by the program.
- Section 4 list recommendations to improve the program.



1.0 FLOW MONITORING PROGRAM

1.1 BACKGROUND

The Regional District of Central Okanagan (RDCO) maintains and operates the regional wastewater treatment plant (WWTP) which provides service to the District of Peachland (DoP), the City of West Kelowna (CWK) and Westbank First Nation (WFN). The purpose of the flow monitoring program is to determine the flow contribution into the plant from each of the three jurisdictions for billing purposes.

RDCO also operates and maintains regional trunk sewers and lift stations that collect flows from West Kelowna and WFN customers. The District of Peachland has a direct connection to the treatment plant via the Okanagan Lake forcemain and is not considered a user of the regional trunks and lift stations.

Prior to 2011, the flow splitting for the WWTP was based upon the population within each municipality. While this method was considered fair and transparent, it relied on some broad assumptions regarding per-capita flow and had no mechanism to deal with vacant properties, part-time residents or visitors during peak tourist seasons. Also, the sewer flow for commercial properties varied significantly based on actual use.

In 2011, a cost allocation method based on measured sewer flow would be adopted to improve transparency and fairness in the flow-splitting program. Flows were already being measured at:

- the wastewater treatment plant;
- the Peachland Main lift station; and
- the IR10 (WFN) dosing chamber

All that remained was to measure the flows generated on IR9 (WFN) since the West Kelowna flows could be directly calculated as the WWTP flows less those from Peachland and WFN.

WWTP = DoP + CWK + IR9 (WFN) + IR10 (WFN)

CWK = WWTP - DoP - IR9 - IR10

1.2 FLOW MONITORING PROGRAM

The first flow monitoring devices were installed in April of 2011 and one device was situated on each of the three major trunks leaving Westbank First Nation IR#9 as shown on **Figure 1**.

- Two Eagles;
- Carrington Road; and
- East Boundary Road

The three flow monitoring devices measure most, but not all, of the flow from IR9. Missing from the recordings are several WFN properties along First Avenue and Boucherie Road. Also, there are some West Kelowna parcels located on the east side of East Boundary Road (Vineyard Road, Merlot Drive, Merlot Court) that must be subtracted from IR9 flow total.

In order to approximate the flows from these areas, a unit flow rate of 200 L/capita/day was applied to the equivalent population within each catchment. The value of 200 L/capita/day is consistent with the flow measurements through most of the CWK, Peachland and RDCO lift stations.





Figure 1 shows the WFN parcels that are not measured by a flow monitor as well as the West Kelowna properties that need to be subtracted from the monitor totals.

Thus, the estimated flow for each jurisdiction is estimated as follows:

Peachland	Measured by Main lift station meter/backup meter at WWTP
IR10	Measured by dosing chamber meter
IR9	Measured by three flow monitors
	 plus estimated flow from First avenue parcels, plus estimated flow from Boucherie Road parcels,

• less estimated flow from CWK parcels in Vineyard/Merlot Drive area

WFN IR9 flows plus IR10 flows

West Kelowna WWTP flows

- less Peachland flows
- Iess WFN flows.

1.3 DATA ERRORS AND CONFIDENCE

Initially, the flow monitoring data suffered from significant uncertainty since there was no historical of data to compare against. Operational challenges also plagued the program, including poor battery life and a need for increased maintenance from RDCO staff to keep the units free of obstructions in the flow stream.

In order to improve confidence in the data recorded, the Sewer Select Committee authorized the installation of three new meters. The new meters provided redundancy to the existing devices on the IR9 trunk mains and were installed in March of 2013. The redundancy meters have been very useful in providing a baseline or trend to compare the original meters against and have been used to help correct erroneous data when battery failures or flow stream clogs have occurred.

At the request of RDCO, an additional check on the flow monitoring program was created. This backup method – called the lift station method - uses the SCADA data from numerous pump stations along the East Trunk to provide a second estimate of the flows generated on IR9. This method does not use the data from the flow monitoring devices but applies an assumed unit flow rate to a greater population (area) than the monitoring method. **Figure 2** illustrates the areas that need to be estimated by applying a unit flow rate of 200 L/capita/day to the equivalent population.

Data for both methods are provided in Section 2 of this report.

The Two Eagles monitor has been problematic during the last few years, sometimes reading 50% of expected, and sometimes twice as much. A detailed review of the Two Eagles and Sonoma Pines upstream catchments was undertaken to provide more certainty on expected flows and examine the relationship between the two monitors to allow adjustment to Two Eagles using the Sonoma Pines trend where warranted. This is discussed further in Section 3.





CATCHMENTS AND EQUIVALENT POPULATIONS FOR LIFT STATION SCADA BACKUP CALCULATION METHOD



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2.0 ANALYSIS FOR 2020

2.1 FLOW MONITORING METHOD

The data from the monitoring devices is reviewed quarterly and summarized in a flow splitting report by jurisdiction. **Table 3** below summarizes the four quarters of 2019 and presents an annual average to be considered for billing purposes.

Table 3: Flow Monitoring Summary (2020)

	Q1	Q2	Q3	Q.4	ANNUAL
District of Peachland	7.15%	7.99%	8.37%	6.15%	7.43%
City of West Kelowna	65.08%	67.15%	67.84%	71.30%	67.87%
Westbank First Nation	27.77%	24.86%	23.79%	22.55%	24.70%
Wastewater Treatment Plant	100.00%	100.00%	100.00%	100.00%	100.00%

Please note that the results of the table above supersede any reporting provided during the course of the year. Data for each monitor is examined against data from before and after the subject quarter to ensure data quality, and to apply adjustments, as necessary.

Table 4 and 5 below are a historical summary of the flow splitting percentages and volumes since the program inception.

Table 4: Historical Flow Monitoring Percentages

	2020	2019	2018	2017	2016	2015
DoP	7.43%	6.59%	7.28%	9.90%	7.73%	7.7%
CWK	67.96%	72.04%	72.50%	71.00%	75.71%	73.3%
WFN	24.61%	21.37%	20.22%	19.10%	16.56%	19.0%
WWTP	100.00%	100.00%	100.00%	100.00%	100.00%	100.0%

Table 5: Historical Flow Monitoring Volumes (m³)

	2020	2019	2018	2017	2016	2015
DoP ⁽¹⁾	318,648	271,998	304,256	434,552	316,893	287,291
CWK ⁽²⁾	2,914,690	2,973,677	3,031,033	3,122,973	3,104,472	2,748,664
WFN ⁽³⁾	1,055,312	882,393	845,542	839,584	678,861	711,048
WWTP	4,288,650	4,128,068	4,180,831	4,397,109	4,100,226	3,747,003

(1) Peachland flows are heavily influenced by the level in Okanagan Lake. The flooding in 2017 had a dramatic impact on flows from the Main lift station.

(2) Many CWK lift stations are also influenced by Okanagan Lake Level. The Districts 2012 Water Conservation plan aimed for 10% reduction in water use by 2022.

(3) Development has proceeded rapidly on IR9 and 10, as seen in the trend data. Two Eagles monitor may have been under-reporting in the previous year. The catchment study in 2021 established strong confidence in Sonoma monitor data used to correct erratic Two Eagles readings. The proposed ultra-sonic sensor will provide a third level of reporting at this location to ensure volume accuracy.



2.2 LIFT STATION SCADA METHOD (BACKUP)

This method serves as a check on the flow monitoring devices using a different data set (pump station flow meter records). This method assumes the same per-capita flow rate (200 L/capita/day) as the monitor method for the catchments that are not measured by meters. A historical summary of the lift station SCADA method is provided in **Table 6**.

	2020	2019	2018	2017	2016	2015
DoP	7.43%	6.6%	7.3%	9.9%	7.70%	7.7%
CWK	70.22%	72.3%	71.4%	70.6%	74.95%	73.7%
WFN	22.35%	21.1%	21.3%	19.5%	17.32%	18.6%
WWTP	100.00%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6: Historical Lift Station SCADA (Backup) Percentages

2.3 WWTP RESULTS FOR 2020

The 2020 flow splitting results between the flow monitoring and lift station SCADA methods are shown in **Table 7** below. It is recommended to adopt the average value from the two methods given the small difference between the two methods.

Table 7: WWTP Flow Splitting Results for 2020

JURISDICTION		CALCULATION METHOD	
	Flow Monitor	Lift Station SCADA	Average
District of Peachland	7.43%	7.43%	7.43%
City of West Kelowna	67.96%	70.22%	69.05%
Westbank First Nation	24.61%	22.35%	23.52%
Wastewater Treatment Plant	100.00%	100.00%	100.00%

2.4 REGIONAL TRUNK APPORTIONMENT

Table 8 provides the regional trunk apportionment between CWK and WFN, based on the adopted values from **Table 7**. **Table 8** also includes historical data from previous years.

	2020	2019	2018	2017	2016	2015
City of West Kelowna	73.4%	77.3%	78.2%	78.8%	82.1%	79.4%
Westbank First Nation	26.6%	22.7%	21.8%	21.2%	17.9%	20.6%

Table 8: Regional Trunk Apportionment



2.5 DATA ERRORS IN SCADA

This section describes the errors encountered with the lift station and treatment plant SCADA data and the methods of reconciliation. Details for errors pertaining to the flow monitoring devices are explained in section 3 of this report.

The most prevalent error found in the SCADA data was a flow meter counter not resetting at midnight. These errors were easily seen when graphing the quarterly data and were rectified by subtracting the flow volumes of the previous day.

2.5.1 WASTEWATER TREATMENT PLANT ((WWTP)

No issues during any quarter

2.5.2 PEACHLAND MAIN LIFT STATION

- Q1 Meter did not reset March 9th. Subtracted value from previous day to correct.
- Q2 Meter did not reset May 26 & 29, June 23, 26 & 27. Subtracted value from previous day to correct.
- Q3 Meter did not reset August 14th. Subtracted value from previous day to correct.
- Q4 Meter did not reset November 18th. Subtracted value from previous day to correct.

2.5.3 EAST TRUNK LIFT STATION (REGIONAL)

- Q1 Meter did not reset March 9th. Subtracted value from previous day to correct.
- Q2 Meter did not reset May 29th. Subtracted value from previous day to correct.
- Q3 No issues
- Q4 No issues

2.5.4 DOSING CHAMBER (WFN IR10)

- Q1 Meter did not reset March 9th. Subtracted value from previous day to correct.
 Missing data March 12-18. Used rolling average of previous 7 days to fill gap.
- Q2 Meter did not reset May 29th. Subtracted value from previous day to correct.
 Missing data May 11-29. Used rolling average to previous 7 days to fill gap.
- Q3 No issues
- Q4 Near-zero readings October 16 to 22. Used a rolling average of previous 7 days to fill gap.

2.5.5 CASA LOMA LIFT STATION (REGIONAL)

No issues during any quarter



3.0 FLOW MONITORING DEVICES

The locations of the flow monitoring devices are shown on **Figure 1**, with the exception of the Glenrosa monitor.

All of the devices have had numerous battery and signal issues since the inception of the program in 2011, however increased maintenance and data collection by plant staff has improved data quality.

3.1 GLENROSA MONITOR

The Glenrosa flow monitor device is located along Gellatly Road, just north of the main line into the wastewater treatment plant. This monitor is not used in the calculation for the flow splitting process, but rather serves as a growth indicator for the Glenrosa catchment. Data from this device was used as part of another report for the District, entitled "Inflow and Infiltration – Phase 1" (April 2016).

3.2 CARRINGTON MONITOR

The Carrington flow monitor is located along Carrington Road, approximately two hundred (200) meters east of the Gellatly Road intersection. The monitor is perfectly situated at the catchment outlet and records flows from only WFN sewer customers.

Trend data for the Carrington flow monitor is shown graphically in **Appendix A**. As the graph in the appendix shows, there is a linear relationship between the Carrington monitor and the Louie Drive monitor, located upstream. The ratio between the two monitors has been used to correct data during times of poor data (dead battery, debris covering the monitor, etc.).

3.3 LOUIE DRIVE MONITOR

The Louie Drive monitor is located a few hundred meters upstream of the Carrington flow monitor. With the exception of a few days of no data (dead battery), the monitor has continuously trended in a smooth cyclical pattern, with peaks in the summer and dips in the fall and winter. The trend graph for the station is included as part of **Appendix A**.

3.4 TWO EAGLES MONITOR

The Two Eagles flow monitoring device is located near the Tuscany Villa development along Boucherie Road, where it meets Sonoma Pines Road. The monitor only records flow from WFN sewer customers.

The monitor is difficult to access and maintain and generated erratic data throughout the year. The expected daily volume, on average, based on upstream unit counts and area is 900 cubic meters per day. Readings varied from zero to over 1,400 cubic meters per day.

The trend data with the Sonoma monitor was used to adjust the erroneous data. The trend data for this device is provided in **Appendix B**.



3.5 SONOMA PINES (PREVIOUSLY ELK ROAD) MONITOR

The Sonoma monitor is located approximately 400 meters upstream of the Two Eagles monitor. Since its installation in 2017, the monitor has read higher than the Two Eagles site but has trended well with the other monitor. A recent calibration and cleaning of the device in November 2019 appears to have corrected the overly high reading to a value more in line with the Two Eagles monitor. A graph of the daily flow volume is shown in **Appendix B**, along with the Two Eagles monitor.

The 2020 data stream from Sonoma Pines showed little if any erroneous data and served as the basis to correct the Two Eagles flow values where necessary. The subcatchment between the Two Eagles and Sonoma monitors consists of approximately 222 residential units. Based on the unit types are area, the average difference between the two monitors is estimated at 200 cubic meters per day.

3.6 EAST BOUNDARY MONITOR

The East Boundary flow monitor is located near the intersection of Red Cloud Way and Boucherie Road. The monitor has trended well with the Boucherie monitor. The 2020 trend is provided graphically in **Appendix C**.

Both the East Boundary and Boucherie monitors experience occasional data spikes, which could be a result of peak flows from the upstream forcemain connected to the east Boundary lift station.

Based on the number and type of units between the Boucherie and East Boundary monitors, the expected daily volume difference is approximately 30 cubic meters.

The East Boundary monitor is used to correct data gaps in the Boucherie monitor (zero readings due to dead battery or odd spikes, where the Boucherie data reads lower than the upstream lift station) using the typical trend difference.

3.7 BOUCHERIE EAST BOUNDARY ROAD MONITOR

The Boucherie flow monitor trends well with the East Boundary monitor and lift station. There are occasional data spikes where the Boucherie monitor reads lower than the lift station volume, which is not possible. In these instances, the trend with the Eat Boundary monitor is used to adjust the Boucherie readings to a reasonable estimate where the spike appeared.

A review of the units and area between the Boucherie/East Boundary monitors and the East Boundary lift station was undertaken. Based on the number and types of units between the monitor pair and the lift station, the expected daily volume difference is estimated at 800 cubic meters.

The trend data for the East Boundary lift station, East Boundary monitor and the Boucherie flow monitor is included in **Appendix C**.



4.0 **<u>RECOMMENDATIONS</u>**

The Regional District is currently investigating the procurement and use of additional flow monitoring devices, to be placed at the Two Eagles and Boucherie sites. The new monitors will be ultra-sonic and may reduce maintenance call-outs for in-stream clogs that sometimes occur with the current monitoring devices.

The flowing recommendations are suggested to maintain or improve current levels of service:

- Provide data collection at no greater than one month intervals to catch monitor issues quickly.
- Frequently monitor Two Eagles monitoring device for clogs and battery life
- Consider relocating Two Eagles monitor if new ultra-sonic sensor also records erratic flow
- Continue to perform the lift station back-up method to verify monitoring results.



APPENDIX A: Flow monitor trend data Carrington and louie drive







APPENDIX B: Flow monitor trend data two eagles and sonoma pines







APPENDIX C: Flow monitor trend data Boucherie and east boundary









WESTSIDE REGIONAL WASTEWATER TREATMENT PLANT STAKEHOLDER SELECT COMMITTEE MEETING

From: Marilyn Rilkoff, Director of Financial Services

Date: Feb 6, 2021

RE: Westside Sewer System Draft 2021-2025 Financial Plan

Executive Summary:

Total Impacts and Cost Recovery from Each Partner/Participant:

Based on the proposed budgets for all sewer services combined, the total net increase is \$3,196, allocated as follows, taking into account the revised average 5 year flow splits:

	2020	Increase/(Decrease)	2021
City of West Kelowna	\$ 3,678,829	(\$ 43,917)	\$ 3,634,912
Westbank First Nation	1,105,986	52,273	1,158,259
Peachland	568,710	(11,552)	557,158
Total	\$ 5,353,525	\$ 3,196	\$ 5,350,329

The increases and decreases for each component of the service are explained in the report.

The financial plans are presented with reserve funding level increases from 45% to 50% of the recommended annual replacement amount. The impacts of a 55% option have also been presented, and should the committee choose that option, a net increase of \$25,441 in total would result.

Based on the 5 year average for flow splits, for the Treatment Plant, there is a 1.12% shift of all costs to WFN from West Kelowna (-1.07%) and Peachland (-0.05%), and for the RDCO Collector Systems, a shift of 1.2% to WFN from West Kelowna.

Recommendations:

THAT the Westside Regional Wastewater Treatment Plant Stakeholder Select Committee receive the Westside Sewer System Draft 2021-2025 Financial Plan Report for information; and

AND THAT the Committee recommends increasing reserve funding and capital levels from 45% to 50% of the recommended annual replacement amount, and to continue with 5% increases annually to continue to bridge the funding gap.

AND FURTHER THAT the Committee recommends the Westside Sewer System budgeted Draft 2021 – 2025 Financial Plans to the Board.

REVIEW OF BUDGET IMPACTS:

The Westside Sewer System Draft 2021 – 2025 Financial Plan is presented in the attachments. Detailed notes are provided within the budget spreadsheets.

Cost Sharing on the Basis of Flow Splits:

The 5 year average flow percentages for the Westside Regional Wastewater Treatment Plant are provided in the following table. There would be an increased shift in costs to WFN of 1.12% from West Kelowna and Peachland, even if there were no budget increase:

	2016	2017	2018	2019	2020	5 Year	5 Year	Change
	Data	Data	Data	Data	Data	Avg for	Avg	
						2021	2020	
City of West	75.71%	71.00%	72.50%	72.04%	67.96%	<mark>71.84%</mark>	72.91%	<mark>-1.07%</mark>
Kelowna								
Peachland	7.73%	9.90%	7.28%	6.59%	7.43%	<mark>7.79%</mark>	7.84%	<mark>-0.05%</mark>
Westbank First	16.56%	19.10%	20.22%	21.37%	24.61%	<mark>20.37%</mark>	19.25%	<mark>+1.12%</mark>
Nation								

The flow percentages for the sewer collection system budget are provided in the following table. There is a shift in costs from West Kelowna to WFN of 1.2%:

	2016 Data	2017 Data	2018 Data	2019 Data	2020 Data	5 Year Avg for 2021	5 Year Avg 2020	Change
City of West Kelowna	82.10%	78.80%	78.20%	77.30%	73.40%	<mark>77.96%</mark>	79.16%	<mark>-1.20%</mark>
Westbank First Nation	17.90%	21.20%	21.80%	22.70%	26.60%	<mark>22.04%</mark>	20.84%	<mark>+1.20%</mark>

Reserve Contribution Levels:

It is imperative that reserve and capital funding levels be increased from 45% to at least 50% and continue to increase thereafter as there are several large capital projects on the horizon listed below. The budgets attached show the 50% reserve contribution level.

- <u>401 WWTP \$5m estimated:</u>
 - 2021 \$2m Including:
 - \$644k Completion of 2020 \$2.4 m TWAS Vault project (funded 2/3 DCC's 1/3 Capital reserves)
 - \$300k Blowers. In 2020 staff applied for a grant of approximately \$690k for a \$1m project, but were not successful. This project still needs to be done but the remainder has been moved to future years.)
 - \$226k HVAC
 - \$258k Headworks Pumps
 - \$232k Facility Renewal
 - o 2022 & 2023: \$258k annually for Headworks Pumps
 - 2027: \$2m for roof replacement
- <u>470 RDCO Collector System \$8.3m (Class D estimates):</u>
 - 2021 Funding with DCC's (however, they are currently at insufficient levels to fund upcoming projects in 2023 - 2025. DCC Bylaw has been amended):

- \$800k for land and engineering and design for lift station in 2021
- \$1.175m for construction 2021 (capacity project)
- \$500k for Engineering & Design
- 2023-2025: \$5.7m As noted last year's financial plan, 20 year financing will be required unless grants are obtained. DCC Reserves are currently insufficient. DCC Bylaw has been amended.
 - 2023 \$500k Engineering & Design
 - 2024 \$1.2m Lift Station
 - 2025 \$4m Lift Station

Reserve Contribution Level Background:

In 2018 work was done by Urban Systems to prepare an Asset Management Investment Plan and DCC reports. As a by-product of this work, the Annual Capital Cost Replacement update used for calculating reserve contributions for budgeting was updated in 2019. This information was <u>first</u> prepared by Urban Systems in 2010 and used to set aside reserves.

In the past, the 2010 recommended annual rates of replacement cost recovery were used as the base line for annual contributions to reserves, plus annual capital additions, annualized over 40 years for the WWTP, and annual capital additions annualized over 20 years for the Collection Systems.

From 2010 - 2015, contrary to staff recommendations for higher contributions, the Stakeholder Committee recommended that funding levels be set at 30% of the annual amount in Urban Systems Report.

In 2016, the Committee agreed to and recommended an increase to 35% and that was supported by the Board.

In 2019, the current committee recognized the absolute importance of increasing reserve levels, and an annual contribution level of 40% was approved, and in 2020 45% was approved.

Staff recommends that these contribution levels continue to increase annually by at least 5% to build much needed reserves for the future, and to gain years of lost ground. Engineering Staff are continuing work to identify all projects.

2021 Options to increase percentage amounts transferred to reserves 50% or 55%:

The 50% level, which is a 5% increase, is recommended and shown in the budget based on prior discussions to gradually do annual increases. In 2020, there was a large surplus of \$350k, in large part, due to reductions in purchasing contacts savings for biosolids management costs. In the current budget presented, \$100,000 is recommended as a transfer to the Operating Reserves for emergency repairs and studies. This reserve offers flexibility in that a transfer could later be done into the capital reserve if necessary. The current reserve balance before the transfer is \$226k.

However, the committee is also asked to consider a 55% option in 2021. A regional biosolids facility has also been mentioned by other local governments. While savings have been achieved in the 2020 budget, the committee may wish to take the opportunity to set aside additional reserves as a result of these savings.

Reserve contributions at the various levels for each of the cost centres is shown in the next table, with differences from the 2020 45% level.

	<u>2020</u> 45%	<u>2021</u> 50%	<u>2021</u> <u>55%</u>	<u>100%</u>
WRWW Treatment Plant (401)	\$816,759	\$907,510	\$998,261	\$1,815,021
Increase over 2020 45% level		<mark>90,751</mark>	<mark>181,502</mark>	
Collection Systems:				
RDCO Sewer Collectors (470)	\$141,617	\$157,353	\$173,088	\$314,705
Increase over 2020 45% level		<mark>15,736</mark>	<mark>31,471</mark>	
Peachland Sewer (472)	\$19,367	\$21,519	\$23,670	\$43,037
· Increase over 2020 45% level		<mark>2,152</mark>	<mark>4,304</mark>	

If the 55% option is chosen staff would reduce the transfer to the operating reserve from \$100k to \$20k and the difference could then be used to gain ground on reserve transfers and move from 45% to 55%. The caution would be that if there is no surplus from 2021 carried forward to 2022, there could be a larger tax impact in 2022. Historically, there have been surpluses.

The total difference to each partner in 2021 at a 55% option would then be as follows:

	2020	Increase/(Decrease)	2021
City of West Kelowna	\$ 3,678,829	<mark>(\$ 23,926)</mark>	\$3,654,903
Westbank First Nation	1,105,986	<mark>57,931</mark>	1,163,917
Peachland	568,710	<mark>(8,563)</mark>	560,147
Total	\$ 5,353,525	<mark>\$ 25,441</mark>	\$ 5,378,966

This would have a beneficial impact for the Treatment Plant reserves in particular:

Estimated Reserve Balance Differences a	at 55% Level:		
		<u>2021</u>	2025
401 WWTP			
	50%	(1,015,502)	(3,945,469)
	55%	(1,106,253)	(4,408,390)
Estimated Increase at 55% level		(90,751)	<mark>(462,921</mark>)
470 RDCO Lift Stns/Collectors			
(Note: \$8m in lift station projects)	50%	(675,319)	(340,491)
Some reserves used.	55%	(691,054)	(420,756)
Estimated Increase at 55% level		(15,735)	(80,266)
472 Peachland Lift Stns/Collectors			
	50%	(200,832)	(296,360)
	55%	(202,983)	(307,335)
Estimated Increase at 55% level		(2,152)	(10,975)

Current Budget Presented (with 50% contribution levels):

Overall Impacts and Cost Recovery from Each Partner/Participant: Based on the proposed budgets for all sewer services, the total net increase is \$3,196 allocated as follows, taking into account the revised average 5 year flow splits:

- City of West Kelowna \$43,917 Decrease
- Westbank First Nation \$52,273 Increase
 \$11,552 Decrease
- Peachland \$11,552 Decrease

The table below compares the actual 2020 costs and projected 2021 costs for each partner / participant and for each sewer system-related budget, and the overall net total increase or decrease including collection systems (at the 50% level as presented).

	West I	<mark>Kelowna</mark>	Westba Nat	nk First ion	Peachland			
	2020	2021	2020	2021	2020	2021		
WRWW Treatment Plant (401)	\$3,282,883	\$3,238,094	\$866,760	\$918,216	\$353,008	\$350,934		
	<mark>\$44,789</mark>	Decrease	<mark>\$51,455</mark>	Increase	<mark>\$2,074 [</mark>	Decrease		
RDCO Sewer Trunk	\$395,946	\$ 396,818	\$ 104,238	\$ 112,184	N/A	N/A		
<mark>(470</mark>)								
	<mark>\$872 </mark>	ncrease	<mark>\$7,946 </mark>	ncrease				
						eachland 2021 08 \$350,934 74 Decrease N/A N/A 02 \$206,224 78 Decrease 10 \$557,158 52 Decrease		
WFN Sewer (471)	N/A	N/A	\$134,988	\$127,859	N/A	N/A		
			<mark>\$7,129 D</mark>	ecrease				
Peachland Sewer (472)	N/A	N/A	N/A	N/A	\$215,702	\$206,224		
					\$9,478 E	Decrease		
Total	\$3,678,829	\$3,634,912	\$1,105,986	\$1,158,259	\$568,710	\$557,158		
Total Difference	<mark>\$43,917</mark>	Decrease	<mark>\$52,2</mark> 73	Increase	\$11,552 Decrease			

Budget Highlights – Refer to detailed Budget Pages:

	<u>2020</u>	<u>2021</u>	Change
WRWW Treatment Plant (401)	\$4,502,652	\$4,507,244	\$4,592 increase
Collection Systems:			
RDCO Sewer Trunk (470)	\$500,184	\$509,002	\$8,818 increase
WFN Sewer (471)	\$134,988	\$127,859	\$7,129 decrease
Peachland Sewer (472)	\$215,702	\$206,224	\$9,478 decrease

1. WRWWTP (401):

Overall cost increase to partners is \$4,592. The 2020 Surplus swing of \$253k offset increased reserve transfers. Increase to Operating Costs:

• The \$28.6k increase to the operations line is primarily due to increases for payroll, chemicals, equipment, bio filters maintenance, biosolids management, and other minor line items, offset by decreases in biosolids removal costs, and vehicle operations.

Increase in Transfers to Reserves:

- As discussed earlier, it is imperative to increase the reserve and capital level funding from 45% to 50% as a result of several new capital projects that have been identified. The increase is \$82,225.
- \$100k of the increased surplus was transferred to the operating reserves.

Capital Projects:

- Total capital projects are \$2m in 2021. Note \$2m on the horizon in 2027 for roof.
 - Various projects including:
 - \$644k for completion of \$1.4m TWAS Vault Expansion

- \$300k for Blowers (\$700k on the horizon)
- \$258k Headworks Pumps, \$225.5k HVAC, \$184k vehicles, \$232k Facility Renewal, and other minor projects.
- 2. <u>The annual Engineering Overhead Rate has been increased from 3.3% to 3.8%.</u> <u>Administration Overhead has been increased from 14.5% to 15.4% in accordance with</u> <u>Board Policy.</u>
- 3. <u>RDCO Lift Stations / Collector Systems (470):</u>
 - \$8.8k budget increase to partners/participants.
 - Operating Cost increase \$13k primarily for Repairs & Maintenance.
 - Increase in transfer to reserves \$16.7k.
 - Total capital projects \$2.56m in 2021 with \$5.7m from 2023 2025, lift stations.
 - Note: Class D estimates for projects. More information required from Engineering and Design studies. These are capacity projects and would therefore qualify for DCC funding, however there are currently insufficient DCC reserves for the 2023 - 2025 projects, and \$4.4m in financing would be required if grants could not be obtained.
- 4. <u>WFN Lift Stations / Collector Systems (471):</u> \$7.1k Decrease for WFN for siphon flushing.
- 5. <u>Peachland Lift Stations / Collector Systems (472)</u>: Decrease of \$9.5k for Peachland. Operations costs decrease by \$9.3k for odor control & contract services. Reserves up by \$2k and increase to previous year's surplus offsets some of the increase.

Alternative Recommendations:

THAT the Westside Regional Wastewater Treatment Plant Stakeholder Select Committee receive the Westside Sewer System Draft 2021-2025 Financial Plan Report for information; and

AND THAT the Committee recommends increasing reserve funding and capital levels from 45% to 55% of the recommended annual replacement amount, and to continue with 5% increases annually to continue to bridge the funding gap.

AND FURTHER THAT the Committee recommends the Westside Sewer System budgeted Draft 2021 – 2025 Financial Plans to the Board with adjustments made by staff for the 55% funding option.

This is for the committee's consideration.

Attachments:

• Draft 2021 - 2025 Financial Plan pages for cost centres 401, 470, 471, and 472.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 PROGRAM BUDGET

Program: 401	Westside	Se	wer System	: W	astewater Tr	re	atment Pla	ant		m
Department: Engin	eering Services (S	Sewe	er Systems)							
	Se	ewe	r Revenue Fu	nd B	udget					
	2020 Budget		2020 Actual		Variance 2020 Act. vs. Bud.		2021 Budget		Variance: 2021 vs. 2020 Budget	
<u>Revenue:</u> Insurance Claim Recovery &										
Misc Rev.	(2,400)		(2,400)		0		(2,400)		0	
Services - Peachland	(353,008)		(353,008)		(0)		(350,934)	а	2,074	а
Services - West Kelowna	(3,282,883)		(3,282,883)		0		(3,238,094)	а	44,789	а
OBWB Sewer Grants	(25,310)		(25,310)		0		0	n	25,310	
COVID Restart Grant	0		(14,929)	С	(14,929)		(4,500)		(4,500)	
Previous Year's Surplus/Deficit	(97,339)		(97,339)		(0)		(350,399)	C,K	(253,059)	
Ingineering Admin OH	106,202		106,202		0		121,206		15,004	
Administration OH	466,647		466,647		0		491,202		24,555	
I ransfer from Operating Reserve	(69,000)		0	b	69,000 b	²	0		69,000	
Services - WFN	(866,760)		(866,760)				(918,216)	а	(51,455)	а
Total Revenue	(4,123,852)		(4,069,781)		54,071		(4,252,134)		(128,283)	
Expenses:	3 218 257		2 8 13 787	~	(404 470)		3 180 624	d	(28,633)	Ч
Francianto Equip Recorded	5,210,257		2,013,707		(404,470)		5,109,024	u	(20,033)	u
Tansier to Operating Reserve	25 310		25 310		0		100,000	e k	74 690	
Fransfer to Can Fac. Reserves	825 285		825 285		0		907 510	f	82 225	f
Total Expenses	4 123 852		3 719 382		(404 470)	ł	4 252 134	'	128 282	
	4,120,002		0,710,002		(404,410)	ł	4,202,104		120,202	
(Surplus) / Deficit	0		(350,399)	С	(350,399)		0		(0)	
FTE's	10.355					l	10.355		0	
Total Service Cost Recovered From Partners/Participants	(4,502,652)		(4,502,651)				(4,507,244)		(4,592)	
	S	0.00	or Canital Fur	d Bi	Idaet					

						Variance:
	2020	2020	Variance 2020	2021		2021 vs. 2020
	Budget	Actual	Act. vs. Bud.	Budget		Budget
Revenue				Ŭ		
Grants	(690,000)	0	690,000	(18,405)		671,595
Sale of Assets	(4,000)	(2,000)	2,000	0	о	4,000
From Equipment Reserves	(387,400)	(68,826)	318,574	(255,060)	0	132,340
From Capital Facility Reserves	(1,495,380)	(576,013)	919,367	(1,306,485)	h	188,895
From DCC Reserve Fund	(1,266,667)	(837,307)	429,360	(429,360)	h	837,307
Total Revenue	(3,843,447)	(1,484,145)	2,359,302	(2,009,310)		1,834,137
Expenses						
HVAC	162,960	52,193	(110,767)	225,500	g	62,540
Vehicles	268,571	40,583	(227,988)	183,560	g	(85,011)
Engineering & Design Costs	27,488	25,795	(1,693)	25,750		(1,738)
TWAS Vault Expansion	1,900,000	1,255,960	(644,040)	644,040	gh	(1,255,960)
Headworks Pumps	371,568	79,372	(292,196)	258,000	g	(113,568)
Equipment/Improvements	25,000	16,196	(8,804)	25,750		750
Lab Equipment	45,000	14,047	(30,953)	20,000		(25,000)
Security System	10,000	0	(10,000)	51,500		41,500
Bioreactors	32,860	0	(32,860)	32,860		0
Odor Control	0	0	0	10,600		10,600
Blowers	1,000,000	0	(1,000,000)	300,000	fg	(700,000)
Facility Renewal	0	0	0	231,750		231,750
Total Expenses	3,843,447	1,484,145	(2,359,302)	2,009,310		(1,834,137)
(Surplus) / Deficit	0	0	0	0		0
Equip. Reserve Fund Balance at Y/E		(325,082)		(125,722)	е	
Capital Facility Reserve Balance at Y/	E	(1,413,407)		(1,015,502)	f	
DCC Reserve Fund		(3,773,809)		(3,977,893)	h,i	
Operating Reserve Fund Bal. at Y/E		(226,058)		(328,319)	c,k	

2021 Budget Notes:

a. Updated 5 year average flow splits. Shift in splits from West Kelowna (-1.07%) & Peachland (-0.05%) to WFN totalling 1.12%.

b. \$69k of operating reserve not required as budgeted in 2020.

c. Surplus resulting from unanticipated COVID Restart Grant \$14.9k and under expenditures for Biosolids mgmt \$94.2k, Equipment Rep & Mtce \$72.9k, Biosolids removal \$58.3k, Contract Services \$54.3k, Payroll \$41.6k, Centrifuge Mtce \$25.8k, Odor Ctrl Chemicals \$25.7k, Biofilter Mtce \$17.4k, Electrical Rep & Mtce \$10.6k, and misc. under \$10k. Grounds Mtce and Bldg Assessment Operations unspent. Overexpenditures for Polymer Chemicals \$24.7k, Electricity-Plant \$19.9k and misc. under \$10k.

d. Increases: Payroll \$15.3k, Telephone \$2k, Insurance \$4k, Poly Chemicals \$13k, Gas & Fuel \$1k, Lab Supplies \$10k, UV Lighting \$2.5k, Safety Supplies \$4.5k, Chlorine & SO2 Gas \$1k, Legal Fees \$1.5k, Biofilter Mtce \$20k, Biosolids Mgmt \$35k, Sewer Line Mtce \$1k, Equipment \$18k, Bldg Equip Assmt Operations \$5k. Decreases: Electricity (Plant) \$5k, Water \$1k, Biosolids Removal \$130k, Centrifuge Mtce \$5k, Equipment Rental \$1k, Vehicle Operations \$20k.

e. As per previous financial plans, \$55k is to be transferred annually to equipment reserve (not included in facility replacement calculations.)

f. The approved Capital / Reserve Contribution Level was raised to 40% of the estimated annual capital cost replacement level in 2019 based on updated Urban Systems Report. Reserve balances are still falling behind capital needs. The funding level must continue to increase. It is imperative that the funding level continue to be raised annually to be able to fund anticipated upcoming capital needs. In 2020 it was increased to 45% and this budget shows 50%.

Staff has advised of Roof replacement coming in 2027 estimated at \$2m. Future project needs are also being examined. \$1m blower project will also need to be done within the next few years.

g. Includes 2020 carry forwards.

- h. Increasing capacity. 2/3 of project funded with DCC's as per Engineering Staff.
- Conservatively assumes \$600k in DCC's are collected annually, however this is likely to be higher. DCC Bylaw has been updated. i.
- Lift Stations and Collector Systems are budgeted as separate cost centres 470, 471 & 472 simply to track the costs at j. the request of the partners, but are part of the overall Westside Sewer Service.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 - 2025 Five Year Program Budget Projections

401 -- Westside Sewer System: Wastewater Treatment Plant

Department:

Program:

Engineering Services (Sewer Systems)

Sewer Revenue Fund Budgets											
	2021 Budget		2022 Projected		2023 Projected		2024 Projected	2025 Projected			
Revenue: Misc. Rev. Services - Peachland Services - West Kelowna OBWB Sewer Grants COVID Restart Grant Previous Year's Surplus/Deficit Engineering Admin OH Administration OH Transfer from Operating Reserve Services - WFN Total Revenue Expenses: Operations Transfer to Equip. Reserves Transfer to Operating Reserve Transfer to Operating Reserves Transfer to Operating Reserves Transfer Cap. Facility Reserves Total Expenses (Surplus) / Deficit	(2,400) (350,934) (3,238,094) 0 (4,500) (350,399) 121,206 491,202 0 (918,216) (4,252,134) 3,189,624 55,000 100,000 907,510 4,252,134 0	bk c e k f	0 (374,994) (3,460,102) 0 0 122,855 497,885 0 (981,170) (4,195,527) 3,233,016 55,000 0 907,510 4,195,527 0	d e	0 (380,996) (3,515,474) 0 0 125,312 507,842 0 (996,871) (4,260,187) 3,297,677 55,000 0 907,510 4,260,187 0	e	0 (387,117) (3,571,954) 0 0 0 127,818 517,999 0 (1,012,887) (4,326,141) 3,363,630 55,000 0 907,510 4,326,141 0 0	$\begin{array}{c} 0\\ (393,360)\\ (3,629,562)\\ 0\\ 0\\ 0\\ 130,374\\ 528,359\\ 0\\ (1,029,223)\\ (4,393,413)\\ \hline 3,430,903\\ 55,000\\ 0\\ 907,510\\ \hline 4,393,413\\ \hline 1\\ \hline \end{array}$			
FTE's	10.355		10.355		10.355		10.355	10.355			
Total Service Cost Recovered From Partners/Participants	(4,507,244)		(4,816,266)		(4,893,341)		(4,971,958)	(5,052,146)			
Sewer Capital Fund Budgets											
Revenue	2021 Budget		2022 Projected Budget		2023 Projected Budget		2024 Projected Budget	2025 Projected Budget			
Revenue Grants From Equipment Reserves From Capital Facility Reserves From DCC Reserve Fund Total Revenue Expenses HVAC Vehicles Engineering & Design Costs TWAS Vault Expansion Headworks Pumps Equipment/Improvements Lab Equipment Security System Bioreactors Odor Control Blowers Facility Renewal Total Expenses (Surplus) / Deficit	(18,405) (255,060) (1,306,485) (429,360) (2,009,310) 225,500 183,560 25,750 644,040 258,000 25,750 20,000 51,500 32,860 10,600 300,000 231,750 2,009,310 0	h g gh g	0 (46,150) (320,960) 0 (367,110) 0 20,400 0 257,500 257,500 257,500 0 0 32,860 30,600 0 0 32,860 30,600 0 0 0		$\begin{array}{c} 0\\ (25,750)\\ (300,960)\\ 0\\ (326,710)\\ \end{array}$ $\begin{array}{c} 0\\ 0\\ 0\\ 0\\ 0\\ 0\\ 257,500\\ 25,750\\ 0\\ 0\\ 25,750\\ 0\\ 0\\ 32,860\\ 10,600\\ 0\\ 0\\ 326,710\\ \end{array}$		$\begin{array}{c} 0 \\ (25,750) \\ (79,510) \\ 0 \\ (105,260) \\ \end{array}$ $\begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 25,750 \\ 0 \\ 0 \\ 32,860 \\ 10,600 \\ 0 \\ 32,860 \\ 10,600 \\ 0 \\ 32,860 \\ 10,600 \\ 0 \\ 36,050 \\ 105,260 \\ \end{array}$	$\begin{array}{c} 0 \\ (25,750) \\ (70,240) \\ 0 \\ (95,990) \\ \end{array}$ $\begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 25,750 \\ 0 \\ 0 \\ 25,750 \\ 0 \\ 0 \\ 32,860 \\ 10,600 \\ 0 \\ 26,780 \\ 95,990 \\ \hline \end{array}$			
Equip. Reserve Fund Balance at Y/E Capital Facility Reserve Bal. at Y/E	(125,722) (1,015,502)	e f	(135,368) (1,608,997)	e f	(165,714) (2,228,628)	e f	(196,364) e (3,078,120) f	(227,320) e (3,945,469) f			
DCC Reserve Fund Operating Reserve Bal. at Y/E	(3,977,893)	hi k	(4,617,672)	i	(5,263,849)	i	(5,916,488) i (338,267)	(6,575,653) i (341,650)			

Notes

a. Updated 5 year average flow splits. Shift in splits from West Kelowna (-1.07%) & Peachland (-0.05%) to WFN totalling 1.12%.

b. Surplus resulting from unanticipated COVID Restart Grant \$14.9k and under expenditures for Biosolids mgmt \$94.2k, Equipment Rep & Mtce \$72.9k, Biosolids removal \$58.3k, Contract Services \$54.3k, Payroll \$41.6k, Centrifuge Mtce \$25.8k, Odor Ctrl Chemicals \$25.7k, Biofilter Mtce \$17.4k, Electrical Rep & Mtce \$10.6k, and misc. under \$10k. Grounds Mtce and Bldg Assessment Operations unspent. Overexpenditures for Polymer Chemicals \$24.7k, Electricity-Plant \$19.9k and misc. under \$10k.

c. Increases: Payroll \$15.3k, Telephone \$2k, Insurance \$4k, Poly Chemicals \$13k, Gas & Fuel \$1k, Lab Supplies \$10k, UV

n

- Lighting \$2.5k, Safety Supplies \$4.5k, Chlorine & SO2 Gas \$1k, Legal Fees \$1.5k, Biofilter Mtce \$20k, Biosolids Mgmt \$35k, Sewer Line Mtce \$1k, Equipment \$18k, Bldg Equip Assmt Operations \$5k. Decreases: Electricity (Plant) \$5k, Water \$1k, Biosolids Removal \$130k, Centrifuge Mtce \$5k, Equipment Rental \$1k, Vehicle Operations \$20k.
- d. Remove \$20k for ChemScan Repair.
- e. As per previous financial plans, \$55k is to be transferred annually to equipment reserve (not included in facility replacement calculations.)
- f. The approved Capital / Reserve Contribution Level was raised to 40% of the estimated annual capital cost replacement level in 2019 based on updated Urban Systems Report. Reserve balances are still falling behind capital needs. The funding level must continue to increase. It is imperative that the funding level continue to be raised annually to be able to fund anticipated upcoming capital needs. In 2020 it was increased to 45% and this budget shows 50%.
 - Staff has advised of Roof replacement coming in 2027 estimated at \$2m. Future project needs are also being examined.
 - \$1m blower project will also need to be done within the next few years.
- g. Includes 2020 carry forwards.
- h. Increasing capacity. 2/3 of project funded with DCC's as per Engineering Staff.
- i. Conservatively assumes \$600k in DCC's are collected annually, however this is likely to be higher. DCC Bylaw has been updated.
- j. Lift Stations and Collector Systems are budgeted as separate cost centres 470, 471 & 472 simply to track the costs at the request of the partners, but are part of the overall Westside Sewer Service.
- k. Transfer portion of surplus to Operating Reserve for future emergency repairs, studies, etc.

401, 470, 471, 472 - Westside Wastewater / Sewer System Schedule A - Flow Split Percentages Applied to Calculate 2021 - 2025 Revenue Contributions

Flow Splits for Budg	et Year with	<mark>i 5 Year Ro</mark>	lling Averagi	<u>ng:</u>				
Note: Annual Flow s	plits are ba	sed on the	prior year's	actual data pro	wided by Urban Syt	ems.		
	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u> <u>5 Yr Avg</u>	<u>Prior Year</u> <u>Avg</u>	<u>Change</u>
401 - WWTP	75 740/	74 000/	70 500/	70.040/	67.060/	74.040/	70.040/	4.070/
Peachland	7 73%	0 00%	7 2.50%	6 59%	07.90%	7 1.84%	7 2.91%	-1.07%
WFN	16 56%	19 10%	20.22%	21 37%	24 61%	20.37%	19 25%	1 12%
	1010070		*	2	2	2010170	1012070	
470 Trunk Lines								
CWK	82,10%	78.80%	78.20%	77.30%	73.40%	77.96%	79.16%	-1.20%
WFN	17.90%	21.20%	21.80%	22.70%	26.60%	22.04%	20.84%	1.20%
* 2017 was	a record floo	d vear	*					
2017 Was a		u year.						
ESTIMATED REVEN	JE BREAKD	OWN		<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Sowor Poyonuo Euro	Broakdow	n						
Sewer Revenue Fund		<u></u>						
401 - WWTP	2021	<u>2020</u>						
CWK	71.84%	73.34%		(3,238,094)	(3,460,102)	(3,515,474)	(3,571,954)	(3,629,562)
Peachland	7.79%	8.44%		(350,934)	(374,994)	(380,996)	(387,117)	(393,360)
WFN	20.37%	18.22%		(918,216)	(981,170)	(996,871)	(1,012,887)	(1,029,223)
		Subtotal		(4,507,244)	(4,816,266)	(4,893,341)	(4,971,958)	(5,052,146)
470 - Trunk Lines								
CWK	77.96%	80.10%		(396,818)	(439,887)	(446,231)	(459,719)	(536,924)
WFN	22.04%	19.90%		(112,184)	(124,360)	(126,154)	(129,967)	(151,793)
		Subtotal		(509,002)	(564,247)	(572,385)	(589,685)	(688,717)
			Fees	(5,016,246)	(5,380,513)	(5,465,726)	(5,561,643)	(5,740,863)
Collection Systems								
472 - Peachland	100%	100%		(206,224)	(243,690)	(248,134)	(252,666)	(257,289)
471 - WFN	100%	100%		(127,859)	(154,947)	(158,046)	(161,206)	(164,431)
		Subtotal		(334,083)	(398,637)	(406,179)	(413,872)	(421,719)
		Grand Tota	l :	(5,350,329)	(5,779,150)	(5,871,905)	(5,975,515)	(6,162,582)
Summary of all estim	nated fees b	oy area:						
CWK				(3,634,912)	(3,899,989)	(3,961,705)	(4,031,673)	(4,166,486)
Peachland				(557,158)	(618,685)	(629,129)	(639,783)	(650,649)
				(1, 100, 209)	(1,200,476)	(1,281,071) (5.871.905)	(1,304,000)	(1,345,447)
rotar rees				(0,000,020)	(0,110,100)	(0,071,000)	(0,010,010)	(0,102,002)

Notes:

a. The flow revenues fluctuate from year to year, which will impact the revenue split from each jurisdiction in the future.

401, 470, 471, 472 - Westside Wastewater / Sewer System

Schedule B - 2015 Flow Split Percentages Applied to Calculate 2021 Reserve Contributions

included in Budget.

Additional Breakdown of Budget Information regarding Reserve Contribution Levels as requested by participants:

Capital & Reserve Contribution Breakdown - With 50% Capital / Reserve Contributions:

	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
401 - WWTP (per Urban Systems report)					
CWK 71.84% a	656,946	656,946	656,946	656,946	656,946
Peachland 7.79% a	71,198	71,198	71,198	71,198	71,198
WFN 20.37% a	186,288	186,288	186,288	186,288	186,288
	914,432	914,432	914,432	914,432	914,432
Net Plant Additions: x 45% over	avg. 40 years operational at the e	nd of 2019			
CWK 71.84% a	(4,972)	(4,972)	(4,972)	(4,972)	(4,972)
Peachland 7.79% a	(539)	(539)	(539)	(539)	(539)
WFN 20.37% a	(1,410)	(1,410)	(1,410)	(1,410)	(1,410)
	(6,921)	(6,921)	(6,921)	(6,921)	(6,921)
Totals by Area for WWTP Reserves:					
CWK 71.84% a	651,974	651,974	651,974	651,974	651,974
Peachland 7.79% a	70,659	70,659	70,659	70,659	70,659
WFN 20.37% a	184,878	184,878	184,878	184,878	184,878
Total WWTP Capital & Reserve	Contributions 907 510	907 510	907 510	907 510	907 510

Additional Breakdown of Budget Information regarding Reserve Contribution Levels as requested by participants:

Capital & Reserve Contribution Breakdown - With 45% Capital / Reserve Contributions :

		2021	2022	2023	2024	2025
470 - Lift Stations (pe	er Urban Svstems report)					
CWK	77.96% a	53,529	53.529	53.529	53,529	53.529
WFN	22.04% a	15,133	15,133	15,133	15,133	15,133
		68,663	68,663	68,663	68,663	68,663
c. Net Additi	ions (x 45% over avg 20 vears) opera	tional at the end o	of the year			
CWK	77.96% a	1,144	1.144	1,144	1,144	1,144
WFN	22 04% a	323	323	323	323	323
		1,467	1,467	1,467	1,467	1,467
470 - Trunk Lines (pe	er Urban Systems report)					
CWK	77.96% a	67,999	67,999	67,999	67,999	67,999
WFN	22.04% a	19.224	19.224	19.224	19,224	19,224
		87,223	87,223	87,223	87,223	87,223
c. Net Additi	ions (x 45% over avg. 20 vears) oper	ational at the end	of the vear			
CWK	77.96% a	0	0	0	0	0
WFN	22.04% a	0	0	0	0	0
		0	0	0	0	0
Trunk Lines (per Urba	an Systems report)					
472 - Peachlan	d 100% b	21,519	21,519	21,519	21,519	21,519
Total Trunk Lines		108,742	108,742	108,742	108,742	108,742
Totals by Area f	or Lift Stations & Trunk Lines:					
CWK		122,672	122,672	122,672	122,672	122,672
WFN		34,681	34,681	34,681	34,681	34,681
	Subtotal RDCO Collector Systems	157,353	157,353	157,353	157,353	157,353
Peachlan		21,519	21,519	21,519	21,519	21,519
lotal Lift	Station & Trunk Line Contributions	178,871	1/8,8/1	178,871	1/8,8/1	178,871

Notes:

a. The flow revenues fluctuate from year to year, which will impact the revenue split from each jurisdiction in the future.

b. Peachland pays 100% for the Marine Force Main.

c. Asset report and annual capital cost replacement amount has been updated by Urban Systems in 2019 and additions or deletions have been made to those numbers based on capital work done.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 PROGRAM BUDGET

Program:

470 -- Westside Sewer System: RDCO Lift Stations/ Collector Systems

Sower Dovenue Fund Budget

Department:

Engineering Services (Sewer Systems)

Sewer Nevenue Fund Budger												
					Variance:							
	2020	2020	Variance 2020	2021	2021 vs. 2020							
	Budget	Actual	Act. vs. Bud.	Budget	Budget							
Revenue:												
Services - West Kelowna	(395,946)	(395,946)	0	(396,818)	a (872)							
COVID Restart Grant	0	(36)	(36)	0	0							
Previous Year's Surplus/Deficit	(12,883)	(12,883)	(0)	(47,266)	b (34,384)							
Transfer From Operating Reserve	(6,237)	0	6,237	0	6,237							
Engineering Admin OH	10,608	10,608	0	12,717	2,109							
Administration OH	46,609	46,609	0	51,538	4,929							
Services - WFN	(104,238)	(104,238)	0	(112,184)	a (7,946)							
Total Revenue	(462,087)	(455,886)	6,201	(492,014)	(29,927)							
Expenses:												
Operations	321,441	267,973	b (53,468) b	334,661	c 13,220 c							
Transfer to Capital Fac. Reserves	140,646	140,646	0	157,353	d <u>16,707</u>							
Total Expenses	462,087	408,619	(53,468)	492,014	29,927							
(Surplus) / Deficit	0	(47,266)	b <u>(47,267)</u>	0	(0)							
FTE's	0.76			0.76	0.00							
Total Service Cost Recovered From												
Partners/Participants	(500 184)	(500 184)		(509.002)	(8 818)							
	(000,104)	(000,104)		(000,002)	(0,010)							

Sewer Capital Fund Budget

	2020 Budget	2020 Actual	Variance 2020 Act. vs. Bud.	2021 Budget	Variance: 2021 vs. 2020 Budget
Revenue Transfer from Cap Fac. Reserve Transfer from DCC Reserve Total Revenue Expenses Pumps (Headworks) Flow Meters Communication Electrical	(102,860) (990,000) (1,092,860) 25,000 21,770 13,500	(53,146) 0 (53,146) 0 18,686 0	49,714 990,000 1,039,714 (25,000) (3,084) (13,500)	(105,000) (2,450,250) (2,555,250) 25,000 21,000 0	e (2,140) (1,460,250) (1,462,390) 0 (770) (13,500)
Lift Station Land Engineering & Design Cost Lift Station - Collector Equipment & Improvements Total Expenses (Surplus) / Deficit	500,000 523,000 0 9,590 1,092,860 0	0 34,460 0 53,146 0	(500,000) (488,540) 0 (9,590) (1,039,714) 0	800,000 500,000 1,175,000 34,250 2,555,250 0	e 300,000 e (23,000) e 1,175,000 24,660 1,462,390 0
East Trunk Line DCC Reserve Fund Capital Facility Reserve Balance at Y/E Operating Reserve Bal. at Y/E		(2,380,797) (617,838) (6,346)		(54,355) (675,319) (6,409)	f d

2021 Budget Notes:

a. 5 year flow split average average shift of 1.2% from West Kelowna to WFN.

- b. Surplus due to under expenditures in sewer line mtce & flushing, contract services, odour control chemicals, payroll, vehicle operations, and lift stn-utilities. Electrical repairs & mtce \$11.3k higher than anticipated.
- c. Increases: Payroll \$1.2k, Telephone \$0.4k, Insurance \$0.6k, Electrical Rep. & Mtce \$3k, Lift Stns Repairs & Mtce \$12.5k,
- Bldg/Equip Assessment \$0.5k. Decreases: Odor Control Chem. \$5k
- d. The approved Capital / Reserve Contribution Level was raised to 40% of the estimated annual capital cost replacement level in 2019 based on updated Urban Systems Report. Reserve balances are still falling behind capital needs. The funding level must continue to increase. It is imperative that the funding level continue to be raised annually to be able to fund anticipated upcoming capital needs. In 2020 it was increased to 45% and this budget shows 50%.
- e. Engineering to provide additional information. Class D estimates for lift station projects. Costs and recommendations are dependent on Engineering & Design study. 2021 information is for financial planning purposes. The project should be funded primarily by DCC's as this is capacity related. Grants may be available. DCC reserves are now insufficient to fund the two projects including 2024 & 2025. Since DCC's should be used, financing would then be required. Some reserves would be used. but these should be kept for funding asset replacement as planned.
- f. Conservatively assumes increase to DCC's of \$100,000. DCC Bylaw has been updated. Future funds dependent on development.

Program: 470 -- Westside Sewer System: RDCO Lift Stations/ Collector Systems

Department:

Engineering Services (Sewer Systems)

	Sewer	Reve	enue Fund B	udg	<u>gets</u>				
			2022		2023	2024	I	2025	I
	2021		Projected		Projected	Projected	i	Projected	Ĺ
	Budget		Budget		Budget	Budget	i	Budget	Ĺ
Revenue:							i		Ĺ
Services - West Kelowna	(396,818)	а	(439,887)		(446,231)	(459,719)		(536,924)	Ĺ
Previous Year's Surplus/Deficit	(47,266)	b	0		0	0		0	Ĺ
Engineering Admin OH	12,717		12,971		13,231	13,496	i	13,765	Ĺ
Administration OH	51,538		52,569		53,620	54,692	i	55,786	Ĺ
Services - WFN	(112,184)	а	(124,360)		(126,154)	(129,967)		(151,793)	Ĺ
Total Revenue	(492,014)		(498,707)		(505,534)	(521,497)	i i	(619,165)	Ĺ
Expenses:						055 145	1	000.040	
Operations	334,661	С	341,354		348,181	355,145		362,248	Í.
Debt Payments	457.050		457.050		457.050	9,000	е	99,000	e
Transfer to Capital Fac. Reserve	107,303	a	107,303		107,303	107,303	i	107,303	Ĺ
Total Expenses	492,014		496,707		505,534	521,497	i	619,105	Ĺ
(Surplus) / Deficit	0		0		0	0	1	0	
									i
FTE's	0.76	l	0.76	l	0.76	0.76		0.76	l
Total Service Cost Recovered From Partners/Participants	(509,002)		(564,247)		(572,385)	(589,685)		(688,717)	

Sewer Capital Fund Budgets

]	2022		2023		2024		2025	
	2021		Projected		Projected		Projected		Projected	
	Budget		Budget		Budget		Budget		Budget	
Revenue										
Capital Financing	0		0		0		(600,000)	е	(3,750,000)	е
Transfer from Cap Fac. Reserve	(105,000)		(63,540)		(265,450)	е	(500,000)	е	(150,000)	е
Transfer From DCC Reserve	(2,450,250)	е	0		(250,000)	е	(100,000)	е	(100,000)	е
Total Revenue	(2,555,250)		(63,540)		(515,450)		(1,200,000)		(4,000,000)	
Expenses										
Pumps (Headworks)	25,000		0		0		0		0	
Facility Renewal	0		45,000		0		0		0	
Flow Meters	21,000		15,450		15,450		0		0	
Lift Station Land	800,000	е	0		0		0		0	
Engineering & Design Cost	500,000	е	0		500,000	е	0		0	
Lift Station - Collector	1,175,000		0		0		1,200,000	е	4,000,000	е
Equipment & Improvements	34,250		3,090		0		0		0	
Total Expenses	2,555,250		63,540		515,450		1,200,000		4,000,000	
(Surplus) / Deficit	0		0		0		0		0	
		1								
East Trunk Line DCC Reserve Fund	(54,355)	e,f	(154,899)	e,f	(6,448)	e,f	(6,512)	e,f	(6,577)	e,f
Capital Facility Reserve Bal. at Y/E	(675,319)	d	(775,249)		(672,250)	е	(331,325)	е	(340,491)	е
Operating Reserve Bal. at Y/E	(6,409)		(6,474)		(6,538)		(6,604)		(6,670)	

Notes

a. 5 year flow split average average shift of 1.2% from West Kelowna to WFN.

Surplus due to under expenditures in sever line mice & flushing, contract services, odour control chemicals, payroll, vehicle operations, and lift stn-utilities. Electrical repairs & mice \$11.3k higher than anticipated.

c. Increases: Payroll \$1.2k, Telephone \$0.4k, Insurance \$0.6k, Electrical Rep. & Mtce \$3k, Lift Stns Repairs & Mtce \$12.5k,

Bldg/Equip Assessment \$0.5k. Decreases: Odor Control Chem. \$5k

- d. The approved Capital / Reserve Contribution Level was raised to 40% of the estimated annual capital cost replacement level in 2019 based on updated Urban Systems Report. Reserve balances are still falling behind capital needs. The funding level must continue to increase. It is imperative that the funding level continue to be raised annually to be able to fund anticipated upcoming capital needs. In 2020 it was increased to 45% and this budget shows 50%.
- e. Engineering to provide additional information. Class D estimates for lift station projects. Costs and recommendations are dependent on Engineering & Design study. 2021 & 2024/25 project information is for financial planning purposes. The project should be funded primarily by DCC's as these are capacity related. Grants may be available. DCC reserves are currently insufficient to fund these two projects for 2021 & 2024/25. Since DCC's should be used, funding is shown with financing since reserves should be kept for asset replacement. When more information is known, the financial plan will be refined.
 As an estimate 20 year financing al 3% in 2021 and then 4% for 2024 has been shown

As an estimate, 20 year financing at 3% in 2021 and then 4% for 2024 has been shown. f. Conservatively assumes increase to DCC's of \$100,000. DCC Bylaw is being updated. Future funds dependent on development.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 PROGRAM BUDGET

Program: 471 -- Westside Sewer System: WFN Lift Stations/ Collector Systems

Department:

Engineering Services (Sewer Systems)

Sewer Revenue Fund Budget

2	2020 Budget	2020 Actual	Variance 2020 Act. vs. Bud.	2021 Budget	Variance: 2021 vs. 20 Budget	20
<u>Revenue:</u>		(20)	(20)	0		0
COVID Restant Grant		(30)	(30)			0
Previous Year's Surplus/Deficit	(24,393)	(24,393)	0	(24,050)	a 34	3
Engineering Admin OH	4,465	4,465	0	4,843	37	8
Administration OH	19,618	19,618	0	19,626		8
Services - WFN	(134,988)	(134,988)	(0)	(127,859)	7,12	9
Total Revenue	(135,298)	(135,329)	(31)	(127,440)	7,85	8
Expenses:						
Operations	135,298	111,278	(24,020)	127,440	b (7,85	8) b
Total Expenses	135,298	111,278	(24,020)	127,440	(7,85	<u>8)</u>
(Surplus) / Deficit	0	(24,050)	a (24,050)	0		0
FTE's	0.42			0.42	0.0	0

2021 Budget Notes:

a. Surplus due to lower lift stn repairs & mtce, contract services, odour control chemicals, and training.

b. Increases: Payroll \$0.6k, Telephone \$1k, Electrical Rep. & Mtnce \$1.5k, Utilities \$0.5k.

Decreases: Siphon Flushing \$7.5k, Lift Stns Rep. & Mtce \$4k.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 - 2025 Five Year Program Budget Projections

Program: 471 -- Westside Sewer System: WFN Lift Stations/ Collector Systems

Department:

Engineering Services (Sewer Systems)

Sewer Revenue Fund Budgets

			0000	 0000	0004	1	0005
			2022	2023	2024		2025
	2021		Projected	Projected	Projected		Projected
	Budget		Budget	Budget	Budget		Budget
Revenue:							
Previous Year's Surplus/Deficit	(24,050)	а	0	0	0		0
Engineering Admin OH	4,843		4,940	5,038	5,139		5,242
Administration OH	19,626		20,018	20,419	20,827		21,244
Services - WFN	(127,859)		(154,947)	(158,046)	(161,206)		(164,431)
Total Revenue	(127,440)		(129,989)	(132,589)	(135,240)		(137,945)
Expenses:							
Operations	127,440	b	129,989	132,589	135,240		137,945
Total Expenses	127,440		129,989	132,589	135,240		137,945
(Surplus) / Deficit	0		0	0	0		0
FTE's	0.42		0.42	0.42	0.42		0.42

Notes

a. Surplus due to lower lift stn repairs & mtce, contract services, odour control chemicals, and training.

b. Increases: Payroll \$0.6k, Telephone \$1k, Electrical Rep. & Mtnce \$1.5k, Utilities \$0.5k. Decreases: Siphon Flushing \$7.5k, Lift Stns Rep. & Mtce \$4k.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 PROGRAM BUDGET

Program: 472 -- Westside Sewer System: Peachland Lift Stations/ Collector Systems

Department:

Engineering Services (Sewer Systems)

Sewer Revenue Fund Budget

D	2020 Budget	2020 Actual	Variance 2020 Act. vs. Bud.	2021 Budget		Variance: 2021 vs. 2020 Budget
<u>Revenue:</u> Services - Peachland COVID Restart Grant Previous Year's Surplus/Deficit Engineering Admin OH Administration OH Total Revenue	(215,702) 0 (29,886) 6,337 27,846 (211,405)	(215,702) (30) (29,886) 6,337 27,846 (211,436)	(0) (30) 0 0 0 (31)	(206,224) 0 (33,111) 6,944 28,141 (204,250)	а	9,478 0 (3,224) a 607 295 7,156
<u>Expenses:</u> Operations Capital Facilities Reserve Total Expenses (Surplus) / Deficit	192,038 19,367 211,405 0	158,958 19,367 178,325 (33,111)	(33,080) 0 (33,080) a (33,111)	182,731 21,519 204,250 0	b c	(9,307) b 2,152 (7,156) 0
FTE's	0.49			0.49		0.00
Capital Facility Reserve Balance at Y	/E	(177,538)]	(200,832)	с	

2021 Budget Notes:

a. Increased surplus due to under expenditures for lift stns-repairs & mtce, contract services, odour control chemicals, electrical repairs & mtce, training, and vehicle operations. Payroll higher than anticipated.

b. Increases: Payroll \$0.7k, Electrical Rep. & Mtnce \$0.5k.

Decreases: Trng & Education \$0.5, Odor Control Chem. \$2.5k, Contract Services \$7.5k.

c. Reserve Contributions at 50% asset renewal level.

REGIONAL DISTRICT OF CENTRAL OKANAGAN 2021 - 2025 Five Year Program Budget Projections

Program: 472 -- Westside Sewer System: Peachland Lift Stations/ Collector Systems

Department:

Engineering Services (Sewer Systems)

Sewer Revenue Fund Budgets

			2022	2023	2024	[2025
	2021		Projected	Projected	Projected		Projected
	Budget		Budget	Budget	Budget		Budget
Revenue:						ĺ	
Services - Peachland	(206,224)		(243,690)	(248,134)	(252,666)		(257,289)
Previous Year's Surplus/Deficit	(33,111)	а	0	0	0		0
Engineering Admin OH	6,944		7,083	7,224	7,369		7,516
Administration OH	28,141		28,703	29,277	29,863		30,460
Total Revenue	(204,250)		(207,904)	(211,632)	(215,434)	[(219,312)
_							
Expenses:	100 704		100.000	100.110	100.010		407 704
Operations	182,731	b	186,386	190,113	193,916		197,794
Capital Facilities Reserve	21,519	С	21,519	21,519	21,519		21,519
Total Expenses	204,250		207,904	211,632	215,434		219,312
(Surplus) / Deficit	0		0	0	0		0
						l	
FTE's	0.49		0.49	0.49	0.49	[0.49
						r	
Capital Facility Reserve Bal. at Y/E	(200,832)	С	(224,359)	(248,121)	(272,120)		(296,360)

Notes

a. Increased surplus due to under expenditures for lift stns-repairs & mtce, contract services, odour control chemicals, electrical repairs & mtce, training, and vehicle operations. Payroll higher than anticipated.

b. Increases: Payroll \$0.7k, Electrical Rep. & Mtnce \$0.5k.

Decreases: Trng & Education \$0.5, Odor Control Chem. \$2.5k, Contract Services \$7.5k.

c. Reserve Contributions at 50% asset renewal level.



Report to the Westside Regional Wastewater Treatment Plant Stakeholder Committee

From: David Komaike, Director of Engineering Services

Date: February 8, 2021

RE: 2020 Project Update

Recommendation

THAT the Westside Wastewater Treatment Plant Stakeholder Committee receives this report for information.

Background

This report is meant to provide a brief update on several initiatives at the Westside Regional Wastewater Treatment Plant and East Trunk Sewage System. This includes both operational changes and capital projects.

Biosolids Management Update

Administration continues to investigate new options for the treatment of the WWTP biosolids as they become available. We are happy to report that a third alternate location for the composting of organic waste has been secured. Our available options now include:

- Sticklands Composting 3600 tonnes (Red Deer) Trucking and Treatment Approximately \$170/tonne
- Kevin Curtis Composting 1000 tonnes (Vernon) Trucking and Treatment Approximately \$110/tonne
- Arrow Trucking 400 tonnes (Princeton) Trucking and Treatment Approximately \$110/tonne

The net effect these new options is a reduction in biosolids transportation and treatment costs of about \$84,000 per year. The secondary, and perhaps more important, impact of the new contracts is the development of local treatment options for biosolids management. The local options are 35% cheaper and have a much lower GHG emissions, which will further assist the Regional District in meeting its long term reduction strategies.

TWAS Vault Expansion

The TWAS Vault expansion/replacement at the WWTP is nearing completion and is now in operation. The Project will be constructed below the approved budget and will facilitate the growth of the WWTP for the next 4th and 5th stages of growth.

WWTP HVAC Upgrades

The upgrading and replacement of the heating and ventilation equipment of the UV Building has now been completed and is currently being commissioned. The new system incorporates the use of both natural gas and a heat-pump to reduce the operating cost and increase energy efficiency. This will further reduce our GHG footprint for the facility.

East Trunk Sanitary Sewer and Lift Station - Predesign Studies

The predesign studies for both the East Trunk Lift Station and East Trunk Sewer Upgrade have now been submitted for preliminary review. Based upon the detailed engineering review of the existing infrastructure, it appears that the Regional District will be able to delay several significant capital projects by several years. This will allow the DCC reserve to grow and reduce the need to finance these important capital improvements.

Highlights of the Predesign Studies:

East Trunk Lift Station

- Steps taken to reduce the friction losses in the East Trunk Forcemain appear to have increased the capacity of the existing lift station.
- It is likely that additional capacity may be obtained, for the short-term, by upsizing the pumps/motors. This would delay the construction of the new lift station by 5-7 years or more depending upon the growth rate experienced.
- Additional capacity may come from the twinning of the forcemain, which could further delay the new lift station.
- Numerous locations for a new lift station are under review.

East Trunk Sanitary Sewer

- Preliminary findings have determined that the capacity of the sanitary sewer is at approximately 70-75% capacity and is OK for the short-term.
- The primary capacity issues arise when the Casa Loma Lift Station empties into the sewage system.
- Upgrades to the Casa Loma Lift Station will trigger the need to upgrade the trunk sewer.