



Report to the Westside Regional Wastewater Treatment Plant Stakeholder Committee

From: David Komaïke, 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

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

East Trunk Sewer Flow Splitting Results for 2020

<i>JURISDICTION</i>	<i>CALCULATION METHOD</i>		
	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.

Peachland

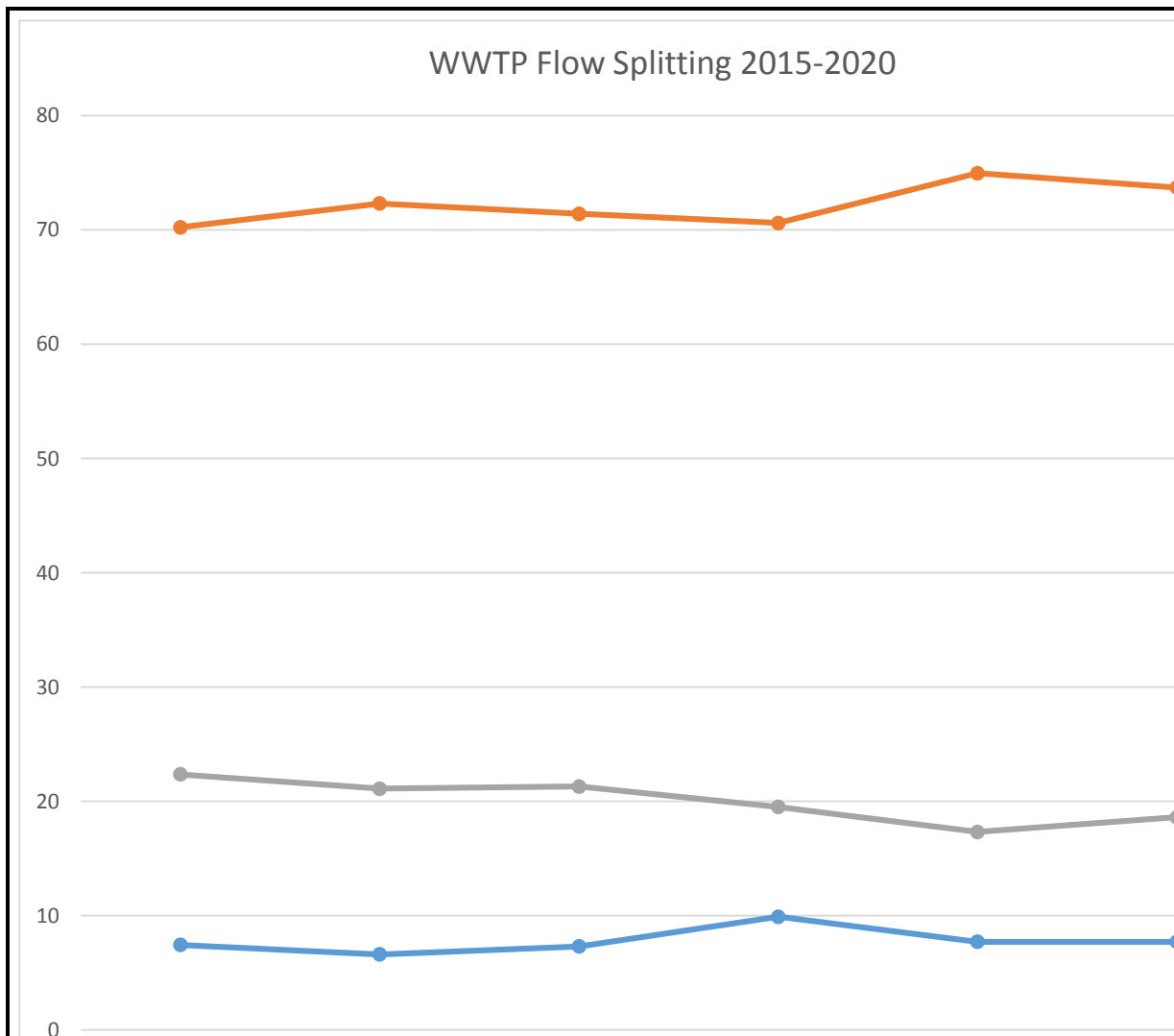
- Flow contribution has remained relatively constant: Averaging 7.79% over the past 5 years.
- Flow contribution increased in 2017 due to the flooding but has returned to traditional levels.

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

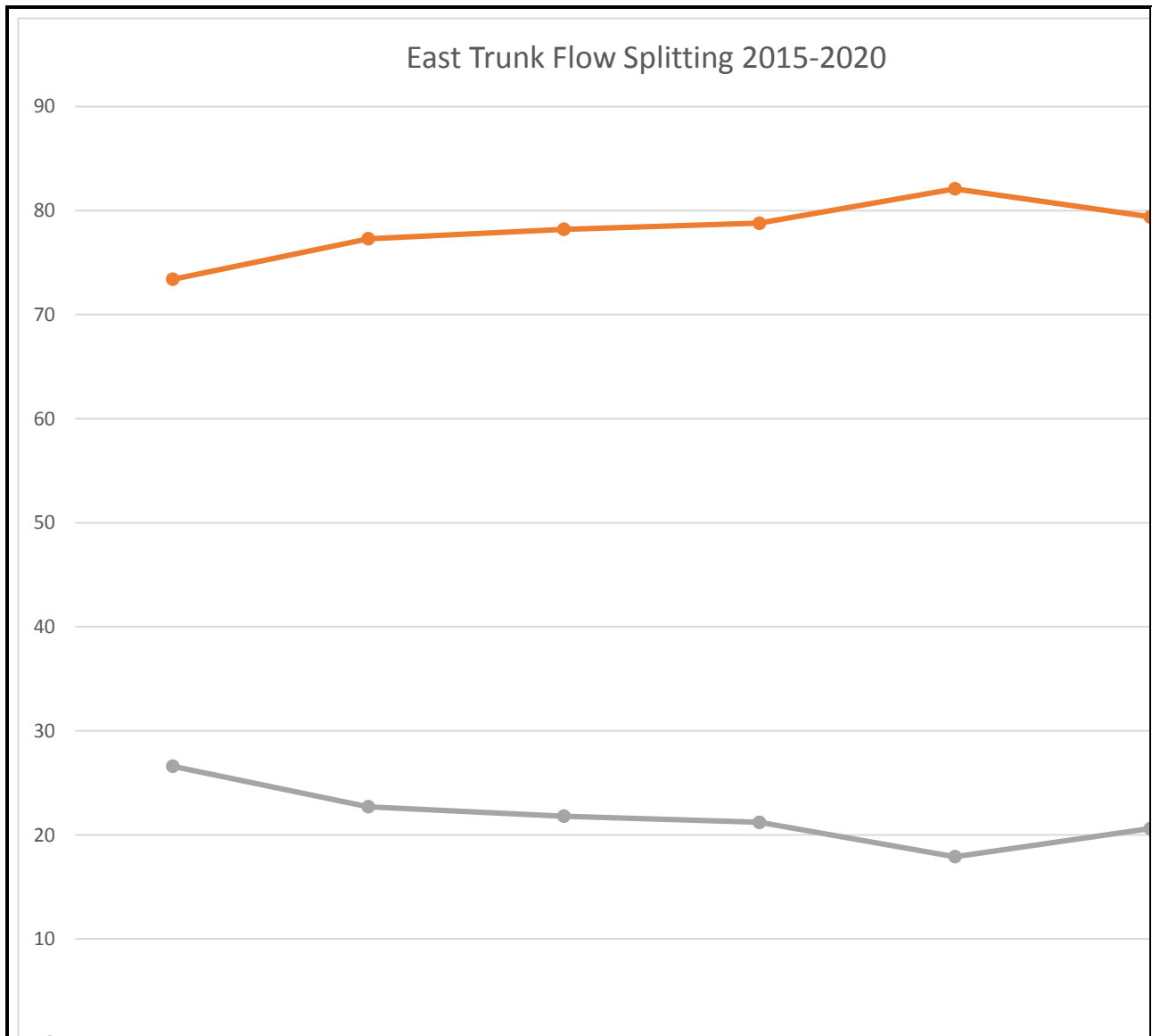
The following graph shows the flow trends over the past 5 years.

Westbank First Nations

- Flow contributions continue to gradually increase from 20.6% in 2015 to 26.6% in 2020 (5-year 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:

The City of West Kelowna = 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.

The Westbank First Nation = 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%

