

Technical Memo

Dan Passmore
Senior Planner
Columbia Shuswap Regional District
Salmon Arm, BC

October 5, 2018

Shuswap Country Estates (SCE) – Wastewater treatment technical memo

Dear Dan,

This technical memo is in response to the request for “additional information regarding the current and anticipated future operation of the development’s sewage treatment system” following the Board meeting held on August 16, 2018.

Information previously provided that is pertinent to this memo is summarized below:

- There are currently 71 serviced pads at SCE¹.
- The proposed maximum density of the development is 5 units per Ha for a total of 125 units.
- Current units consist of a majority of 2 bedrooms units with a few 3 bedroom units each with single or double occupancy. It is anticipated that any additional units will be of a similar nature.
- Current capacity of the wastewater treatment system is at 140,000L/day.
- The wastewater treatment system is being operated under MOE Permit PE-13672 (see attached).

Additional information to support the use of the existing wastewater treatment system as SCE expands is as follows:

- A technical memo provided by Watterson Geoscience states that current Average Daily Demand (ADD) for SCE is approximately 45m³/day (45000L/day), or 214L/day/capita.
- The peak demand for waste water system is typically 150% of average demand. Therefore, the ADD for SCE is translated to a Maximum Daily Demand (MDD) of 68m³/day (68000L/day), or 324L/day/capita. The MDD for water use calculated above can be used as a conservative DDF for the wastewater system at SCE. The MDD is a conservative wastewater DDF for SCE as it doesn’t consider water used for irrigation. Table 1 shows that current demand is less than 50% of the current capacity of the existing system when using this conservative DDF.

¹ Shuswap Country Estates OCP Supplementary Letter 20180327

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Table 1: Existing wastewater treatment system capacity

Parameter	Peak DDF (150%)	% of Capacity
System Capacity	140000 L/d	100%
Current Daily Flow	68000 L/d	48%
Residual Capacity	72000 L/d	52%

- The composition of the units to utilize the residual capacity is yet to be determined. However, Table 2 shows that the existing system has the capacity to service an additional 54 units regardless of the number of bedrooms per unit even if a calculated Peak Daily Design Flow (PDDF) is used which is much higher than the actual flows currently seen onsite. In this scenario, the capacity of the system exceeds demand, and the number of additional units is constrained by density restrictions on the property (5 units per ha, or 125 total units).

Table 2: Potential additional units

Bedrooms	Calculated Unit PDDF (L/day)	Additional Units	Total Calculated PDDF	% of Residual Capacity
1	700	54	37,800 L/d	52%
2	1000	54	54,000 L/d	75%
3	1300	54	70,200 L/d	97%

- The ALC approved application H-29942 (see attached) to construct the sewerage treatment and spray irrigation storage facility on ALR land provided the remaining land was incorporated into the ALR. The land registered as part of the ALR on 30 July 1996 (see attached). It is noted that the CSRD have referred the application to the ALC to confirm the validity of this information.

The above information confirms that the system has the capacity to service expansion of SCE to maximum allowable density of the property regardless of the number of bedrooms per unit.

If you have any questions or concerns, you can email jayme@franklinengineering.ca or call our office at 250.832.8380.

Sincerely,



Jayme Franklin, P.Eng.

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List of attached documents:

1. Shuswap Country Estates OCP Supplementary Letter 20180327
2. MOE Permit PE-13672
3. ALC Application H-29942
4. ALR Land Registration Certificate