

MEMORANDUM

Friday, July 10, 2020

TO: Selkirk Planning & Design – Attn: Fraser Blyth, BES, MEDes

FROM: Blake Lawson, P.Eng, Principal

SUBJECT: Stoked Living Hay Road Development – Preliminary Snow Storage Review

Dear Mr. Fraser Blyth, BES, MEDes

As requested by Mr. Fraser Blyth of Selkirk Planning & Design, Lawson Engineering and Development Services Ltd. (LEDS) was retained to review the available space within the subdivision for snow storage and snow clearing activities. It is our understanding that the road right of ways within the subdivisions will include the following:

- 7.0m wide paved surface;
- 0.5m wide shoulders (both sides of the road);
- 3.0m wide boulevard space c/w shallow drainage swale and/or “bioswale”;
- 1.8m wide concrete sidewalk on one side of the road*;
- The approximate length of proposed road segment is 480m;
- There are approximately 45 – 6m wide private accesses along the 480m of internal road.

Storage calculations have been calculated assuming 1.8m wide concrete sidewalk – it is anticipated that sidewalk will **not be installed throughout entirety of 480m of road segment (see attached concept plans).*

Applying basic parameters LEDS analyzed the snow storage requirements utilizing the “BC Ministry of Transportation and Infrastructure Supplement to TAC Geometric Design Guide” and specifically *Section 1520.05 – Snow Storage* as a guideline. TAC guidelines recommend that storage is provided for snow compacted to a density of 500 kilograms per cubic meter (i.e. 50% water equivalent).

TAC guidelines specify that snow clearing storage will be addressed on a site-specific basis, based on snowfall data and knowledge of the snowfall history in the area. It is our understanding that for the City of Revelstoke snow clearing storage areas will typically be provided by ditches, boulevard areas and within front-yard setbacks of individual dwellings.

Based on email correspondence with the City of Revelstoke Operations Department snow storage shall also be based on the following parameters:

1. The slope angle ratio for storage shall be 1 Horizontal to 1 Vertical;
2. The maximum snow storage height shall be 14’, or as dictated by overhead encumbrances (i.e. overhead power);
3. Front/Side yard setbacks can be considered to calculate the total snow storage capacity.

Based on the above noted design parameters LEDS has calculated that a total snow storage width of 3.65m is required to clear the travelled road surface and 1.31m to clear the separated sidewalks (where applicable) to handle the City of Revelstoke “Average Normal Snow Water Equivalent” of 890 units/mm. The “Average Snow Water Equivalent” was taken from the Mount Revelstoke Snow Station (2A06P), and as identified on March 1 historic average. LEDS understands that this snow station data is conservative as it is at a geodetic elevation of 1850m, well above the subject site.

LEDS has concluded in our preliminary snow storage review that a total road right of way width of 15.76m is required where both travelled roadways and separated sidewalks are present. LEDS also concludes that given the 3 meters available within the “boulevard/drainage swale”, and the 6 meters available within the front-yard setbacks, or the 3 meter side-yard setbacks, there is ample available snow storage width for the proposed 16m wide right of way. In addition, LEDS understands that operationally additional snow storage space will be valuable for loading and additional piling. Through our initial site layout review Selkirk Planning & Design have outlined proposed “open space” in various locations throughout the development which could be utilized for additional operational snow storage areas.

We hope that this preliminary snow storage review satisfies your current needs and would advise that once final development concepts have been completed that LEDS review the snow storage plan in further detail to confirm the findings of this preliminary analysis.

If you have any questions or concerns, please let me know.

Best Regards,

Lawson Engineering and Development Services Ltd.

DRAFT

Blake Lawson, P.Eng
Project Engineer
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Attachments:

- *Selkirk Planning & Design - Proposed Street Section – Stoked Living*
- *Selkirk Planning & Design – Site Cross-Sections – Stoked Living*