2020-03-10

0717133 BC Ltd.
[redacted]
Revelstoke, BC V0E 2S0

Attention: **Stefan Maunz**

Dear Mr. Maunz,

Re: Stoked Living Neighbourhood Development Traffic Impact Review

The City of Revelstoke required 0717133 BC Ltd. to obtain a professional engineering opinion regarding the traffic impacts from the proposed Stoked Living development on adjacent roadways and intersections. WSP was hired to complete this assessment based on their expertise and previous experience with traffic impact studies in the Upper Arrow Heights neighbourhood.

Proposed Site Plan

The proposed development site is located east of Hay Road, west of Camozzi Road, approximately 300 m north of Nichol Road in the southern portion of the City of Revelstoke with surrounding major land uses being residential.

According to the land use concept plan (dated October 23, 2019) provided by Selkirk Planning & Design, it is anticipated that a total of 60 residential units including 27 single-family dwelling units, 14 duplex units, and 19 rowhouse units to be constructed in the proposed stoked living neighbourhood. Each single-family dwelling unit could potentially have a secondary suite.

A secondary suite is a second dwelling located within a single detached house. It is a self-contained dwelling unit with separate living, cooking, sleeping and bathroom facilities. A secondary suite can be offered for rent to a third party by the owner.

Another alternative site development option to be reviewed in this study includes a total of approximately 45 single-family dwelling units with 45 potential secondary suites.

Transportation Network

Vehicular access to the proposed development will be obtained via Nichol Road and Hay Road. One site access is proposed to be located on Hay Road.

Nichol Road is a paved two-lane undivided collector road that runs east-west with a posted speed limit of 50 km/h. Nichol Road currently presents a rural road cross section with paved shoulders. The average daily traffic volume on Nichol Road in the vicinity of the Hay Road intersection is estimated to be approximately 3,300 vehicles per day during winter ski season.

Hay Road is a local road that provides access to the existing residential development north of Nichol Road. The current daily traffic volume on Hay Road is estimated to be approximately 700 vehicles per day.

The existing Nichol Road / Hay Road intersection is a simple three-legged intersection with stop control on Hay Road. Illumination is provided at this intersection.

Nichol Road is planned to be realigned to the south at the west of Hay Road and connects with Camozzi Road. The time of constructing the Nichol Road realignment is unknown at present.

Trip Generation

Trip generation for the proposed development was based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). The ITE trip generation rates for Single-Family Detached Housing (Code: 210) were used to estimate the trips generated by both single-family detached housing and duplex. The trip generation rates for Low-Rise Multifamily Housing (code: 220) were used to estimate the trips generated by rowhouses. The ITE Trip Generation Manual does not provide trip generation rates for the land use of single-family housing with a secondary suite. The trips generated by the secondary suites were estimated by engineering judgement. It is anticipated that 1 to 3 people may live in a secondary suite and 2 to 5 people may live in a low-rise multifamily housing unit (apartment or townhouse). Thus, the secondary suite trip generation rates are estimated to be half of the trip generation rates for low-rise multifamily housing.

Table 1 Trip Generation Rates

PROPOSED DEVELOPMENT	VARIABLE	AM PEAK HOUR	PM PEAK HOUR	DAILY
Single-Family Housing	Dwelling Unit	0.74	0.99	9.44
Duplex	Dwelling Unit	0.74	0.99	9.44
Rowhouse	Dwelling Unit	0.46	0.56	7.32
Secondary Suite	Dwelling Unit	0.23	0.28	3.66

Table 2 Trip Generation – Proposed Plan

PROPOSED DEVELOPMENT	AM PEAK HOUR	PM PEAK HOUR	DAILY
Single-Family Housing (27 Units)	20	27	255
Duplex (14 units)	10	14	132
Rowhouse (19 units)	9	11	139
Secondary Suite (27 units)	6	8	99
Total	45	60	625

It is anticipated that the proposed development would generate approximately 45 AM peak hour trips (11 in and 34 out), 60 PM peak hour trips (37 in and 23 out), and 625 daily trips.

Table 3 Trip Generation - Alternative Option (R1)

PROPOSED DEVELOPMENT	AM PEAK HOUR	PM PEAK HOUR	DAILY
Single-Family Housing (45 Units)	33	45	425
Secondary Suite (45 units)	11	13	165
Total	44	58	590

It is anticipated that the alternative option with R1 development would generate approximately 44 AM peak hour trips (11 in and 33 out), 58 PM peak hour trips (37 in and 21 out), and 590 daily trips. There will be no significant difference between the two development options in terms of trip generation.

Traffic Operational Performance

A quick capacity analysis reveals that all traffic movements at the Nichol Road / Hay Road intersection are expected to operate at an acceptable level of service (LOS) B or better during both the AM and PM peak hours under the existing traffic conditions even in the winter ski season. The Nichol Road / Hay Road intersection is anticipated to still operate at LOS B or better in the AM and PM peak hours with the fully built out of the proposed development. The amount of trips generated by the proposed development is not expected to significantly impact traffic operations at the Nichol Road / Hay Road intersection.

Conclusions

In reviewing the proposed stoked living neighbourhood development site plan and the existing traffic conditions at the Nichol Road / Hay Road intersection, the following conclusions were reached:

- The proposed development would generate approximately 45 AM peak hour trips, 60 PM peak hour trips, and 625 daily trips.
- The alternative option with R1 development would generate a similar amount of trips that the proposed development would generate.
- The amount of trips generated by the proposed development is not expected to significantly impact traffic operations at the Nichol Road / Hay Road intersection.
- The future realignment of Nichol Road is anticipated to improve the traffic operational performance at the Hay Road intersection.

It is anticipated that the aforementioned brief meets with your immediate needs and requirements. Should you have any questions regarding the above, please do not hesitate to contact us.

Regards,

James Sun, MSc., P. Eng., PTOE, RSP1
Senior Transportation Engineer

Cc: Steve Hartwick, AScT, PMP, Project Manager