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MEMORANDUM

Date: June 1, 2023
To: Jim Dias, Arbutus RV & Marine Sales Ltd.
Cc: Craig Little, Arbutus RV & Marine Sales Ltd.
From: Andy Kading, WATT Consulting Group
Our File No: 3517.B01
Subject: TCH RV Dealership Expansion

1.0 INTRODUCTION

WATT Consulting Group was retained by Arbutus RV & Marine Sales Ltd. to study the traffic impacts of the proposed development at 3450 Trans-Canada Highway in Cobble Hill, BC. The development will expand an existing dealership into a space across the road to the north.

2.0 EXPECTED SITE TRAFFIC AND REPORT REQUIREMENTS

The current site plan shows two proposed buildings, with a combined building floor area of 11,895ft² (1105m²). The Institute of Transportation Engineers 11th Ed. Trip Generation Manual gives the average AM and PM peak hour trip rates of 0.46 and 0.77 respectively, which translates to 5 AM peak hour trips, and 9 PM peak hour trips. The manual also provides weekday trip generation, at a daily rate of 5.00, for a daily trip generation of 59 trips. This is well below the 100-trip threshold outlined in the MoTI *Planning and Designing Access to Developments Manual* (Figure 1.5 on pg. 1-13) which is the inflection point at which a Transportation Impact Assessment (TIA) would be required.

According to the *Planning and Designing Access to Developments Manual*, this traffic study can therefore be completed using the *simplified design process*. As per the manual (pg. 2-9):

“Where Ministry staff determine that a design report is required, the Ministry will allow a *simplified Transportation Design Report* to be submitted where the criteria for a detailed *Transportation Design Report* are not met. This is primarily an engineering *Transportation Design Report* that identifies an appropriate design for the access. Also, it does not require the traffic operations analysis required in a *Detailed Report*.”

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Therefore, this memo reviews the site access, as it relates to Chapman Rd and the exit from the Trans-Canada Highway (Hwy 1).

3.0 ACCESS REVIEW

The site plan proposes one access, located on the north side of Chapman Rd, west of Hwy 1. The final design of the driveway is ongoing but for this document it is assumed with a 20m width at the entrance to the roadway and a throat width of 10m. The location of the driveway is determined based on the following:

Sightlines along Chapman Rd. to the west are good, but slightly impacted by a small vertical curve. The curve is minimal, with views, both approaching and from the proposed access, unobstructed by the curve. Google Street View images taken in November of 2022 are provided below with the proposed driveway location marked with red. Sightlines along Chapman Rd. looking east towards Hwy 1 are fully clear.



Figure 1: Approaching Proposed Driveway

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Figure 2: Looking West from Proposed Driveway

The driveway access is spaced downstream of deceleration lane / right turn exit lane coming off of Highway 1. Considering the speed differential from Highway 1 (90km/h) and Chapman Road (50km/h statutory) the primary safety concern with the proposed driveway is the distance from the right turn exit lane. This is especially true given the nature of the business in that recreation vehicles are slow moving and therefore take longer to clear the drive lane when entering/exiting the proposed driveway.

The proposed driveway is located 54m from Highway 1. See **Figure 3** below which depicts details of the access location and dimensions to the intersection.

A crosswalk is present at the turn-off from Hwy 1 onto Chapman Rd. The crosswalk location indicates that the deceleration lane is sufficient to allow a vehicle to make a complete stop when yielding to pedestrians. Therefore, it is expected that drivers who can stop for a pedestrian in the crosswalk will have adequate sight distance to stop for a vehicle exiting the access located approximately 50m past the crosswalk.

Chapter 8 of the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads* suggests minimum corner clearances to driveway accesses from major intersections. Figure 8.8.2 of the guide, for a stop control at the crossroad, suggests a

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minimum clearance of 15m for a local road. However, this figure fails to fully capture the highspeed nature of Highway 1 and should not be the sole guidance relied upon.



Figure 3: Proposed Driveway Location, Distance to Hwy 1, and Sight Distance for an Approaching Vehicle.

Vehicle turning speeds exiting from Highway 1 onto Chapman Road were not directly measured, however the radius of the exit corner indicates that vehicles are likely travelling at speeds less than 40km/h. This was confirmed via the author purposefully driving the curve at a reasonable rate in a common vehicle (Honda CR-V).

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According to the TAC manual, the calculated Stopping Sight Distance (SSD) for a vehicle travelling 40km/h is 50m, a condition which is met with the 51m of sight distance a vehicle turning onto Chapman Rd is provided.

To ensure maximum sightlines, the southeast corner of the lot will be kept free of visual obstructions and vegetation to ensure sightlines remain clear.

4.0 CLOSING

A Transportation Impact Assessment is not required for this development, due to the low number of trips generated from the proposed land use.

As per MoTI policy a site access review was conducted, and the access location was found to provide adequate sight distances and stopping sight distances for vehicles from both directions on Chapman Rd.

To ensure a safe stopping sight distance is maintained for vehicles exiting from Highway 1, the southeast corner of the development will be kept clear of visual obstructions and vegetation.

No other improvements are required.

Sincerely,

WATT Consulting Group



Andy Kading, P.E., P.Eng.
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