

Project No.: 14067  
File No.: 5-L-001

May 1, 2014

**Jordan Hettinga**  
**Kent Macpherson**  
304 – 1708 Dolphin Ave.  
Kelowna, B.C. V1Y 9S4

COST

TIME

QUALITY

Dear Jordan:

**Re: Tolko Lavington Pellet Plant Development  
Traffic Impact Analysis**

We are pleased to provide the following analysis of the proposed Tolko Pellet Plant Development site, adjacent roadway infrastructure and anticipated traffic generated by the proposed pellet plant, adjacent to the existing Tolko Saw Mill site to the south of Highway 6 in Lavington. The proposed Site Plan is appended.



**Figure 1 Site Location, South of Highway 6, between School Road and Hill Drive**

**Reference: Tolko Lavington Pellet Plant Development  
Traffic Impact Analysis**

The analysis is based on the development plan for the Pellet Plant and informal discussions with MoTI Staff.

The pellet plant is anticipated to utilize 60,000 Oven Dried Ton (Odt) per year of fiber material from the adjacent Lavington Tolko Mill, 115,000 Odt of fiber material that will be delivered from trucks that are currently arriving at the adjacent sawmill empty and departing with chips and hog fuel, with an additional 75,000 Odt of fiber material from sawmills in the Thompson/Nicola, Shuswap and Okanagan regions. The fiber material from the existing Tolko Lavington Mill will no longer be shipped to Kamloops, via Highway 6, and the finished pellet product from the new plant will be shipped to Vancouver via rail. The net increase in truck traffic resulting from the pellet plant operations is four new inbound truck trips and four new outbound truck trips per day.

**Background Information**

The site is located in Lavington, 600m to the south of Highway 6, midway between School Road and Hill Drive. The Tolko Sawmill is located directly to the south of the proposed site and the closed Lavington Glass Plant is located to the southeast. All other lands adjacent to the site are rural and in the ALR. Access to the site will be via both School Road and Hill Drive.

CTQ completed one day traffic counts for the intersection of Highway 6 and School Road, on April 16, 2014, and Highway 6 and Hill Drive on April 22, 2014. The traffic counts also recorded the number of truck trips with an average of 10% of the total traffic on School Road and Hill Drive made up heavy truck traffic. The traffic count information is included in the appendix.

The BC Ministry of Transportation and Infrastructure traffic count information indicates that the seasonal adjustment for the highway corridor adjacent to Highway 6 is an increase of 7% for the average summer daily traffic, over the average April daily traffic volumes. An allowance of 2% growth per year has also been applied to the background Highway 6 traffic, for the 2015 and 2025 Horizon Years and provides for a total increase in background traffic of 30% over the April 2014 volumes for the 2025 average summer day traffic volumes.

The 30% increase in background traffic was also applied to the traffic volumes for School Road and Hill Drive. With no development currently planned in the adjacent rural area, the 30% growth provides a conservative view of the anticipated 2025 traffic in the adjacent rural community.

The April 2014, and projected summer 2025 background AM and PM Peak Hour traffic volumes are presented in **Figure 2** through to **Figure 5**.

**Reference: Tolko Lavington Pellet Plant Development  
Traffic Impact Analysis**



**Figure 2** April 2014 AM



**Figure 3** April 2014 PM



**Reference: Tolko Lavington Pellet Plant Development  
Traffic Impact Analysis**



**Figure 4** 2025 SADT AM



**Figure 5** 2025 SADT PM

**Development Traffic**

The full build out of the Pellet Plant is anticipated to generate 24 fulltime jobs at the plant site, split into four crews, working 12 hour shifts, and working seven days a week. We have taken the conservative approach and assumed the shifts will change during the AM and PM peak hours, producing the following average weekday traffic volumes:

- AM Peak Hour - 6 inbound trips / 6 outbound trips;
- PM Peak Hour - 6 inbound / 6 outbound trips.

**Reference: Tolko Lavington Pellet Plant Development  
Traffic Impact Analysis**

In addition to the trip generation from employees, an additional 4 trucks per day will be delivering fiber material. The fiber material delivery will be occurring at random intervals throughout the day.

Based on the existing traffic patterns from the adjacent sawmill we anticipate 40% of the employee traffic to be to and from the east and 60% to and from the west via Highway 6, with the eastbound traffic using Hill Drive, and the west bound traffic using School Road.

The addition of the employee traffic to the 2025 background SADT traffic results in the following combined volumes, as presented in **Figure 6** and **7**.



**Figure 6 2025 SADT Background plus Employees AM Peak Hour**



**Figure 7 2025 SADT Background plus Employees PM Peak Hour**

**Reference: Tolko Lavington Pellet Plant Development  
 Traffic Impact Analysis**

**Capacity Analysis**

**2025 SADT Background Traffic Analysis**

The intersection performance for the projected summer 2025 SADT background traffic volumes (from **Figure 4** and **Figure 5**) were completed with Synchro 8 Traffic Modeling Software, with the following results presented in **Table 1**. The digital Synchro files are provided as a digital appendix to the report submission.

	Control	Period	Critical V/C	Delay (Sec)	Overall LOS	Comment
Highway 6 and School Road	Stop Sign	AM	0.53	5.0	A	NB Left LoS D
		PM	0.32	2.5	A	NB Left LoS C
Highway 6 and Hill Drive	Stop Sign	AM	0.23	0.7	A	NB Left LoS B
		PM	0.30	0.8	A	NB Left LoS C

**Table 1  
 2025 SADT Background Peak Hour Intersection Performance**

The intersection performance for the projected summer 2025 SADT background plus employee traffic volumes (from **Figure 6** and **Figure 7**) were completed with Synchro 8 Traffic Modeling Software, with the following results presented in **Table 2**. The existing traffic counts indicated the peak hour factor was similar to the default setting in Synchro of 0.92. To account for the regular start and stop of shift for the pellet plant employees, the peak hour factor for the movements on and off of Highway 6 has been adjusted in the Synchro analysis to 0.75. The digital Synchro files are provided as an appendix to the report submission.

	Control	Period	Critical V/C	Delay (Sec)	Overall LOS	Comment
Highway 6 and School Road	Stop Sign	AM	0.55	5.3	A	NB Left LoS D
		PM	0.34	2.7	A	NB Left LoS C
Highway 6 and Hill Drive	Stop Sign	AM	0.23	0.8	A	NB Left LoS B
		PM	0.30	0.8	A	NB Left LoS C

**Table 2  
 2025 SADT Background plus Employee Peak Hour Intersection Performance**

May 1, 2014  
Jordan Hettinga  
Page 7 of 7

**Reference: Tolko Lavington Pellet Plant Development  
Traffic Impact Analysis**

The maximum volume to capacity ratio for the analysis, with a value of 0.55, occurs during the 2025 AM background plus employee peak hour for the northbound left turn from School Road onto Highway 6 movement.

The 95<sup>th</sup> percentile queue length for the left turn from School Road onto Highway 97 is calculated to be 24m for the 2025 background plus employee for the AM Peak Hour. For the left turn movements from Highway 6 onto School Road and Hill Drive, the queue length was 0m, so a left turn bay is not warranted for either intersection. The left turn warrant from Appendix 'D' of the MoTI Site Impact Analysis Requirements Manual was also reviewed and a left turn bay was not warranted.

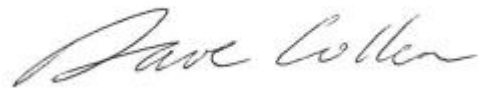
Based on the above review, the traffic generated by the proposed Pellet Plant site will have a minimal impact on the operation of the adjacent School Road and Hill Drive intersections with Highway 6.

We trust the above meets your requirements. Please contact the undersigned if you have any questions on the above or require further information.

Sincerely,

**CTQ CONSULTANTS LTD.**

Per:

A handwritten signature in cursive script, appearing to read "Dave Cullen".

Mr. David D. Cullen, P.Eng.  
Transportation Engineer  
DDC:ddc