

Memo

To: Travis Coates, P.Eng.
BURNCO Rock Products Ltd

Date: 23 October 2020

From: Simon Kong, M.Sc., P.Eng.
Transportation Planning Lead

CC:

Ref: CT204005

Re: West Cochrane Gravel Pit Traffic

INTRODUCTION

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), is pleased to present this memorandum in response to your request to review the trip generation of BURNCO Rock Products Ltd (BURNCO) West Cochrane Gravel Pit and how it compares to the anticipated overall traffic volumes at three Highway 1A intersections in Cochrane. BURNCO's West Cochrane Gravel Pit is an existing gravel pit located south of Highway 1A at Range Road 51 in Rocky View County, approximately 5 km west of the Town of Cochrane. From our understanding, the existing gravel pit has been operating for a number of years and is already generating some truck traffic. BURNCO is planning to expand the gravel pit area into adjacent properties to continue the gravel pit operation into the long term. Based on our discussions, BURNCO is not increasing the capacity of the existing gravel extraction operation. It is simply expanding the gravel pit to allow it to move into mining different areas of the pit as gravel is depleted.

GRAVEL PIT TRAFFIC GENERATION

A previous study titled 'BURNCO's McDougall Ranches Pit Traffic Impact Assessment' was completed in 2013 by Scheffer Andrew Ltd. in support of the development permit of the existing gravel pit. We reviewed this previous TIA to gain an understanding of the potential traffic generation levels that has been approved for the gravel pit. Based on the information provided by BURNCO at the time the study was completed, the gravel pit will generate 80 daily truck trips (40 inbound and 40 outbound) when operating at average efficiency and generate 400 daily truck trips (200 inbound and 200 outbound) on peak days. The permitted hauling hours for the existing gravel pit are between 6 a.m. and 7 p.m., a total of 13 hours. Truck trips are

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spread evenly over the 13 hours of permitted hauling. Therefore, the gravel pit will generate 6 truck trips (3 inbound and 3 outbound) in the a.m. and p.m. peak hours when operating at average efficiency. At peak hauling days, the gravel pit will generate 31 truck trips (16 inbound and 15 outbound) in the a.m. and p.m. peak hours. **Table 1** summarizes the truck traffic generation for the gravel pit. The trip generation outlined are still applicable to the gravel pit with the expanded area since the target sales volume of 500,000 tonnes per year will remain unchanged. It is noted that the gravel pit is currently in operation and already generates truck traffic, but the current sales volume is approximately 20% of the target sales volume. Over time, BURNCO expects to reach this target sales volume.

Table 1: Truck Traffic Generation

Period	Total Truck Trips	Inbound	Outbound
Average			
Daily	80	40	40
AM Peak Hour	6	3	3
PM Peak Hour	6	3	3
Peak			
Daily	400	200	200
AM Peak Hour	31	16	15
PM Peak Hour	31	16	15

BURNCO currently operates another gravel pit in Indus of comparable size and anticipated extraction rate (500,000 tonnes/year). **Table 2** summarizes the actual truck trips recorded in 2016. From the data, it is clear that the actual truck trips per day for a great majority of the active days are well below the peak (>200 truck trips per day) and the peak truck trips only occurred 6 days out of the year at the Indus Gravel Pit. BURNCO expects that the West Cochrane Gravel Pit will follow a similar pattern where peak hauling only occurs for a few days of the year.

Table 2: Indus Pit Truck Trips (2016 Actual)

Truck Trips Per Day	Days	Description/Notes
0	101	Sundays/Holidays
0-100	210	
101-150	34	
151-200	9	
>200	6	Oct 6, 21, 24, 25 & Nov 8, 9
62	P ₅₀	50% of active days 62 trucks or less
92	P ₇₅	75% of active days 92 trucks or less
130	P ₉₀	90% of active days 130 trucks or less
155	P ₉₅	95% of active days 155 trucks or less

GRAVEL TRUCK TRAFFIC AT COCHRANE INTERSECTIONS

The Town of Cochrane is concerned with the traffic operation of three intersections on Highway 1A serving the Heartland and Heritage Hills developments along the highway. Although previous TIAs have identified long term improvements needed to accommodate the traffic from these adjacent developments along Highway 1A west of Highway 22, these improvements are not currently funded. The NW Quarter Transportation Impact Assessment completed by Urban Systems in February 2020 is the most current source of future traffic volumes at the three Highway 1A intersections. Based on our review of the TIA, the 20-year post development scenario includes traffic from the full buildout of Heartland, Heritage Hills, and the proposed Horse Creek Sports Park. Figures 6-1 and 6-2 of the NW Quarter TIA (attached to this memo) summarized the 20-year post development volumes at the intersections of Highway 1A / Horsecreek Road, Highway 1A / Heritage Gate, and Highway 1A / East Site Access (Cochrane Ag Grounds Access).

We conducted a high level review of the total future traffic entering each intersection including the 20 year post development traffic volumes from the NW Quarter TIA, and the truck traffic associated with the West Cochrane Gravel Pit presented in the last section. Both the average and peak truck traffic from the gravel pit were reviewed to illustrate the overall traffic contribution of the gravel pit under different hauling scenarios. The results of our review are summarized in **Table 3**.

Table 3: Future Intersection Traffic Volumes

Traffic		Traffic Entering Highway 1A Intersection at					
		Horsecreek Road		Heritage Gate		East Site Access	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
20 Year Post Development (from Figures 6-1 and 6-2 of NW Quarter TIA)		1717	2496	2327	3208	3439	4694
BURNCO West Cochrane Gravel Pit	Average	6	6	6	6	6	6
	Peak	31	31	31	31	31	31
Total	Average	1723	2502	2333	3214	3445	4700
	Peak	1748	2527	2358	3239	3470	4725
BURNCO Truck Traffic Share (% of Total)	Average	0.3%	0.2%	0.3%	0.2%	0.2%	0.1%
	Peak	1.8%	1.2%	1.3%	1.0%	0.9%	0.7%

As shown, traffic increases from west to east from Horsecreek Road to Heritage Gate to the East Site Access (Cochrane Ag Grounds Access). This is as a result of traffic associated with the Heartland and Heritage Hills subdivisions being loaded onto Highway 1A at the three intersections and most of the traffic destined to/from the east. The table also shows that the truck traffic associated with the gravel pit represents a small percentage of the total traffic entering each intersection on Highway 1A. In the case of average truck traffic, the gravel pit will only be contributing up to 0.3% of the total traffic entering each intersection. Even on peak hauling days (expected to occur a few times a year as noted earlier), the gravel pit will only be contributing up to 1.8% of the total traffic entering each intersection. **The gravel pit's contributions of traffic at the intersections are minor in comparison to the overall traffic** at the intersections. Most of the traffic at these intersections are associated with the Heartland and Heritage Hills developments.



This memorandum is respectfully submitted by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited

Simon Kong, M.Sc., P.Eng.
Transportation Planning Lead

Attachments: Figures 6-1 and 6-2 from The NW Quarter Transportation Impact Assessment



6 POST DEVELOPMENT CONDITIONS

6.1 Post Development 20 Years

The development trips from the Horse Creek Sports Park were combined with the 20-year background traffic in the post development analysis.

Figures 6-1 to 6-2 illustrate the 20-year post development AM and PM peak hour traffic.

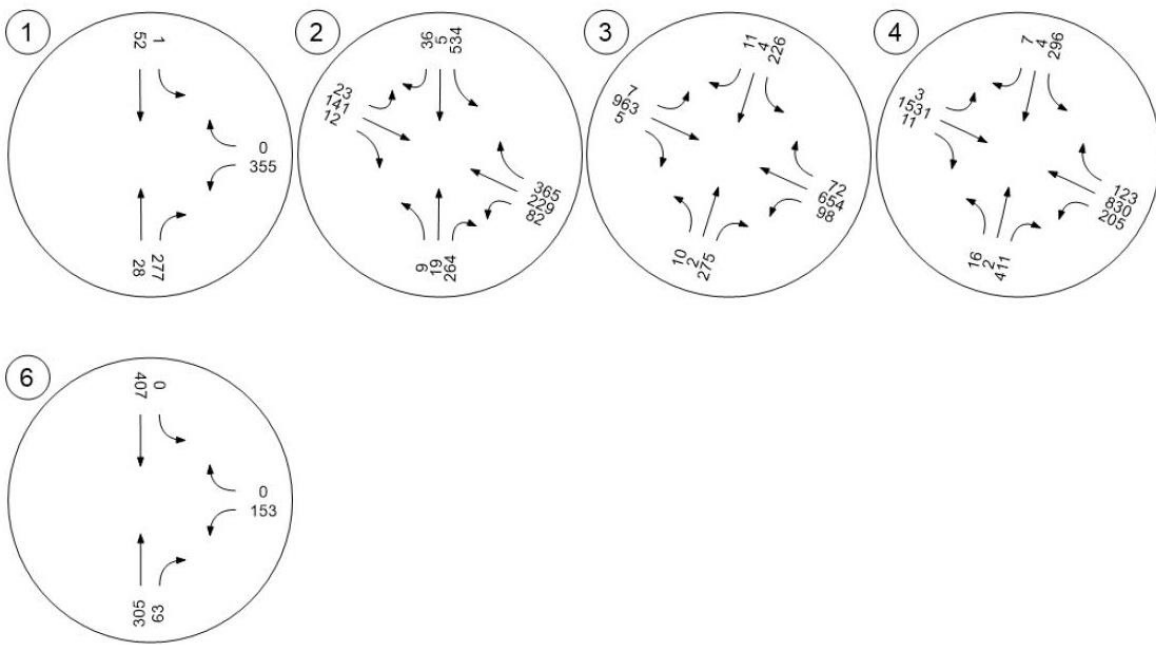


Figure 6-1: Post Development 20 Years – Morning Traffic Volumes

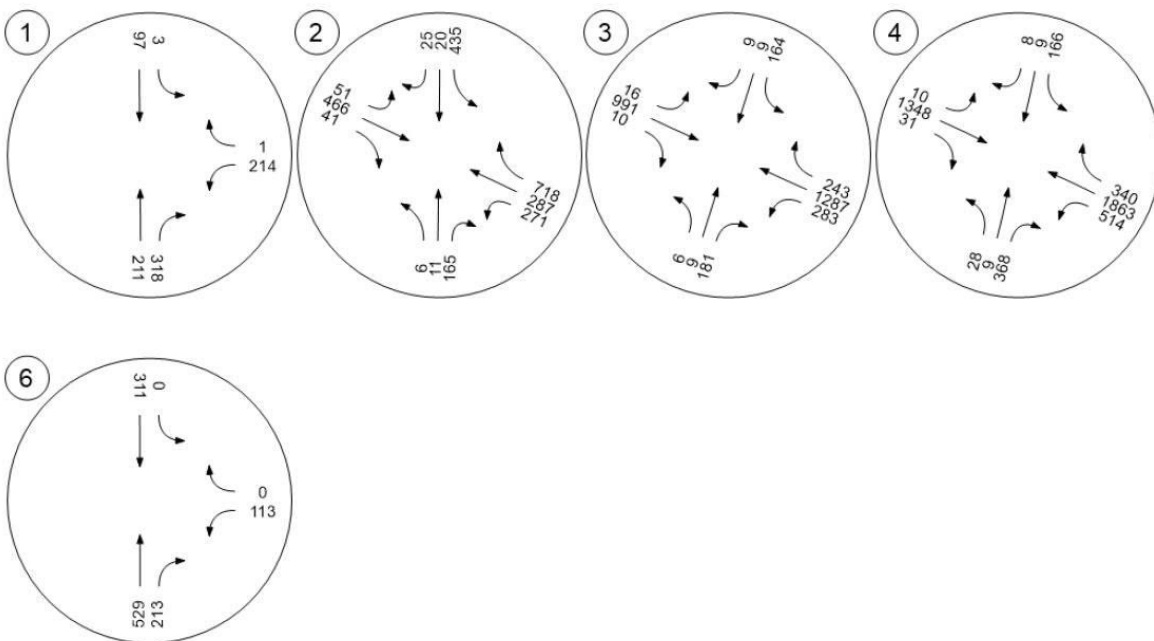


Figure 6-2: Post Development 20 Years – Afternoon Traffic Volumes