

Appendix J-2

Construction Traffic Impacts



TRANSPORTATION PLANNING AND TRAFFIC ENGINEERING CONSULTANTS

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TECHNICAL MEMORANDUM

Date: February 26, 2018

TO: Michael Smith, Teichert Aggregates
CC: Jesse Yang, Taylor & Wiley

FROM: Sara Hawley, PE, LSC Transportation Consultants, Inc.

RE: Teichert Boca Quarry Expansion – Construction Traffic Impacts

This memorandum presents an analysis of the traffic impacts during construction of driver sight distance improvements and shoulder widening improvements along Stampede Meadows Road in association with the proposed expansion of Boca Quarry. Construction of the improvements would likely occur on Monday through Saturday from 7:00 AM to 3:30 PM.

Construction traffic was estimated based on information provided by Teichert Construction (the likely construction contractor for the proposed roadway improvements) with regards to construction phases, number of construction employees and visitors anticipated to be on the site over the course of a busy day, and truck hauling activity. Assumptions include the following:

- All three phases of construction, including excavation, aggregate base rock, and asphaltic concrete paving, could occur simultaneously. This analysis assumes all phases overlap, in order to remain conservatively high in the estimation of traffic volumes.
- A maximum of 34 import/export trucks would visit the site per day. This would result in 34 inbound and 34 outbound truck trips.
- There would be approximately 22 construction workers per day, of which 75 percent are assumed to arrive in the hour before construction starts and 100 percent would depart in the hour construction ends. Average vehicle occupancy for workers is estimated to be approximately 1.2 workers per vehicle, consistent

with the vehicle occupancy rate assumed for quarry employees. This would result in approximately 19 inbound and 19 outbound trips generated by construction workers over the course of a busy day.

- A maximum of 4 managers/inspectors visit the site per day and 50 percent of these make an off-site trip in the middle of the day for lunch or other reasons, resulting in 6 inbound and 6 outbound trips per day.

As shown in Table A, all construction traffic will generate a total of approximately 118 daily one-way trips with 17 occurring in the AM peak hour (17 inbound and 0 outbound) and 31 occurring in the PM peak hour (2 inbound and 29 outbound). This is considerably less than the estimated quarry traffic at up to 1,432 daily trips, with up to 150 trips occurring in the AM peak hour (75 inbound and 75 outbound), 50 trips occurring in the weekday PM peak hour (25 inbound and 25 outbound), and 150 trips during the Saturday peak hour. Note the outbound PM peak hour trips on a weekday could be slightly higher during construction at 29 trips versus 25 trips. This small increase would not create a Level of Service (LOS) concern at any of the study intersections, which are expected to operate at a relatively good LOS during construction (LOS B or better).

The construction trips were distributed as follows:

- 93 percent to/from I-80 westbound
- 5 percent to/from Glenshire
- 2 percent to/from I-80 eastbound

Table B shows the resulting construction project generated volumes at the study intersections. Note that the volumes through the Stampede Meadows Road/West Hinton Road intersection are conservatively high, given that some of the construction traffic may not impact Stampede Meadows Road that far to the north.

Attachments: Table A-B

Table A: Hourly Trip Generation - Construction Traffic Weekdays and Saturdays

Hour Start Time	Export/Import Trucks		Construction Workers		Managers/Inspectors		Total Vehicle Trips		
	In	Out	In	Out	In	Out	In	Out	Total
5:00 AM							0	0	0
6:00 AM			14		3		17	0	17
7:00 AM	4		5		1		10	0	10
8:00 AM	4	4					4	4	8
9:00 AM	4	4					4	4	8
10:00 AM	4	4					4	4	8
11:00 AM	4	4				2	4	6	10
12:00 PM	4	4			2		6	4	10
1:00 PM	4	4					4	4	8
2:00 PM	4	4					4	4	8
3:00 PM	2	6		19		4	2	29	31
4:00 PM							0	0	0
Total Daily	34	34	19	19	6	6	59	59	118

AM and PM peak hours are shaded

Source: LSC Transportation Consultants

Table B: Construction Generated Peak Hour Intersection Turning Movement Volumes

Intersection	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
AM Peak Hour													
Stampede Meadows Road/West Hinton			17										17
I-80 Westbound Ramps/Hirschdale Road											17		17
I-80 Eastbound Ramps/Hirschdale Road		1					16						17
PM Peak Hour													
Stampede Meadows Road/West Hinton			2							29			31
I-80 Westbound Ramps/Hirschdale Road								2	27		2		31
I-80 Eastbound Ramps/Hirschdale Road					1	1	2						4

Source: LSC Transportation Consultants