

Appendix J-3

Timber Harvesting Traffic Impacts



TRANSPORTATION PLANNING AND TRAFFIC ENGINEERING CONSULTANTS

2690 Lake Forest Road, Suite C
Post Office Box 5875
Tahoe City, California 96145
(530) 583-4053 FAX: (530) 583-5966
info@lsctahoe.com • www.lsctrans.com

TECHNICAL MEMORANDUM

Date: September 10, 2018

TO: Michael Smith, Teichert Aggregates
CC: Jim Wiley, Taylor & Wiley
CC: Jesse Yang, Taylor & Wiley
CC: Leslie Suen, PE, LSC Transportation Consultants, Inc.

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

RE: Teichert Boca Quarry Expansion – Timber Harvesting Traffic Impacts

This memorandum presents an analysis of the traffic impacts associated with the timber harvesting activities anticipated as a part of the proposed expansion of Boca Quarry. In addition, an updated discussion of Vehicle Miles Traveled (VMT) impacts is provided, considering that Teichert's Truckee Quarry recently resumed operation.

Timber Harvesting Impacts

According to the project description, the total number of harvestable trees on the Boca Quarry site is about 750, and the trees are spread over approximately 100 acres. No additional employment would be generated by the timber harvesting activities, as they are merely part of the site preparation and would occur as needed as new areas become available for mining. Based on Teichert's recent tree removal activities at the nearby Truckee Quarry site, the trees are anticipated to be taken to a lumber mill located in Quincy, approximately 75 miles away from Truckee (via I-80, SR 89 north, and SR 70).

In Teichert's experience based on past tree removal operations, approximately 8-10 trees can be hauled off in one truck load. Dividing 750 trees by 8 trees per truck load, conservatively, the total number of truck loads is approximately 94. Assuming each truck makes 2 one-way trips (one entering and one exiting the site), this equates to 188 one-way truck trips made to/from the site over the 30-year life of the project. Even if all

of those loads occur during a single operating season, there would be less than one load per day, on average. On a busy day, the number of truck trips generated by timber harvesting activities would be minimal compared to the approximately 1,432 maximum daily one-way vehicle trips estimated to be generated by the quarry operations (as indicated in the *Teichert Boca Quarry Expansion Traffic Impact Analysis*, LSC Transportation Consultants, Inc., October, 2017). As such, the timber harvesting activities would not materially affect the conclusions and recommendations in the traffic study.

VMT Impacts

The effect of the proposed project on Vehicle Miles Traveled (VMT) in the region is dependent on the total trip generation and the length of these vehicle trips. The increase in VMT resulting from the proposed project was estimated based on the trip lengths and the total number of daily and peak-hour trips generated. The quarry will serve the entire area between Sierra Valley on the north and Tahoe's West Shore on the south. Hauling trips made along I-80 to the east (between Hirschdale and the California/Nevada State Line) are expected to be minimal. Considering the geographic region and uses served by the quarry, the average trip length for truck trips made to/from the quarry is estimated to be about 20 miles. The average trip length for employees is assumed to be approximately 10.5 miles, based on data from the 2011-2015 American Community Survey (U.S. Census data) for the Truckee area.

As Table A indicates, up to approximately 28,336 daily VMT are associated with the proposed project over the course of a peak weekday, with up to 3,000 VMT occurring during the busiest hour of site-generated traffic (the AM peak hour). These figures reflect "worst-case" conditions, as they assume the quarry is operating at the maximum potential production. Note that the project would generate less VMT on a Saturday. The VMT generated by the proposed project are not all necessarily "new" VMT, given the fact that there are some VMT associated with the existing site.

Furthermore, the VMT associated with the Boca Quarry are not necessarily "generated" by the proposed project, but are actually necessitated by the construction projects that need the materials from the quarry. Without the proposed quarry project, these construction projects would still occur. That is, a similar number of VMT would be generated in the study region regardless of which quarry supplies the materials.

Other than the Truckee, Martis and Boca quarries, the nearest large quarry capable of supplying the typical project in the study region is located at least an additional 40 miles away via I-80 (toward Reno or Sacramento). Without the Truckee, Martis and Boca quarries, the additional trip length associated with aggregate exporting truck trips potentially made from the nearest quarry in Sparks, Nevada is estimated to be approximately 36 additional miles in one direction. (This additional distance is based on a total of about 40 miles from the Hirschdale Interchange to the Sparks quarry, minus

the roughly 4 miles of travel that Boca Quarry trucks travel in order to access the Hirschdale Interchange.)

Multiplying 36 additional miles by up to 1,120 daily one-way trips associated with the aggregate exporting trucks yields a total of 40,320 additional VMT generated over the course of a peak weekday. Assuming the same methodology applies to the backfill importing trucks, about 10,080 additional daily VMT (36 additional miles multiplied by 280 one-way trips) would be made by the backfill importing trucks going to/from Sparks instead of to/from the Boca Quarry. Therefore, with respect to the region including the area served by the Boca Quarry as well as the I-80 corridor between the Hirschdale Interchange and Sparks, Nevada, a total of up to 50,400 additional daily VMT (40,320 plus 10,080) would be generated if the Boca Quarry Expansion Project is not implemented.

In summary, approximately 28,336 daily VMT are associated with the proposed quarry project. However, without project implementation, an additional 50,400 daily VMT would be generated in the region (or more, depending on which quarry would serve the local construction projects), for a total of 78,736 daily VMT. Without the proposed project, it can be concluded that the VMT associated with quarry trips in the region would be about 2.8 times greater than that with the project. In other words, implementation of the Boca Quarry Expansion Project would ultimately reduce VMT in the greater region by roughly 35 percent. Note that these figures are based on maximum production levels.

Attachment: Table A – VMT

TABLE A: Project-Generated Vehicle Miles Traveled

Description	Number of Trips ¹		Average Trip Length (miles)	Vehicle Miles Traveled	
	Daily	Peak Hour		Daily	Peak Hour
Aggregate Exporting Trucks	1,120	120	20.0	22,400	2,400
Backfill Importing Trucks	280	30	20.0	5,600	600
Employee Vehicles	30	0	10.5	315	0
Maintenance Truck	2	0	10.5	21	0
Total	1,432	150		28,336	3,000

Note: Reflects weekday conditions. VMT on a Saturday would be less.

Note 1: Reference Table 1 in traffic study.

Source: LSC Transportation Consultants, Inc.

Teichert Quarry.xls