

TECHNICAL MEMORANDUM

Date: September 25, 2020
To: Jason Smith – Teichert Aggregates & Jesse Yang – Taylor & Wiley
From: David Manciatì – Fehr & Peers
Subject: ***Shifler Mining Project Vehicle Miles Traveled Impact Evaluation (Revised)***

RS19-3831

This memorandum outlines the vehicles miles traveled (VMT) impact evaluation for the Shifler Mining project in Yolo County, California. Teichert has proposed to expand aggregate mining operations at their Shifler site near Woodland, which currently has an annual permitted volume of 1.2 million tons sold. The new permit would enable Teichert to transfer its Esparto plant's current annual permitted volume of 1 million tons sold to the Woodland plant once mining is complete at Esparto or the Esparto surface mining permit expires, whichever occurs first. This would increase the annual permitted volume at the Woodland plant to 2.2 million tons sold.

This memo describes relevant VMT regulations, establishes significance criteria, outlines VMT analysis methodology, and evaluates the proposed project's VMT impact.

Regulatory Setting

Senate Bill 743

Senate Bill (SB) 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." OPR submitted updated CEQA Guidelines to the State Natural Resources Agency for formal rulemaking to implement SB 743, and the proposed changes were certified by the State Natural Resources Agency in December 2018. The guidelines indicate that vehicle miles traveled (VMT) be the primary metric used to identify transportation impacts and local agencies will have an adoption grace period until July, 2020.

Office of Planning & Research Technical Advisory

As lead agency, Yolo County does not currently have established VMT significance thresholds for environmental review purposes. Existing guidance available in the *Office of Planning & Research (OPR) Technical Advisory: On Evaluating Transportation Impacts in CEQA* does not include recommended numeric thresholds for land use projects other than residential, office, and retail projects. The OPR

Technical Advisory states that lead agencies may develop their own specific thresholds, which may include other land use types, using more location-specific information. Therefore, Yolo County has considerable discretion in choosing a suitable VMT impact analysis approach for the purposes of the Shifler Mining project.

Significance Criteria

CEQA Guidelines Section 15064.3 describes the applicable criteria for analyzing transportation impacts with respect to VMT. For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

In the absence of an applicable Yolo County VMT significance threshold, for the purposes of this study and in accordance with the CEQA Guidelines, a VMT-related impact is considered significant if implementation of the proposed Shifler Mining project would trigger the following condition.

- The baseline plus project VMT is greater than baseline (no project) VMT

VMT Analysis

Assessment Scenarios

This VMT analysis includes a baseline scenario and a baseline plus project scenario, described as follows.

- **Baseline – VMT** is analyzed under baseline conditions, using a level of production at the Woodland and Esparto plants equal to their ten-year average (2005-2014). This level of production is 721,257 tons per year at the Woodland plant and 416,007 tons per year at the Esparto plant.
- **Baseline Plus Project – VMT** is analyzed under plus project conditions, assuming maximum permitted level of production at the Woodland plant. This level of production is 2,200,000 tons per year.

In addition, the following scenario is included for informational purposes only and is not used in VMT impact evaluation.

- **Baseline (Permitted Capacity) – VMT** is analyzed under baseline conditions, assuming maximum permitted level of production at the Woodland and Esparto plants. This level of production is 1,200,000 tons per year at the Woodland plant and 1,000,000 tons per year at the Esparto plant.

Methodology

For the purposes of assessing mining land use projects, vehicle miles traveled (VMT) is a two-part formula calculated by the following equation:

$$VMT = (Avg. \text{ trip length} \times \text{Vehicle trips})_{Trucks} + (Avg. \text{ trip length} \times \text{Vehicle trips})_{Employees}$$

Teichert has detailed datasets documenting historical aggregate production and sales for the Esparto and Woodland plants. This data was used to derive the average truck haul tonnage and number of truck trips to/from both plants. Teichert also has detailed datasets regarding employee residence locations and aggregate sales locations throughout the greater Sacramento region. These were used to develop average trip lengths for both employees and trucks traveling to/from both plants. Together, these inputs were used to develop truck and employee VMT estimates under baseline and baseline (permitted capacity) conditions.

The baseline plus project conditions assumed the transfer of the Esparto plant's current annual permitted volume of 1 million tons sold to the Woodland plant, which would increase the annual permitted volume at the Woodland plant to 2.2 million tons sold. Using the average trip lengths and trip generation data developed for baseline conditions, VMT estimates were developed for trucks and employees under baseline plus project conditions. **Table 1** shows baseline, baseline (permitted capacity), and baseline plus project VMT analysis results for mining operations. VMT generated by current agricultural land use at the Shifler site is presumed to be nominal compared to VMT generated by current mining operations, based on the type of crops planted at the site over the past decade (e.g., wheat, alfalfa, tomatoes, cucumbers, canola, sunflower, and safflower).

The data provided by Teichert indicates that compared to the Esparto plant, the Woodland plant is located closer to employee residence locations and aggregate sales locations. As a result, the project would reduce the average trip length for both employee commutes and truck deliveries by about 5.4 percent each (as compared to baseline conditions). This amounts to lower VMT per employee and lower VMT per ton produced under baseline plus project conditions. However, the level of production assumed in the baseline plus project scenario is about 93 percent higher than the level of production under the baseline scenario. Therefore, total VMT would increase with the project by about 2,458,493 annually, since VMT efficiencies gained by combining productions at the Woodland Plant are negated by the increase in production between the two scenarios (i.e., production of 1,137,265 tons per year under baseline conditions versus 2,200,000 tons per year under baseline plus project conditions). The baseline (permitted capacity) conditions results show that, production being equal, the project would reduce VMT by about 518,906 annually.

TABLE 1: VEHICLE MILES TRAVELED ANALYSIS RESULTS (MINING OPERATIONS)¹			
Metric	Baseline Conditions²	Baseline (Permitted Capacity) Conditions²	Baseline Plus Project Conditions
Production (tons)	1,137,265	2,200,000	2,200,000
Employee Avg. Trip Length (mi)	34.6	35.4	32.7
Truck Avg. Trip Length (mi)	27.9	28.9	26.4
Employee VMT	635,579	1,064,294	980,996
Truck VMT	2,533,940	5,082,624	4,647,016
Total VMT	3,169,519	6,146,918	5,628,012
Change in VMT (Compared to Baseline Conditions)	0	+2,977,399	+2,458,493

Notes: VMT = vehicle miles traveled
¹ VMT related to current agricultural land uses at the Shifler site are presumed to be nominal compared to current mining operations VMT, based on the type of crops planted at the site over the past decade, which include wheat, alfalfa, tomatoes, cucumbers, canola, sunflower, and safflower
² Baseline and baseline (permitted capacity) conditions consider the combined production of the current Esparto Plant and Woodland Plant. There are no current mining operations on the Shifler project site.
Source: Fehr & Peers, 2020

VMT Impact Evaluation

Impact 1

The proposed project would increase VMT by 2,458,493 annually, representing a 78 percent increase from baseline conditions. This VMT increase would be a **significant impact**.

Mitigation Measure

Mitigation measures that would reduce VMT must result in one of two outcomes – a decrease in average trip length or a decrease in trip generation. The proposed project’s remote location and specialized land use type would limit the range and effectiveness of potential VMT mitigation options, particularly those that are commonly applicable in urban or suburban settings (e.g., co-locating complementary land uses, providing subsidized transit passes, improving pedestrian/bicycle networks, managing parking supply, etc.).

Table 2 provides an assessment of the feasibility of potential actions that would reduce average trip length and/or trip generation and, in turn, VMT generated by the project. As shown in Table 2, feasible

mitigation actions for the project are limited to those that could decrease employee trip generation through commute trip reduction strategies.

TABLE 2: POTENTIAL VMT MITIGATION FEASIBILITY ASSESSMENT		
Action	VMT Reduction Effect	Feasibility
Decrease annual aggregate production	Reduce trip generation associated with aggregate deliveries	Potential feasibility issues due to mine operations/business model. Also, would prevent mine from operating up to its permitted production levels.
Decrease number of mine employees	Reduce trip generation associated with employee commutes	Potential feasibility issues due to mine operations/business model.
Implement transportation demand management (TDM) program	Reduce trip generation associated with employee commutes	No known feasibility issues

Source: Fehr & Peers, 2020

Mitigation Measure 1: Transportation Demand Management (TDM) Program. The project applicant shall develop and implement a TDM program to reduce the number of daily vehicle trips made to the project site, and shall submit the TDM Program to Yolo County for review and approval. The TDM Program shall identify trip reduction strategies as well as mechanisms for funding and overseeing the delivery of trip reduction programs and strategies. The TDM Program shall be designed to achieve the following trip reduction:

- Reduce baseline plus project VMT to baseline conditions

Feasible trip reduction strategies may include, but are not limited to, the following.

- Develop an employer-led program that considers:
 - Carpooling encouragement
 - Ride-matching assistance
 - Vanpool assistance

Significance After Mitigation. Given the project’s land use type and its location in rural Yolo County, a TDM program aimed at reducing employee commute trips would have very limited effectiveness. Moreover, employee VMT only accounts for a small portion of total baseline plus project VMT (about 17 percent), and an approximately 78 percent VMT reduction would be necessary to reduce baseline plus project VMT to the baseline level. For these reasons, implementation of Mitigation Measure 1 would not reduce baseline plus project VMT to baseline conditions. Therefore, this impact is considered **significant and unavoidable**.