MEMORANDUM

Date:	February 24, 2023	**GTS:** 221017.01
To:	James M. Daisa (DEA)	
From:	Rawad Hani, GTS	
Subject:	**Vehicle Miles Traveled (VMT) Analysis – Rancho 38 Warehouse, Adelanto, CA**	

This memorandum describes the development of vehicle miles traveled (VMT) analysis for the proposed Rancho 38 Warehouse in the City of Adelanto (City), CA. The project is located at the southwest corner of Emerald Road and Rancho Road in the City of Adelanto. The project proposes construction of a 689,824 SF of high-cube short-term transload warehouse on 38.2-acre site. This VMT analysis evaluated the project using the 2016 and 2040 model years obtained from the San Bernardino County Transportation Authority (SBCTA).

Background

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT).

Methodology

The project VMT analysis was conducted using the City of Adelanto's *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS)* (Guidelines), dated July 2020. The guidelines included project screening criteria which was reviewed for the project evaluation. The project doesn't qualify for VMT screening under any of the established screening criteria. Hence, a full VMT analysis was conducted using San Bernardino County Transportation Analysis Model (SBTAM) as recommended in the City's guidelines.

SBTAM model is a socioeconomic data based model and so the project land use was converted into model employment categories using conversion factors from SCAG's *Employment Density Study Summary Report – dated October 31, 2001*. The land use conversion yielded a total of 325 employees as shown in Table 1 which was used as input for the model runs.

Table 1: Rancho 38 Warehouse – Employment Estimates

Land Use Type	Square Footage (SF)	SF/Employee *	Total Employees
Warehouse	689,824	2,111	327
Total	**689,824**		**327**

Source: SCAG Employment Density Study Summary Report, October 31, 2001

VMT Analysis

Both baseline (2016) and horizon year (2040) model runs were used to estimate project's VMT impacts. SBTAM socioeconomic databases for the scenarios were updated with the project land use to calculate project VMT. Typically, project VMT is calculated by isolating the project in a new TAZ or multiple TAZs depending on the diversity of project land uses and project size. Since, SBTAM does not allow addition of new TAZs, one TAZ was borrowed for this project. The project TAZ was utilized to calculate project specific VMT per service population.

No project specific network modifications were conducted for the model scenarios. Full model runs with feedback loops were conducted for all of the project scenarios. It should be noted that the project land use was included in the model as additional land use in the cumulative (2040) scenario and no shifting of land use from other TAZs was used. In that regard, the cumulative VMT analysis can be considered as a conservative estimate.

Based on the Guidelines, either project's Origin/Destination (OD) VMT per service population or Production/Attraction (PA) VMT per service population can be used to evaluate project impact if the project consists of a single land use. As the proposed project consists of a single land use (warehouse), either OD VMT or PA VMT per service population can be used to evaluate the project. OD VMT per service population was used as the evaluation metric for the project.

Origin-destination matrix outputs were used as trips and the trip lengths were derived from the skimming step to estimate OD VMT as recommended in the guidelines. OD matrix outputs include vehicle trips and hence no conversion for auto occupancy was applied. The trip length or distance was obtained using the model outputs from the "Skimming" step. The model skim outputs include peak and off-peak skim matrices by mode, similar to trip outputs from the model. OD VMT was estimated for both peak and off-peak and added together to estimate the total daily VMT for the project.

The project OD VMT per service population for base and cumulative scenarios was compared with San Bernardino County regional average OD VMT per service population. The San Bernardino County OD VMT per service population threshold was obtained from the guidelines (CEQA VMT Impact Thresholds section of the guidelines).

Table 2 below shows the project VMT metrics for both baseline (2016) and cumulative (2040) conditions along with the regional VMT thresholds.

Table 2: **Project VMT analysis**

2016	Rancho 38 Warehouse (project)	San Bernardino County (Threshold)*
Population	0	
Employment	327	
Service Population	327	
OD VMT	9,549	
OD VMT per service population	29.2	32.7

2040	Rancho 38 Warehouse (project)	San Bernardino County (Threshold)*
Population	0	
Employment	327	
Service Population	327	
OD VMT	9,875	
OD VMT per service population	30.2	32.7

* Threshold value obtained from City of Adelanto "Traffic Impact Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS), July 2020)

Table 3 illustrates the project's effect on VMT. The project's effect on VMT is a comparison of roadway VMT within San Bernardino County for both "With project" and "Without project" conditions.

Table 3: Roadway VMT within San Bernardino County

2016	With Project	Without Project
Roadway VMT	57,497,592	57,484,358
Service population	2,891,567	2,891,240
VMT per service population	19.9	19.9

2040	With Project	Without Project
Roadway VMT	88,527,742	88,879,672
Service population	3,699,825	3,699,498
VMT per service population	23.9	24.0

Conclusion

Based on the VMT analysis as shown in above Tables 2 and 3, the project doesn't constitute a significant impact for both "project generated VMT" and "project's effect on VMT."