

September 9, 2022

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ORCHARD LOGISTICS CENTER VEHICLE MILES TRAVELED (VMT) ANALYSIS

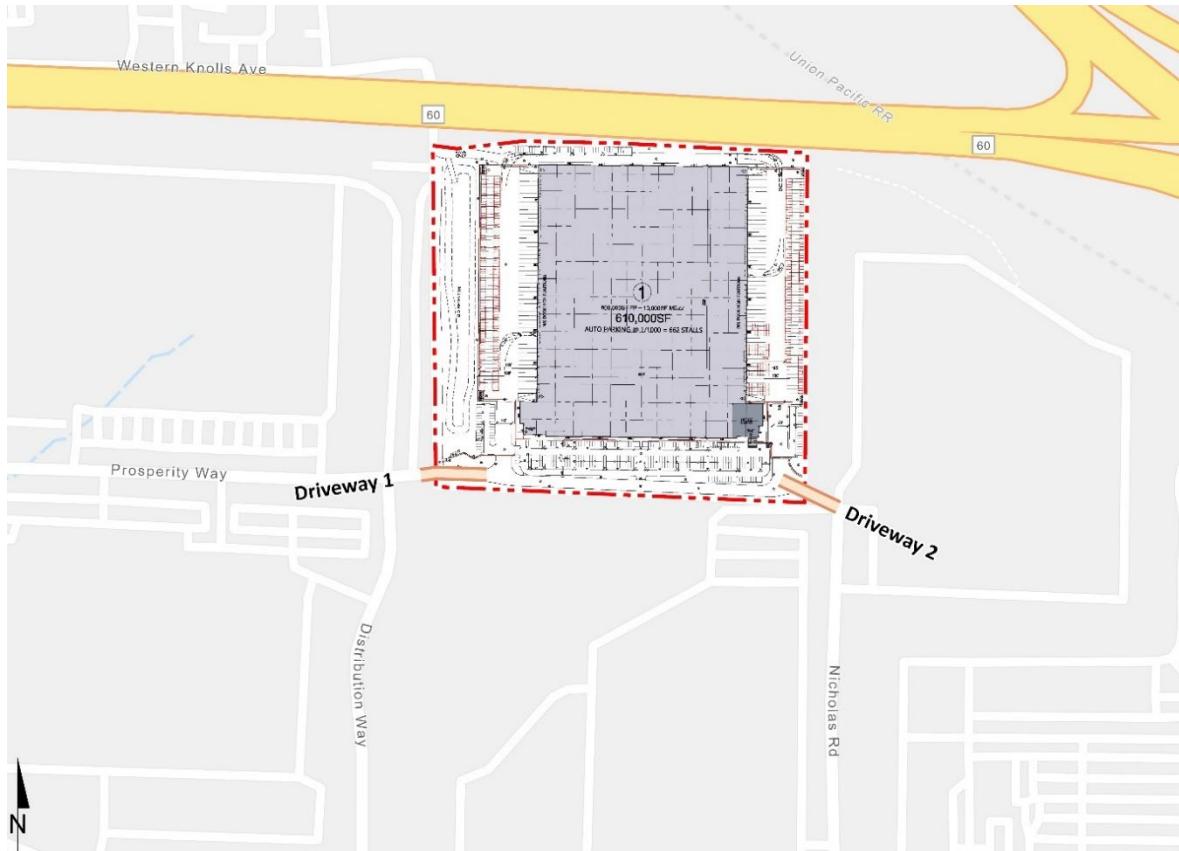
Mr. Neal H. Holdridge,

The following Vehicle Miles Traveled (VMT) Analysis has been prepared for the proposed Orchard Logistics Center (**Project**), which is located just south of Moreno Valley Freeway (SR-60 Freeway) and north of West 4th Street in City of Beaumont.

PROJECT OVERVIEW

The Project is proposed to consist of a 610,000 square feet (**SF**) industrial building, of which 10,000 SF is office mezzanine space. Preliminary site plan can be found on Exhibit 1.

EXHIBIT 1: PRELIMINARY SITE PLAN



BACKGROUND

Changes to California Environmental Quality Act (**CEQA**) Guidelines were adopted in December 2018, which requires all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (**LOS**) as the new measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (**OPR**) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**) (1). Based on OPR's Technical Advisory, the City of Beaumont adopted Resolution No. 2020-20 "Vehicle Miles Traveled" Thresholds of Significance for Purposes of Analyzing Transportation Impacts under the California Environmental Quality Act (June 16, 2020) (2) (**City Guidelines**), which documents the City's VMT analysis methodology and approved impact threshold. The VMT analysis presented in this report has been developed based on the adopted City Guidelines.

VMT SCREENING

Consistent with Technical Advisory, projects that meet certain screening thresholds based on their location and project type may be presumed to result in a less than significant transportation impact. The City of Beaumont utilizes the Western Riverside Council of Governments (**WRCOG**) VMT Screening Tool (**Screening Tool**), which simplifies the screening process consistent with the screening thresholds recommended in the Technical Advisory. The following screening criteria are described within the Technical Advisory:

- Step 1: Transit Priority Area (**TPA**) Screening
- Step 2: Low VMT Area Screening
- Step 3: Project Type Screening

A land use project need only meet one of the above screening criteria to result in a less than significant impact.

STEP 1: TPA SCREENING

Consistent with guidance identified in the Technical Advisory, projects located within a Transit Priority Area (**TPA**) (i.e., within ½ mile of an existing "major transit stop"¹ or an existing stop along a "high-quality transit corridor"²) may be presumed to have a less than significant impact absent substantial evidence to the contrary.

However, the presumption may not be appropriate if a project:

¹ Pub. Resources Code, § 21064.3 ("Major transit stop" means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

² Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

- Has a Floor Area Ratio (**FAR**) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Based on the Screening Tool, the Project site is shown not to be located within a TPA (see Attachment A).

The TPA screening criteria is not met.

STEP 2: LOW VMT AREA SCREENING

As noted in the Technical Advisory, "Residential and office projects that locate in areas with low VMT and that incorporate similar features (density, mix of uses, and transit accessibility) will tend to exhibit similarly low VMT."³ The Screening Tool allows users to input an assessor's parcel number (**APN**) to determine if a project's location meets one or more of the screening thresholds for land use projects. The Screening Tool uses the sub-regional Riverside County Model (**RIVCOM**) to measure VMT performance within individual traffic analysis zones (**TAZ's**) within the region. The Project's physical location was identified in the map, the Screening Tool then provides VMT data for the TAZ in which the project resides to determine existing VMT for that zone.

Based on the Screening Tool results (see Attachment A) the Project does not reside in a low VMT area.

The Low VMT Area screening criteria is not met.

STEP 3: PROJECT TYPE SCREENING

Local serving uses and local essential services (e.g., local parks, day care centers, public schools, etc.) are presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, projects generating fewer than 110 daily vehicle trips may be presumed to have a less than significant impact.³ Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (**ITE**) Trip Generation Manual, 11th Edition, 2021 (3). The proposed Project is estimated to exceed the 110 daily vehicle trip threshold (See Attachment B).

The Project type screening criteria is not met.

As none of the aforementioned screening criteria has been met, a project level VMT analysis shall be prepared.

³ Technical Advisory; Page 12

VMT ANALYSIS

VMT MODELING

City Guidelines identifies RIVCOM as the appropriate tool for conducting VMT analysis for land development projects in the City of Beaumont. The RIVCOM travel demand model is maintained by WRCOG and is the most recent sub-regional modeling tool for Western Riverside County. RIVCOM is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, and employment. The calculation of VMT for land use projects is based on the total number of trips generated and the average trip length of each vehicle. Therefore, the vehicle trips and average daily trip length for project-related vehicle trips are derived using RIVCOM.

VMT METRIC AND SIGNIFICANCE THRESHOLD

Based on the City Guidelines, a land use project in the City of Beaumont shall use the efficiency metric VMT per service population (**SP**) (i.e., population and employment) as the appropriate measure of VMT for purposes of determining a potential transportation impact.

More specifically, the City has adopted the following impact threshold for land use projects:

- Utilizing a threshold not to exceed 3% below the City's current average VMT per SP⁴

VMT calculations from the RIVCOM model for jurisdictional averages are obtained from WRCOG's Screening Tool. The baseline City of Beaumont current average VMT per SP is 31.56, therefore, an impact threshold of 3% below the City's current average VMT per SP is **30.61 VMT per SP**.

PROJECT LAND USE CONVERSION

In order to measure Project total VMT, land use information must first be converted into a RIVCOM compatible dataset. The RIVCOM model utilizes socio-economic data (**SED**) (e.g., population, households, employment, etc.) instead of land use information to estimate vehicle trips. Project SED information (i.e., employees) was added to the RIVCOM model to represent the Project. The total number of employees generated on site is expected to be 610 employees (1,030 sf/employee per the County of Riverside General Plan Appendix E-2⁵. However, the number of employees for purposes analyzing VMT was increased to calibrate the RIVCOM model with the project generated trips based on ITE LU Code 157 and WSP, High Cube Warehouse (see Table 4-1 of the Orchard Logistics Center (PW2022-0874) Traffic Analysis.

VMT ESTIMATES

Total VMT for the Project was extracted from the RIVCOM origin-destination (OD) trip matrices, which includes total Project VMT for all vehicle trips (both passenger cars and trucks) and trip purposes. RIVCOM output data can be found in Attachment C. The Project's total VMT is then

⁴ Resolution No. 2020-20 City Council Staff Report; Pages 338-339

⁵ County of Riverside General Plan; Appendix E-2, Table E-5

divided by the SP (i.e., employees). Table 1 presents total VMT and VMT per SP estimates for the Project.

TABLE 1: PROJECT VMT PER SERVICE POPULATION

Project	
Total VMT	29,977
Service Population	738
VMT per Service Population	40.62

PROJECT COMPARISON TO SIGNIFICANCE THRESHOLD

Table 2 illustrates a comparison between the Project's VMT per SP to the City's adopted impact threshold. Project total VMT per SP is 34.56% above the impact threshold. Therefore, the Project's VMT impact is considered potentially significant.

TABLE 2: PROJECT GENERATED VMT PER SP COMPARISON

Project	
Impact Threshold	30.61
Project Total VMT per SP	40.62
VMT per SP Above Threshold	+32.70%
Potentially Significant?	Yes

PROJECT'S CUMULATIVE EFFECT ON VMT

The City Guidelines are consistent with the Technical Advisory that states cumulative impacts on VMT "... metrics such as VMT per capita or VMT per employee, i.e., metrics framed in terms of efficiency (as recommended below for use on residential and office projects), cannot be summed because they employ a denominator. A project that falls below an efficiency-based threshold that is aligned with long-term goals and relevant plans has no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa. This is similar to the analysis typically conducted for greenhouse gas emissions, air quality impacts, and impact that utilize plan compliance as a threshold of significance." Since the Project was found to have a potentially significant impact at the project level, it is considered to have a potentially significant cumulative impact as well.

POTENTIAL REDUCTIONS TO VMT

Commute trip reduction measures can be used to help reduce VMT (i.e., commute trips) determined to be potentially significant. The level of effectiveness of such trip reduction measures are described in the [Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity](#) (CAPCOA, 2021) (**2021 Handbook**). Locational context is a major factor relevant to the potential application and effectiveness of commute trip reduction measures. The three locational contexts identified by

the 2021 Handbook are suburban, urban, and rural.⁶ The locational context of the Project is characteristically suburban, which as noted in the 2021 Handbook further limits the effectiveness of a particular commute trip reduction measure as compared to an urban/city center with high accessibility to transit and other modes of transportation beyond the single occupancy automobile. In addition to limitations related to locational context, as future building tenant(s) are not known for the Project, the ultimate effectiveness of any commute trip reduction measure cannot be guaranteed.

It is also recognized that as the Project area and surrounding communities develop as envisioned under the City of Beaumont General Plan (Elevate Beaumont 2040 Plan), new residential, retail, and industrial development would be implemented. These actions could collectively alter transportation patterns, improve the region's jobs/housing ratio, reduce VMT, and support implementation of new or alternative transportation demand management measures.

There is no means, however, to definitively quantify VMT reductions that could result from measures implemented by the Project, or that could result from actions beyond the control of the Project. The effectiveness of these measures is dependent on as yet unknown Project building tenant(s) and employee participation; as well as actions of other developments and government(s) that may directly or indirectly affect Project VMT. Conservatively, this analysis assumes no reduction in VMT that may result from Project VMT reductions measures, or that may result directly or indirectly from actions by others.

SUMMARY AND CONCLUSION

Based on the results of this analysis the following findings are made:

- The Project VMT impact was evaluated against screening criteria as outlined in the Technical Advisory. The Project was not found screened from further analysis and a VMT impact analysis was performed.
- The Project VMT impact analysis substantiates that Project VMT would exceed the impact threshold by 32.70% and, therefore, the Project is determined to have a potentially significant VMT impact.
- As the Project has as of yet unknown building tenants and cannot guarantee future operator or employee participation in any such trip reduction measure, this analysis conservatively assumes no reduction in VMT that may result from design features or measures intended to reduce commute VMT. The Project VMT impact is therefore considered significant and unavoidable. Significant VMT impacts at the Project level would also be cumulatively significant.

⁶ 2021 Handbook; Page 43

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If you have any questions, please contact me directly at aso@urbanxroads.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

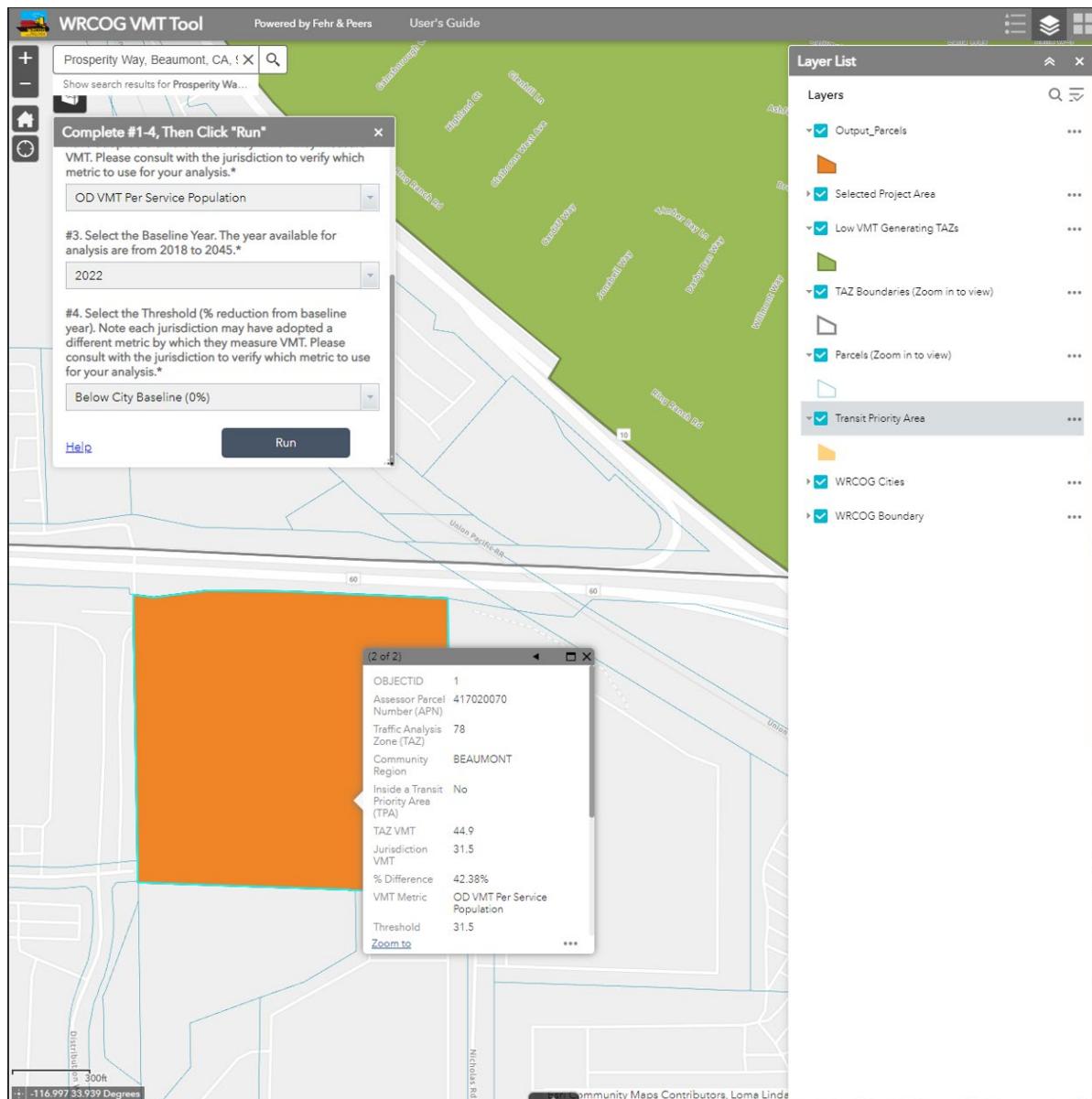


Alexander So
Senior Associate

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **City of Beaumont.** *SB 743 Vehicle Miles Traveled (VMT) Thresholds for California Environmental Quality Act (CEQA) Compliance Related to Transportation Analysis.* June 2020.
3. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.

ATTACHMENT A
WRCOG SCREENING TOOL



ATTACHMENT B
PROJECT TRIP GENERATION SUMMARY

PROJECT TRIP GENERATION RATES

Land Use	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicle Trip Generation Rates									
High-Cube Cold Storage Warehouse ^{1,3}	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+Axle Trucks			0.005	0.011	0.016	0.008	0.008	0.016	0.407
High-Cube Fulfillment Center Warehouse ⁴	TSF	--	0.089	0.033	0.122	0.050	0.115	0.165	2.129
Passenger Cars			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks			0.004	0.004	0.008	0.005	0.006	0.011	0.162
5+Axle Trucks			0.005	0.006	0.011	0.005	0.005	0.010	0.217

¹ Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

² TSF = thousand square feet

³ Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

⁴ Vehicle Mix Source: High Cube Warehouse Trip Generation Study, WSP, January 29, 2019.

Inbound and outbound split source: ITE Trip Generation Manual, Eleventh Edition (2021) for ITE Land Use Code 154.

PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units ¹	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Actual Vehicles:									
High-Cube Cold Storage	61.000	TSF							
Passenger Cars:			5	0	5	1	4	5	84
2-axle Trucks:			0	0	0	0	0	0	16
3-axle Trucks:			0	0	0	0	0	0	6
4+axle Trucks:			0	1	1	0	1	1	26
Total Truck Trips (Actual Vehicles):			0	1	1	0	1	1	48
Cold Storage Trips (Actual Vehicles) ²			5	1	6	1	5	6	132
High-Cube Fulfillment	549.000	TSF							
Passenger Cars:			44	13	57	22	57	79	962
2-4axle Trucks:			2	2	4	3	3	6	90
5+axle Trucks:			3	3	6	3	3	6	120
Total Truck Trips (Actual Vehicles):			5	5	10	6	6	12	210
Fulfillment Trips (Actual Vehicles) ²			49	18	67	28	63	91	1,172
Passenger Cars			49	13	62	23	61	84	1,046
Trucks			5	6	11	6	7	13	258
Total Trips (Actual Vehicles)²			54	19	73	29	68	97	1,304

¹ TSF = thousand square feet

² Total Trips = Passenger Cars + Truck Trips.

ATTACHMENT C
RIVCOM OUTPUT DATA

TABLE 1: RIVCOM BASE MODEL OUTPUT FOR PROJECT TAZ

TAZ	78
Daily_Home-Based (incl. IEHB) Prod VMT	328.578674
Daily_HBW (incl. EIHBW) Attr VMT	21452.48047
Daily_Total Auto OD From VMT	11516.88965
Daily_Total Auto OD To VMT	12643.91016
Daily_Total Auto OD Intra VMT	1.64734
Daily_Total Truck OD From VMT	3051.886719
Daily_Total Truck OD To VMT	3135.527832
Daily_Total Truck OD Intra VMT	3.526414
Daily_Total OD From VMT	14568.77637
Daily_Total OD To VMT	15779.4375
Daily_Total OD Intra VMT	5.173755
Daily_Total_TripLen	24.256862
Population	0
Employment	738
Enrollment	0

TABLE 2: RIVCOM FUTURE MODEL OUTPUT FOR PROJECT TAZ

TAZ	78
Daily_Home-Based (incl. IEHB) Prod VMT	324.01355
Daily_HBW (incl. EIHBW) Attr VMT	19836.84766
Daily_Total Auto OD From VMT	10773.7207
Daily_Total Auto OD To VMT	11698.71094
Daily_Total Auto OD Intra VMT	1.084343
Daily_Total Truck OD From VMT	2692.998047
Daily_Total Truck OD To VMT	2677.667236
Daily_Total Truck OD Intra VMT	2.525819
Daily_Total OD From VMT	13466.71875
Daily_Total OD To VMT	14376.37891
Daily_Total OD Intra VMT	3.610162
Daily_Total_TripLen	21.501129
Population	0
Employment	738
Enrollment	0



ALEX SO

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EXPERIENCE

➤ **South Ontario Logistics Center**

City of Ontario | August 2021

This Project consists of 5,412,591 square feet industrial park. 4,337,356 square feet of industrial land uses, and 1,075,235 square feet of business park uses. The Project is located on the northeast corner of Bon View Avenue and Merrill Avenue. Urban Crossroads utilized the SBTAM Model to conduct this analysis.

➤ **Banning Point**

City of Banning | October 2021

This Project consists of 464,969 square feet of high-cube fulfillment center warehouse use (75% of the industrial use), 154,990 square feet of high-cube cold storage warehouse use (25% of the industrial use), 16,200 square feet of fast-food restaurant without drive-through window use, 1,600 square feet of coffee-donut shop with drive-through window use, and 16,200 square feet of shopping center use. The Project is located on the northeast corner of Sun Lake Village Drive and Sun Lake Boulevard. Urban Crossroads utilized the RIVTAM Model to conduct this analysis.

➤ **Foothill Apartments**

City of Rialto | September 2021

This Project consists of 204 multifamily residential dwelling units. This Project is located at 534 Foothill Boulevard in the City of Rialto. Urban Crossroads determined that this project screened out of a full VMT Analysis.

BACKGROUND

Alex So has worked in transportation planning and traffic engineering since 2019. Mr. So has developed a wide range of expertise in transportation planning and transportation modeling with a focus on helping clients develop mitigation strategy plans in response to ever evolving environmental and legislative requirements. He is proficient in the use of traffic analysis and modeling software such as ArcMap, ArcGIS Pro, and TransCAD version 5, 6 and 8.

EDUCATION

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