Appendix H:
Transportation Supporting Information

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H.1 - Trip Generation Assessment

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APPROVED
Vital Patel
02/07/2023

CITY OF RIVERSIDE
City of Arts & Innovation

Public Works Department

Traffic Analysis Scoping Form

This scoping form shall be submitted to the City of Riverside Traffic Engineering Division

Project Identification:

Case Number:	PR-2022-001409
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Palmyrita Warehouse Project
Project Address:	NEC of Iowa and Palmyrita - 1151 Palmyrita Avenue
Project Opening Year:	
Project Description:	Scenario 1: 265,758 SF of warehousing use
	Scenario 2: 177,332 SF of warehousing use, 61,111 SF of manufacturing use totaling 244,442 SF & replacing existing manufacturing use of 99,165 SF

	Consultant:	**Developer:**
Name:	Urban Crossroads - Charlene So	Dedeaux Properties - Benjamin Horning
Address:	1133 Camelback St, #8329	100 Wilshire Bl., Suite 250
	Newport Beach, CA 92658	Santa Monica, CA 90401
Telephone:	949-861-0177	
Fax/Email:	cso@urbanxroads.com	

Scoping & Study Fees:

Fees to be made payable to "City of Riverside" and delivered to Land Development. City Hall 3rd Floor, 3900 Main Street, Riverside, CA 92522

1) Scoping Agreement Fee (For all projects not screened from analysis): **$271.00**

2) TIA Review (For projects with both LOS & VMT analysis of any scale, or standalone LOS analyses with over 100 vehicle trips per hour): **$2671.02**

3) TIA Review (For standalone VMT analysis, or standalone LOS analyses with under 100 vehicle trips per hour): **$1288.20**

Trip Generation Information:

Trip Generation Data Source: ITE, Trip Generation Manual (11th Edition, 2021)

Current General Plan Land Use: B/OP (Business Park/Office)

Proposed General Plan Land Use: B/OP (Business Park/Office)

Current Zoning: BMP

Proposed Zoning: BMP

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips				See attached memo - 2 scenarios		
PM Trips						

Trip Internalization: ☐ Yes ☒ No (_____% Trip Discount)

Pass-By Allowance: ☐ Yes ☒ No (_____% Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses in accordance with City Guidelines?

Is the project screened from LOS assessment? ☒ Yes ☐ No

LOS screening justification (see Page 6 of the guidelines): Project generates fewer than 100 net new peak hour trips (for both scenarios)

Is the project screened from VMT assessment? ☐ Yes ☐ No

VMT screening justification (see Pages 23-25 of the guidelines): Scenario 1 is fewer than 110 net new daily trips (and therefore screens out from VMT), however Scenario 2 does not.

Level of Service Scoping

- Proposed Trip Distribution (Attach Graphic for Detailed Distribution):

North	South	East	West
N/A %	%	%	%

- Attach list of Approved and Pending Projects that need to be considered (provided by the lead agency and adjacent agencies)
- Attach list of study intersections/roadway segments
- Attach legible site plan
- Note other specific items to be addressed:
  - Site access
  - On-site circulation
  - Parking
  - Consistency with Plans supporting Bikes/Peds/Transit
  - Other _____
- Date of Traffic Counts N/A
- Attach proposed analysis scenarios (years plus proposed forecasting approach)
- Attach proposed phasing approach (if the project is phased)

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model For Scenario 2 only, RIVCOM
- Attach WRCOG Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

Specific Issues to be addressed in the Study (in addition to the standard analysis described in the Guidelines) (To be filled out by the Public Works Traffic Engineering Division)

1. Eastern most dwy along Palmyrita Avenue shall be right-in/right-out only. Project shall install appropriate signage for right-in/out at the entry way to roadways to implement right-in/out movements.Please label the driveway accordingly on the site plan.

2. Access from the driveway located at Iowa Avenue should be right-in/out only. Project shall install appropriate signage for right-in/out at the entry way to roadways to implement right-in/out movements.Project shall construct a raised median island on Iowa Av. to restrict access to right-in/right-out access only.

3. Project will be conditioned to improve the signal by upgrading the pedestrian push buttons to audible push buttons and installing a battery backup system at Palmyrita & Iowa.

3900 Main Street, Riverside, CA 92522 | Phone: (951) 826-5366| **RiversideCA.gov**

February 7, 2023

Ms. Angela Wolfe
FirstCarbon Solutions
250 Commerce, Suite 250
Irvine, CA 92602

PALMYRITA WAREHOUSE PROJECT TRIP GENERATION ASSESSMENT

Ms. Angela Wolfe,

Urban Crossroads, Inc. is pleased to submit this Trip Generation Assessment for the proposed Palmyrita Warehouse Project (referred to as **Project**) which is located in the City of Riverside. The Project site is bounded to the east by railroad tracks; Palmyrita Avenue to the south; Iowa Avenue to the west; and railroad tracks, large warehouse, and a vacant lot to the north. It should be noted that this trip generation assessment has been prepared in accordance with the City's Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (July 2020) (**City Guidelines**).

PROPOSED PROJECT

The Project will be evaluated assuming two potential land use scenarios:

- Scenario 1: 139,667 square feet for Building 1 and 126,091 square feet for Building 2 for a total of 265,758 square feet evaluated assuming 100% warehousing use (see Exhibit 1)
- Scenario 2: 119,315 square feet for Building 1 and 119,127 square feet for Building 2 for a total of 244,442 square feet evaluated assuming 177,331 square feet of warehousing and 61,111 square feet of manufacturing use (see Exhibit 2)

There is an existing underutilized warehouse use with some light manufacturing activity within an existing 99,165-square foot building. Access to the site is proposed to be the same between the two scenarios. Building 1 is proposed to have right-in/right-out access to Iowa Avenue and Building 2 is proposed to have right-in/right-out access on Palmyrita Avenue at the eastern end of the site with a shared full-access driveway located mid-point on the site frontage on Palmyrita Avenue which would serve both buildings.

EXHIBIT 1: PRELIMINARY SITE PLAN (SCENARIO 1)

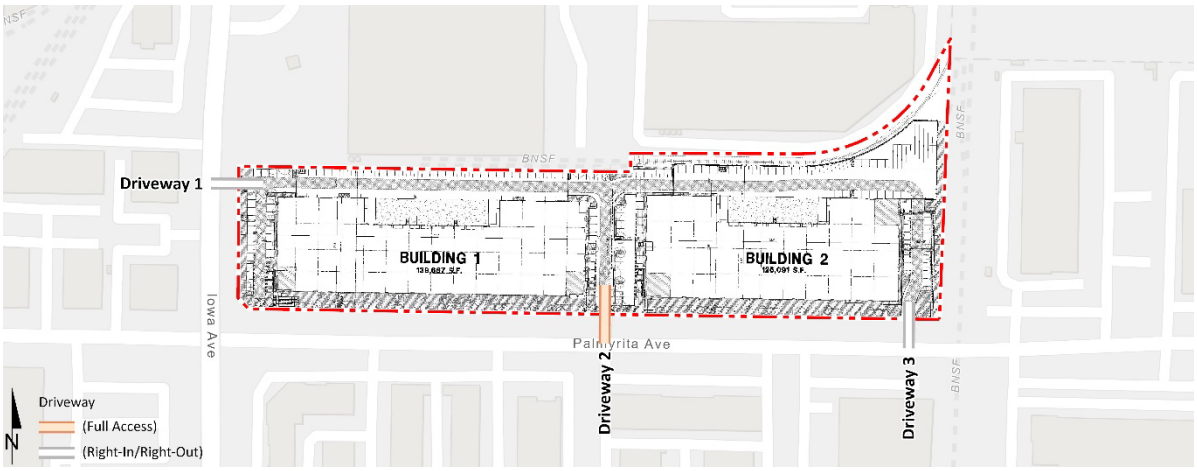
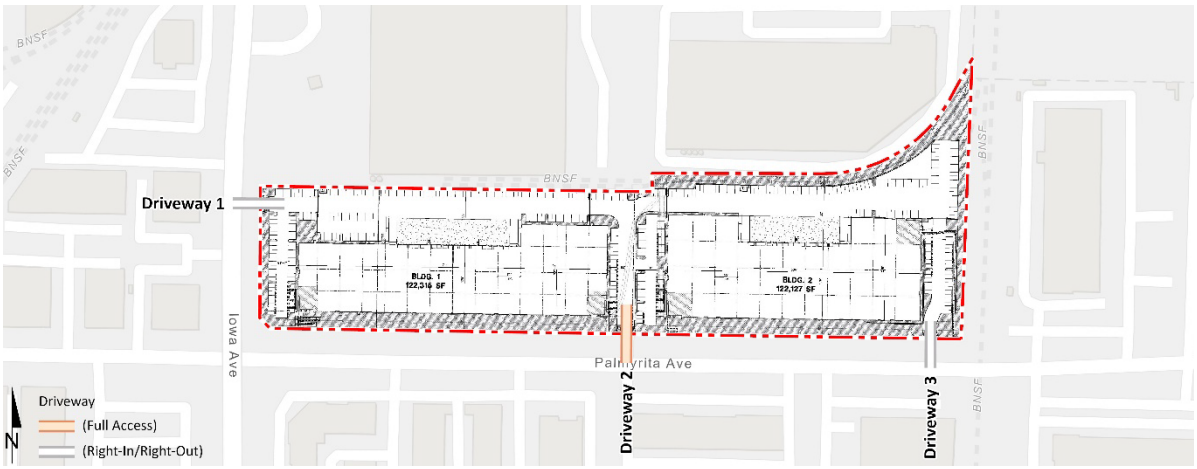


EXHIBIT 2: PRELIMINARY SITE PLAN (SCENARIO 2)



TRIP GENERATION

EXISTING TRAFFIC

The Project site is currently used for a small-scale manufacturing facility occupied by Barrette Wood USA and Barrette Outdoor Living in an existing warehouse building on the west side of the site. Two area of grasslands are located on the western and eastern portions of the site. The central and eastern portions of the Project site consist of paved parking. An inactive railroad spur diagonally transects the eastern side of the Project site. Two additional freight lines transect the northern and eastern perimeters of the Project site. Associated landscaping is located along the southern border of the Project site adjacent to Palmyrita Avenue.

The existing underutilized warehouse use currently includes some light manufacturing activity within an existing 99,165-square foot building (evaluated as manufacturing use). In an effort to understand the existing traffic associated with the current uses, the trip generation rates used

for this analysis are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation Manual (11th Edition, 2021) using the manufacturing (ITE Land Use Code 140) and warehousing (ITE Land Use Code 150) land use categories (see Table 1).

TABLE 1: TRIP GENERATION RATES

Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Manufacturing[3]	140	TSF	0.517	0.163	0.680	0.229	0.511	0.740	4.750
Passenger Cars			0.500	0.150	0.650	0.217	0.493	0.710	4.300
Trucks			0.017	0.013	0.030	0.012	0.018	0.030	0.450
Warehousing[3]	150	TSF	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
Trucks			0.011	0.009	0.020	0.016	0.014	0.030	0.600
Passenger Car Equivalent (PCE):									
Manufacturing[3]	140	TSF	0.517	0.163	0.680	0.229	0.511	0.740	4.750
Passenger Cars			0.500	0.150	0.650	0.217	0.493	0.710	4.300
Trucks (PCE = 2.0)			0.034	0.026	0.060	0.025	0.035	0.060	0.900
Warehousing[3]	150	TSF	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
Trucks (PCE = 2.0)			0.022	0.018	0.040	0.032	0.028	0.060	1.200

[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 % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

The following summarizes the proposed land use and vehicle mix:

- Manufacturing – ITE land use code 140 has been used to derive site specific trip generation estimates for both the existing use and the proposed Project. A manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research, and associated functions. The vehicle mix has been obtained from the ITE's latest Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.
- Warehousing – ITE Land Use Code 150 has been used to derive site specific trip generation estimates for the proposed Project. A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has also been obtained from the ITE's latest Trip Generation Manual. The truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

The average trip generation rate has been utilized for both land uses as opposed to using the regression equation (fitted curve method). For a building at 99,165 square feet (existing use) the average trip generation rates for both land uses is less than the fitted curve rates. In order to conduct a conservative analysis and calculate a lower trip generation for the existing use, which would be used to take credit against the proposed uses, the average rates have been used. For the proposed Project square footage, the average trip generation rates are either very similar to or greater than the fitted curve rates.

The trip generation summary illustrating daily, and peak hour trip generation estimates for the existing use in actual and passenger car equivalent (PCE) vehicles are shown on Table 2. As shown in Table 2, the existing use generates a total of 474 two-way trips per day with 72 AM peak hour trips and 78 PM peak hour trips (in actual vehicles). In comparison, the existing use generates a total of 520 two-way PCE trips per day with 74 PCE AM peak hour trips and 80 PCE PM peak hour trips (see also Table 2).

PCE factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in the City Guidelines and with those used for other projects within the City (PCE factor of 2.0 for all heavy trucks).

TABLE 2: EXISTING TRIP GENERATION

			AM Peak Hour			PM Peak Hour			
Existing Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:									
Manufacturing	99.165	TSF							
Passenger Cars:			50	15	65	22	49	71	428
Total Trucks:			4	3	7	3	4	7	46
Total Trips (Actual Vehicles)			**54**	**18**	**72**	**25**	**53**	**78**	**474**
Passenger Car Equivalent (PCE):									
Manufacturing	99.165	TSF							
Passenger Cars:			50	15	65	22	49	71	428
Total Trucks (PCE):			5	4	9	4	5	9	92
Total Trips (PCE)			**55**	**19**	**74**	**26**	**54**	**80**	**520**

[1] TSF = thousand square feet

PROPOSED PROJECT

The trip generation rates used for this analysis are based upon information collected by the ITE as provided in their Trip Generation Manual (11th Edition, 2021) are shown previously on Table 1.

Scenario 1:

The trip generation summary illustrating daily, and peak hour trip generation estimates for the proposed Project (Scenario 1) in actual and PCE vehicles are shown on Table 3 based on 265,758 square feet of warehousing use. As shown in Table 3, the proposed Project is anticipated to generate a total of 456 two-way trips per day with 46 AM peak hour trips and 50 PM peak hour trips (in actual vehicles). In comparison, the proposed Project is anticipated to generate a total of 616 PCE two-way trips per day with 51 PCE AM peak hour trips and 58 PCE PM peak hour trips (see also Table 3).

TABLE 3: PROJECT TRIP GENERATION SUMMARY (SCENARIO 1)

			AM Peak Hour			PM Peak Hour			
Project Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:									
Warehouse	265.758	TSF							
Passenger Cars:			32	8	40	10	31	41	296
Total Trucks:			3	3	6	5	4	9	160
Total Trips (Actual Vehicles)			**35**	**11**	**46**	**15**	**35**	**50**	**456**
Passenger Car Equivalent (PCE):									
Warehouse	265.758	TSF							
Passenger Cars:			32	8	40	10	31	41	296
Total Trucks (PCE):			6	5	11	9	8	17	320
Total Trips (PCE)			**38**	**13**	**51**	**19**	**39**	**58**	**616**

[1] TSF = thousand square feet

Scenario 2:

The trip generation summary illustrating daily, and peak hour trip generation estimates for the proposed Project (Scenario 2) in actual and PCE vehicles are shown on Table 4 based on 177,331 square feet of warehousing use and 61,111 square feet of manufacturing use. As shown in Table 4, the proposed Project is anticipated to generate a total of 598 two-way trips per day with 74 AM peak hour trips and 79 PM peak hour trips (in actual vehicles). In comparison, the proposed Project is anticipated to generate a total of 732 PCE two-way trips per day with 80 PCE AM peak hour trips and 86 PCE PM peak hour trips (see also Table 4).

TABLE 4: PROJECT TRIP GENERATION SUMMARY (SCENARIO 2)

Project Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Manufacturing	61.111	TSF							
Passenger Cars:			31	9	40	13	30	43	264
Total Trucks:			1	1	2	1	1	2	28
Warehouse	177.331	TSF							
Passenger Cars:			22	6	28	7	21	28	198
Total Trucks:			2	2	4	3	3	6	108
Total Trips (Actual Vehicles)			**56**	**18**	**74**	**24**	**55**	**79**	**598**
Passenger Car Equivalent (PCE):									
Manufacturing	61.111	TSF							
Passenger Cars:			31	9	40	13	30	43	264
Total Trucks (PCE):			2	2	4	2	2	4	56
Warehouse	177.331	TSF							
Passenger Cars:			22	6	28	7	21	28	198
Total Trucks (PCE):			4	4	8	6	5	11	214
Total Trips (PCE)			**59**	**21**	**80**	**28**	**58**	**86**	**732**

[1] TSF = thousand square feet

TRIP GENERATION COMPARISON

Table 5 shows the trip generation comparison between the existing and proposed use for Scenario 1 and Scenario 2 is summarized on Table 6. The resulting net new trips are identified on Table 5 and Table 6 for each Project Scenario. Per the City's Guidelines, the trip generation comparison is based on PCE as the existing and proposed uses are truck-intensive uses.

As shown on Table 5, the Project (Scenario 1) is anticipated to generate 96 net new two-way trips per day with a net reduction of 23 AM peak hour trips and 22 PM peak hour trips (in PCE) as compared to the existing use.

TABLE 5: TRIP GENERATION COMPARISON (EXISTING VS. SCENARIO 1)

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Proposed Project							
Passenger Cars:	32	8	40	10	31	41	296
Total Truck Trips (Actual Vehicles):	3	3	6	5	4	9	160
Total Truck Trips (PCE):	6	5	11	9	8	17	320
Total Trips (Actual Vehicles)[1]	**35**	**11**	**46**	**15**	**35**	**50**	**456**
Total Trips (PCE)[1]	**38**	**13**	**51**	**19**	**39**	**58**	**616**
Existing Use							
Passenger Cars:	50	15	65	22	49	71	428
Total Truck Trips (Actual Vehicles):	4	3	7	3	4	7	46
Total Truck Trips (PCE):	5	4	9	4	5	9	92
Total Trips (Actual Vehicles)[1]	**54**	**18**	**72**	**25**	**53**	**78**	**474**
Total Trips (PCE)[1]	**55**	**19**	**74**	**26**	**54**	**80**	**520**
Variance							
Passenger Cars:	-18	-7	-25	-12	-18	-30	-132
Total Truck Trips (Actual Vehicles):	-1	0	-1	2	0	2	114
Total Truck Trips (PCE):	1	1	2	5	3	8	228
Total Trips (Actual Vehicles)[1]	**-19**	**-7**	**-26**	**-10**	**-18**	**-28**	**-18**
Total Net Trips (PCE)[1]	**-17**	**-6**	**-23**	**-7**	**-15**	**-22**	**96**

[1] Total Trips = Passenger Cars + Truck Trips.

As shown on Table 6, the Project (Scenario 2) is anticipated to generate 212 net new two-way trips per day with a net increase of 6 AM peak hour trips and 6 PM peak hour trips (in PCE) as compared to the existing use.

TABLE 6: TRIP GENERATION COMPARISON (EXISTING VS. SCENARIO 2)

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Proposed Project							
Passenger Cars:	53	15	68	20	51	71	462
Total Truck Trips (Actual Vehicles):	3	3	6	4	4	8	136
Total Truck Trips (PCE):	6	6	12	8	7	15	270
Total Trips (Actual Vehicles)[1]	**56**	**18**	**74**	**24**	**55**	**79**	**598**
Total Trips (PCE)[1]	**59**	**21**	**80**	**28**	**58**	**86**	**732**
Existing Use							
Passenger Cars:	50	15	65	22	49	71	428
Total Truck Trips (Actual Vehicles):	4	3	7	3	4	7	46
Total Truck Trips (PCE):	5	4	9	4	5	9	92
Total Trips (Actual Vehicles)[1]	**54**	**18**	**72**	**25**	**53**	**78**	**474**
Total Trips (PCE)[1]	**55**	**19**	**74**	**26**	**54**	**80**	**520**
Variance							
Passenger Cars:	3	0	3	-2	2	0	34
Total Truck Trips (Actual Vehicles):	-1	0	-1	1	0	1	90
Total Truck Trips (PCE):	1	2	3	4	2	6	178
Total Trips (Actual Vehicles)[1]	**2**	**0**	**2**	**-1**	**2**	**1**	**124**
Total Net Trips (PCE)[1]	**4**	**2**	**6**	**2**	**4**	**6**	**212**

[1] Total Trips = Passenger Cars + Truck Trips.

TRUCK ACCESS

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at each applicable Project driveway anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers. Both site plans have the same driveway layout and location, as such, only one set of truck turns has been prepared which is applicable to both plans. A WB-67 truck (53-foot trailer) has been utilized for the purposes of this analysis.

As shown on Exhibit 3, Driveway 1 should be widened by 5-feet and a minimum curb radius of 40-feet should be accommodated on the northeast and southeast corners to accommodate the ingress and egress of heavy trucks (right-in/right-out only). Exhibit 4 shows that Driveway 2 should accommodate a 40-foot curb radius on the northwest corner and a 50-foot curb radius on the northeast corner in order to accommodate the ingress and egress of heavy trucks. Lastly, Exhibit 5 shows that Driveway 3 should be straightened and widened by 20-feet with a minimum curb radius of 40-feet on the northwest and northeast corners in order to accommodate the

ingress and egress of heavy trucks (this driveway will be restricted to right-in/right-out access only).

EXHIBIT 3: TRUCK ACCESS AT DRIVEWAY 1

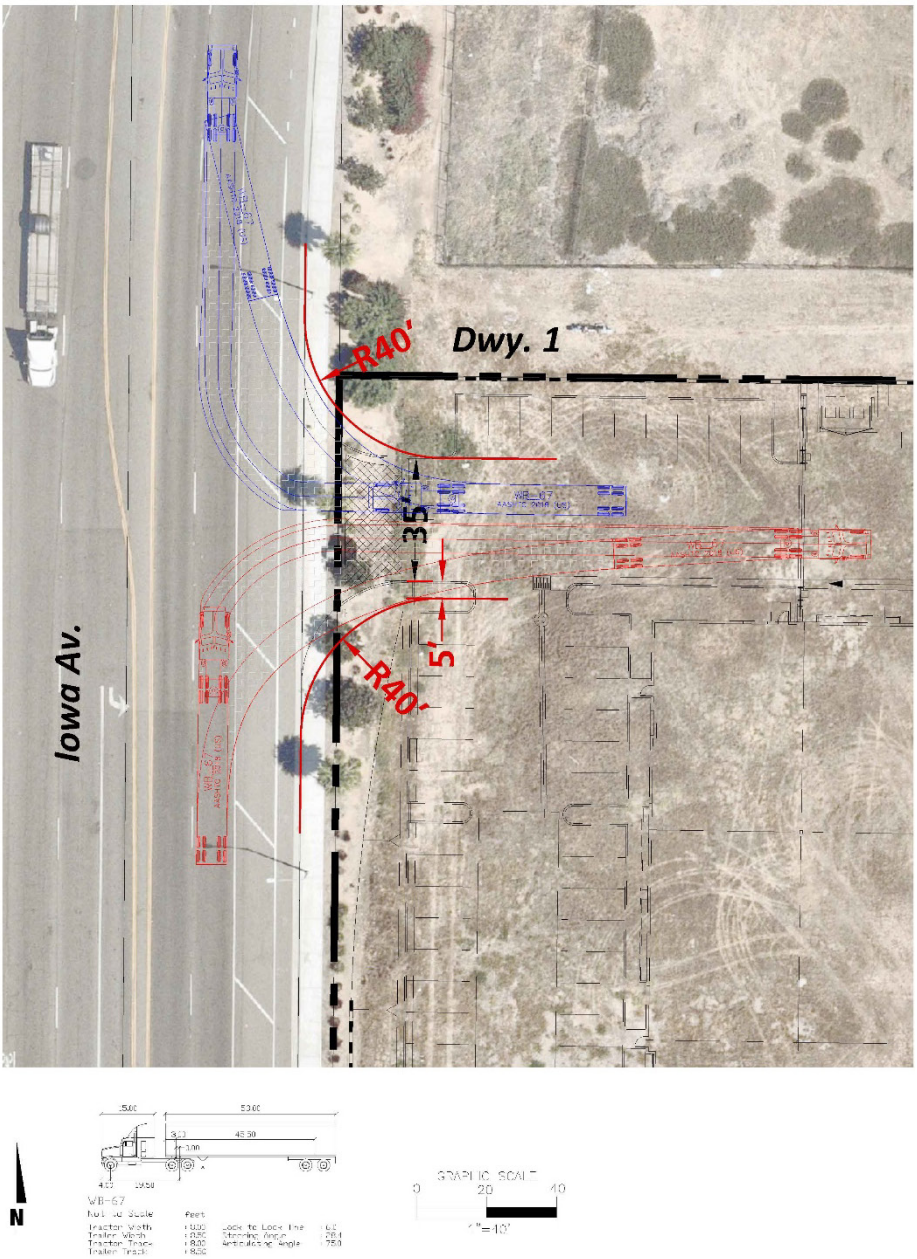


EXHIBIT 4: TRUCK ACCESS AT DRIVEWAY 2

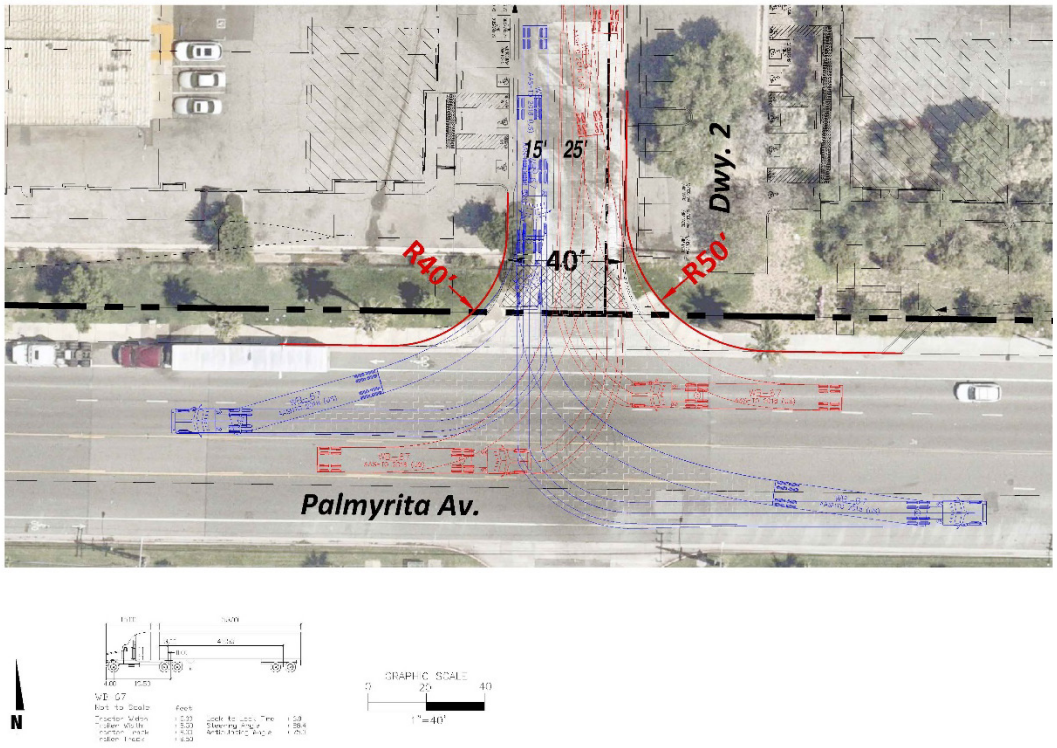
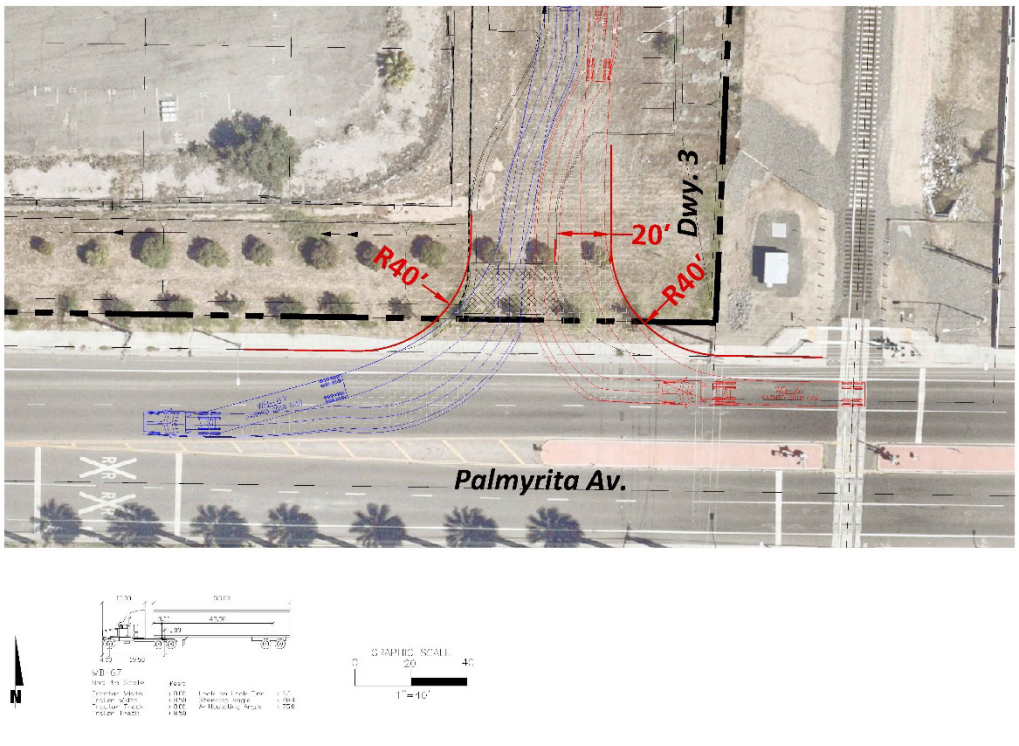


EXHIBIT 5: TRUCK ACCESS AT DRIVEWAY 3



FINDINGS

The City's Guidelines indicates that any use which can demonstrate, based on the most recent edition of the ITE Trip Generation Manual or other approved trip generation data, trip generation of less than 100 vehicle trips during the peak hours are generally exempt from Traffic Analysis requirements as the project would contribute less than 50 peak hour trips to any off-site intersection. The Project is anticipated to generate fewer than 100 net new peak hour trips for each Scenario (see Table 5 and Table 6). As such, additional traffic analysis is not required for this Project based on the City Guidelines.

If you have any questions or comments, I can be reached at cso@urbanxraods.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Principal

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H.2 - Vehicle Miles Traveled Analysis

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October 21, 2022

Ms. Angela Wolfe
FirstCarbon Solutions
250 Commerce, Ste 250
Irvine, CA 92602

PALMYRITA WAREHOUSES VEHICLE MILES TRAVELED (VMT) ANALYSIS

Ms. Angela Wolfe,

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for the Palmyrita Warehouses development (**Project**), which is located on the northeast corner of Iowa Avenue and Palmyrita Avenue in the City of Riverside.

PROJECT OVERVIEW

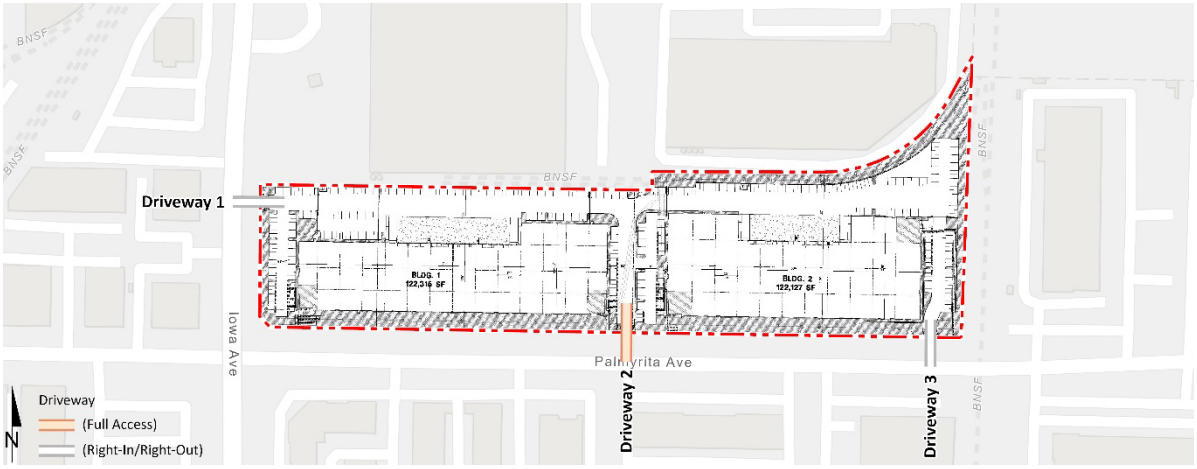
The Project will be evaluated assuming two potential land use scenarios:

- Scenario 1: 139,667 square feet for Building 1 and 126,091 square feet for Building 2 for a total of 265,758 square feet evaluated assuming 100% warehousing use (see Exhibit 1)
- Scenario 2: 119,315 square feet for Building 1 and 119,127 square feet for Building 2 for a total of 244,442 square feet evaluated assuming 177,331 square feet of warehousing and 61,111 square feet of manufacturing use (see Exhibit 2)

There is an existing underutilized warehouse use with some light manufacturing activity within an existing 99,165-square foot building.

EXHIBIT 1: PRELIMINARY SITE PLAN (SCENARIO 1)

EXHIBIT 2: PRELIMINARY SITE PLAN (SCENARIO 2)



BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, requiring 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). The City of Riverside City Council adopted analytical procedures, screening tools, and impact thresholds for VMT, which are documented in the City of Riverside Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (July 2020) (**City Guidelines**) (2). The VMT analysis presented in this report has been developed based on the adopted City Guidelines.

VMT SCREENING

The City Guidelines provide details on appropriate screening criteria that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed project level analysis. To aid in the project-level VMT screening process, the City of Riverside utilizes the Western Riverside Council of Governments (WRCOG) VMT Screening Tool (**Screening Tool**). The web-based Screening Tool allows a user to select an assessor's parcel number (APN) to determine if a project's physical location meets one or more of the land use screening thresholds documented in the City Guidelines. Screening criteria is categorized into three steps:

Step 1: Transit Priority Area (TPA) Screening

Step 2: Low VMT Area Screening

Step 3: Project Type Screening

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

TPA SCREENING

Consistent with guidance identified in the City Guidelines, 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:

- 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 to be located within a TPA (See Attachment A). However, the Project does not meet the secondary criteria required to qualify for TPA screening, such as having a FAR of greater than 0.75. The Project is contemplated with a FAR of 0.44 for both scenarios.

TPA screening criteria is not met.

LOW VMT AREA SCREENING

City Guidelines state that "Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident or per worker that is similar to the existing land uses in the low VMT area- provided the VMT of the area falls below thresholds."[3] The City uses the WRCOG screening tool to determine low areas of VMT. 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 is selected in the Screening Tool by parcel to determine project generated VMT as compared to the City's impact threshold. The parcel containing the proposed Project was

[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.").
[3] City Guidelines; Page 24

selected and the screening tool was run for the VMT per service employee measure of VMT based on the employment generating nature of the Project. The Project resides within TAZ 1999 and was found to generate 17.5 VMT per employee. This is greater than the City's impact threshold of 13.8 VMT per employee (calculated as 15% below baseline City of Riverside VMT). Accordingly, the Project does not reside within a Low VMT Area (See Attachment A).

Low VMT Area screening criteria is not met.

PROJECT TYPE SCREENING

The City Guidelines identify that local serving retail less than 50,000 square feet or other local serving essential services (e.g., local parks, day care centers, public schools, medical/dental office buildings, etc.) are presumed to have a less than significant impact absent substantial evidence to the contrary. The Project is not intending to develop any local serving retail or essential services.

In addition, the City Guidelines indicate that projects generating fewer than 110 daily vehicle trips may be presumed to have a less than significant impact, subject to discretionary approval by the City.

Project Trip Generation

Existing Traffic

There is an existing underutilized warehouse use with some light manufacturing activity within an existing 99,165-square foot building. In an effort to understand the existing traffic associated with the current uses, the trip generation rates used for this analysis are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation Manual (11th Edition, 2021) (3) for the proposed manufacturing use (ITE Land Use Code 140) and warehousing use (ITE Land Use Code 150) (see Table 1).

TABLE 1: TRIP GENERATION RATES

Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Manufacturing[3]	140	TSF	0.517	0.163	0.680	0.229	0.511	0.740	4.750
Passenger Cars			0.500	0.150	0.650	0.217	0.493	0.710	4.300
Trucks			0.017	0.013	0.030	0.012	0.018	0.030	0.450
Warehousing[3]	150	TSF	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
Trucks			0.011	0.009	0.020	0.016	0.014	0.030	0.600

[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 % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

The following summarizes the proposed land use and vehicle mix:

- Manufacturing – ITE land use code 140 has been used to derive site specific trip generation estimates for both the existing use and proposed Project. A manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research, and associated functions. The vehicle mix has been obtained from the ITE's latest Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.
- Warehousing – ITE Land Use Code 150 has been used to derive site specific trip generation estimates for both the existing use and proposed Project. A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has also been obtained from the ITE's latest Trip Generation Manual. The truck percentages were further broken down by axle type per the following South Coast Air Quality Management District (SCAQMD) recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

The trip generation summary illustrating daily, and peak hour trip generation estimates for the existing use in actual vehicles are shown on Table 2. As shown in Table 2, the existing use generates a total of 474 daily vehicle trips.

TABLE 2: EXISTING TRIP GENERATION

			AM Peak Hour			PM Peak Hour			
Existing Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:									
Manufacturing	99.165	TSF							
Passenger Cars:			50	15	65	22	49	71	428
Total Trucks:			4	3	7	3	4	7	46
Total Trips (Actual Vehicles)			**54**	**18**	**72**	**25**	**53**	**78**	**474**

[1] TSF = thousand square feet

Proposed Project

The trip generation rates used for this analysis are based upon information collected by the ITE as provided in their Trip Generation Manual (11th Edition, 2021) are shown previously on Table 1.

Scenario 1:

The trip generation summary illustrating daily, and peak hour trip generation estimates for the proposed Project (Scenario 1) in actual vehicles are shown on Table 3 based on 265,758 square feet of warehousing use. As shown in Table 3, the proposed Project is anticipated to generate a total of 456 daily vehicle trips.

TABLE 3: PROJECT TRIP GENERATION SUMMARY (SCENARIO 1)

Project Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Warehouse	265.758	TSF							
Passenger Cars:			32	8	40	10	31	41	296
Total Trucks:			3	3	6	5	4	9	160
Total Trips (Actual Vehicles)			**35**	**11**	**46**	**15**	**35**	**50**	**456**

[1] TSF = thousand square feet

Scenario 2:

The trip generation summary illustrating daily, and peak hour trip generation estimates for the proposed Project (Scenario 2) in actual vehicles are shown on Table 4 based on 177,331 square feet of warehousing use and 61,111 square feet of manufacturing use. As shown in Table 4, the proposed Project is anticipated to generate a total of 598 daily vehicle trips.

TABLE 4: PROJECT TRIP GENERATION SUMMARY (SCENARIO 2)

Project Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Manufacturing	61.111	TSF							
Passenger Cars:			31	9	40	13	30	43	264
Total Trucks:			1	1	2	1	1	2	28
Warehouse	177.331	TSF							
Passenger Cars:			22	6	28	7	21	28	198
Total Trucks:			2	2	4	3	3	6	108
Total Trips (Actual Vehicles)			**56**	**18**	**74**	**24**	**55**	**79**	**598**

[1] TSF = thousand square feet

Trip Generation Comparison

Table 5 shows the trip generation comparison between the existing and proposed use for Scenario 1 and Table 6 shows the trip generation comparison for Scenario 2. The resulting net new trips are identified on Table 5 and Table 6 for each Project Scenario.

As shown on Table 5, the Project (Scenario 1) is anticipated to generate a net reduction of 18 daily vehicle trips.

TABLE 5: TRIP GENERATION COMPARISON (EXISTING VS. SCENARIO 1)

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Proposed Project							
Passenger Cars:	32	8	40	10	31	41	296
Total Truck Trips (Actual Vehicles):	3	3	6	5	4	9	160
Total Trips (Actual Vehicles)[1]	**35**	**11**	**46**	**15**	**35**	**50**	**456**
Existing Use							
Passenger Cars:	50	15	65	22	49	71	428
Total Truck Trips (Actual Vehicles):	4	3	7	3	4	7	46
Total Trips (Actual Vehicles)[1]	**54**	**18**	**72**	**25**	**53**	**78**	**474**
Variance							
Passenger Cars:	-18	-7	-25	-12	-18	-30	-132
Total Truck Trips (Actual Vehicles):	-1	0	-1	2	0	2	114
Total Trips (Actual Vehicles)[1]	**-19**	**-7**	**-26**	**-10**	**-18**	**-28**	**-18**

[1] Total Trips = Passenger Cars + Truck Trips.

As shown on Table 6, the Project (Scenario 2) is anticipated to generate 124 net new daily vehicle trips.

TABLE 6: TRIP GENERATION COMPARISON (EXISTING VS. SCENARIO 2)

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Proposed Project							
Passenger Cars:	53	15	68	20	51	71	462
Total Truck Trips (Actual Vehicles):	3	3	6	4	4	8	136
Total Trips (Actual Vehicles)[1]	**56**	**18**	**74**	**24**	**55**	**79**	**598**
Existing Use							
Passenger Cars:	50	15	65	22	49	71	428
Total Truck Trips (Actual Vehicles):	4	3	7	3	4	7	46
Total Trips (Actual Vehicles)[1]	**54**	**18**	**72**	**25**	**53**	**78**	**474**
Variance							
Passenger Cars:	3	0	3	-2	2	0	34
Total Truck Trips (Actual Vehicles):	-1	0	-1	1	0	1	90
Total Trips (Actual Vehicles)[1]	**2**	**0**	**2**	**-1**	**2**	**1**	**124**

[1] Total Trips = Passenger Cars + Truck Trips.

Scenario 1 results in a net reduction of 18 daily vehicle trips and does not exceed the 110 daily vehicle trip threshold, however, Scenario 2 is estimated to generate a net increase of 124 daily vehicle trips, which exceeds the 110 daily vehicle trip threshold.

Project Type screening criteria is met for only Scenario 1.

Based on a more detailed review of the applicable VMT screening methods, it was determined that the Project's Scenario 2 is not eligible for screening and therefore, VMT analysis should be performed for this scenario.

VMT ANALYSIS FOR SCENARIO 2

VMT MODELING

City Guidelines identify the Riverside County Model (**RIVCOM**), as the appropriate tool for conducting VMT analysis for land use projects in the City of Riverside. RIVCOM was released in June 2021 and is the most current 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 type. RIVCOM is also consistent with the model used to develop the City's VMT impact threshold listed by the City Guidelines. Therefore, the vehicle trips and average daily trip length for project-related vehicle trips are derived using RIVCOM.

VMT METRIC AND SIGNIFICANCE THRESHOLD

The City Guidelines state for industrial land use projects in the City of Riverside shall use the VMT metric of VMT per employee as the appropriate measure in a VMT analysis. The City Guidelines have identified following recommended threshold would result in a significant impact:

- For office and industrial projects: the baseline or cumulative project-generated VMT per employee exceeds 15% below the current jurisdictional baseline VMT per employee

To establish the City of Riverside's baseline VMT per employee "no project" model runs will be performed and calculated utilizing RIVCOM to provide a consistent comparison. All TAZs located within the City of Riverside were selected and the home-based work (HBW) VMT was calculated from the RIVCOM base year (2018) and cumulative year (2045) traffic models. To obtain baseline (2022) conditions a straight-line interpolation calculation of the base year and cumulative year model results were then calculated. For ease of comparison, the HBW VMT for the City of Riverside was then divided by the City's employment. Citywide VMT per employee for base year, cumulative year, and baseline 2022 traffic conditions are shown in Table 1. The baseline citywide average VMT per employee is 32.15 and 15% below the citywide average is **27.33 VMT per employee**.

TABLE 7: CITY OF RIVERSIDE VMT PER EMPLOYEE

	Base Year	Cumulative Year	Baseline
Citywide Average HBW VMT	4,841,723	6,051,163	5,020,899
Citywide Employees	150,086	191,799	156,266
Citywide VMT per Employee	32.26	31.55	32.15

PROJECT LAND USE CONVERSION

In order to evaluate Project 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 for the purposes of vehicle trip estimation. Table 8 summarizes the employment density factor for the Project based on information contained in the County of Riverside General Plan Appendix E-2 (4) to estimate the number of Project employees by land use type used to populate the RIVCOM model.

TABLE 8: EMPLOYMENT ESTIMATES

	Project Scenario 2
Quantity	244,442 SF
Employment Factor	1,030 SF per Employee
Employees	236

The RIVCOM model was then run inclusive of the Project's SED inputs.

PROJECT GENERATED VMT PER EMPLOYEE CALCULATION

RIVCOM was utilized to calculate project generated VMT for the industrial land uses and that value was then divided by the Project's employment estimate to derive project generated VMT per employee. Project-generated VMT per employee was then calculated for both the base year model (2018) and cumulative year model (2045). Then straight-line linear interpolation was used to determine the Project's baseline (2022) VMT per employee. Table 9 presents HBW VMT as calculated from RIVCOM for the Project's industrial land uses, the number of Project employees, and Project VMT per employee.

TABLE 9: PROJECT GENERATED VMT PER EMPLOYEE

	Base Year	Cumulative Year	Baseline
Project HBW VMT	6,109	6,340	6,143
Project Employees	236	236	156,266
Project VMT per Employee	25.88	26.86	26.03

PROJECT COMPARISON TO SIGNIFICANCE THRESHOLD

Table 10 illustrates the comparison between Project generated VMT per employee in the Baseline and Cumulative Conditions to the baseline City of Riverside jurisdictional average, as previously noted, of 32.15 VMT per employee, a 15% below the jurisdictional average is 27.33 VMT per employee. As shown, the Project would not exceed the City's threshold for either the Baseline or Cumulative Project conditions. The Project VMT impact is therefore considered less than significant.

TABLE 4: PROJECT VMT PER EMPLOYEE COMPARISON

	Baseline	Cumulative
Impact Threshold	27.33	27.33
Project VMT per SP	26.03	26.86
Percent Below Threshold	-4.76%	-1.72%
Potentially Significant?	No	No

PROJECT CUMULATIVE IMPACT ON VMT

The Technical Advisory notes that "… metrics such as VMT per capita or VMT per employee, i.e., metrics framed in terms of efficiency…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, City Guidelines state "…cumulative no project shall reflect the adopted RTP/SCS; as such, if a project is consistent with the regional RTP/SCS, the cumulative impacts shall be considered less than significant subject to consideration of other substantial evidence."[4] Since the Project proposed industrial land use is consistent with the City of Riverside's General Plan and the project level VMT per employee was found to be less than significant. Resulting in the Project's cumulative VMT impact is also to be considered less than significant.

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 City Guidelines.
- The Project's Scenario 1 was found to meet the Project Type screening criteria and is presumed to be less than significant; no further analysis required for Scenario 1.
- The Project's Scenario 2 was not found to meet any available screening criteria, and a model based VMT impact analysis was therefore performed.
- The Project's Scenario 2 VMT impact analysis substantiates that Project VMT is below the City's VMT per employee threshold by 4.76% in baseline conditions and 1.72% in cumulative conditions. The Projects Scenario 2 is therefore determined to have a less than significant VMT impact.

[4] City Guidelines; Page 28

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

Respectfully submitted,

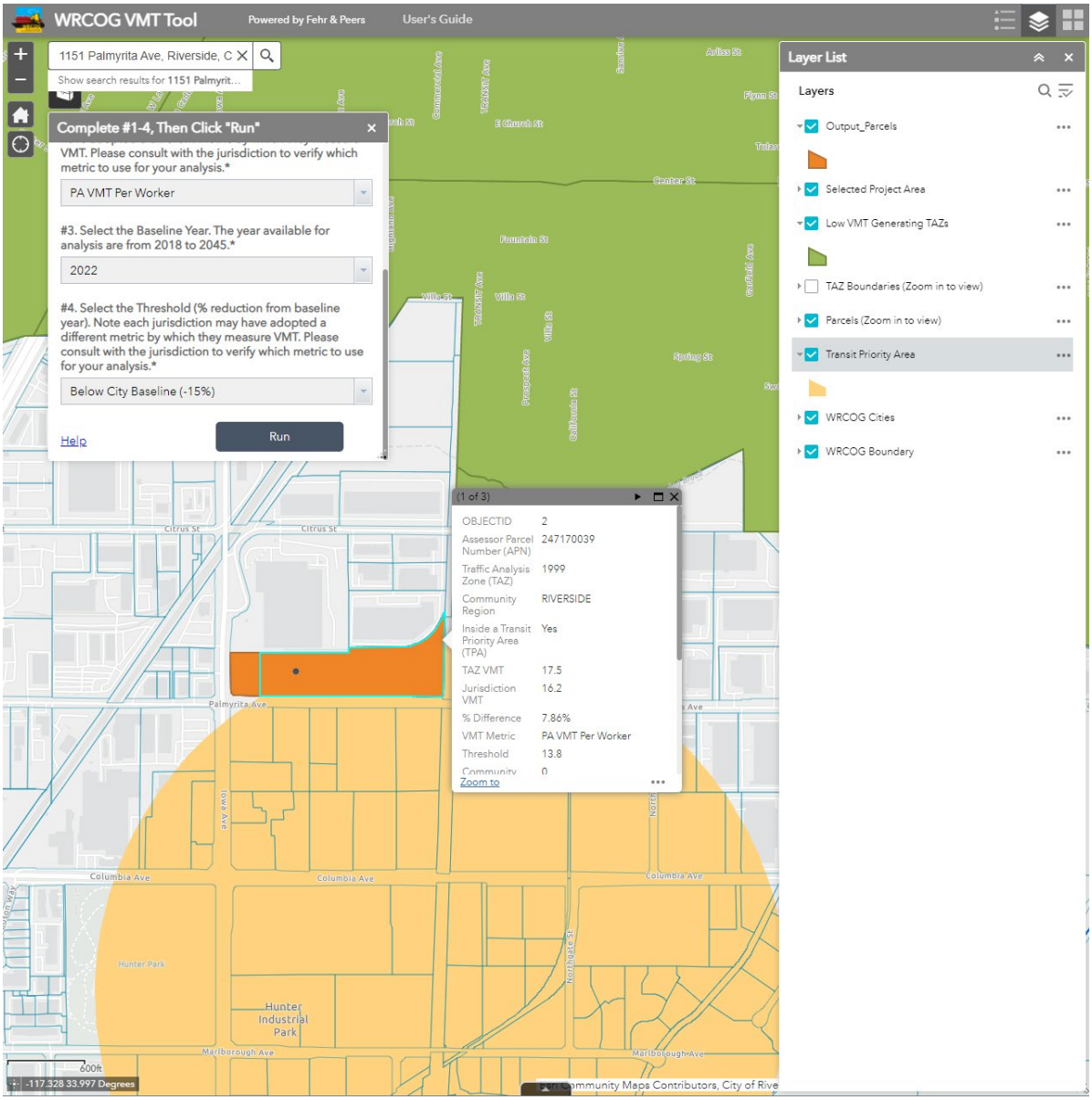
URBAN CROSSROADS, INC.

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 Riverside Public Works Department.** *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment.* City of Riverside : s.n., July 2020.
3. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
4. **County of Riverside.** *Appendix E: Socioeconomic Build-Out Assumptions and Methodology.* County of Riverside : s.n., April 2017.

ATTACHMENT A
WRCOG SCREENING TOOL


WRCOG VMT Tool
Powered by Fehr & Peers
User's Guide
1151 Palmyrita Ave, Riverside, C
Show search results for 1151 Palmyrit...
Complete #1-4, Then Click "Run"
VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
PA VMT Per Worker
#3. Select the Baseline Year. The year available for analysis are from 2018 to 2045.*
2022
#4. Select the Threshold (% reduction from baseline year). Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
Below City Baseline (-15%)
Help
Run
Layer List
Layers
Output_Parcels
Selected Project Area
Low VMT Generating TAZs
TAZ Boundaries (Zoom in to view)
Parcels (Zoom in to view)
Transit Priority Area
WRCOG Cities
WRCOG Boundary
(1 of 3)
OBJECTID 2
Assessor Parcel Number (APN) 247170039
Traffic Analysis Zone (TAZ) 1999
Community Region RIVERSIDE
Inside a Transit Priority Area (TPA) Yes
TAZ VMT 17.5
Jurisdiction VMT 16.2
% Difference 7.86%
VMT Metric PA VMT Per Worker
Threshold 13.8
Community 0
Zoom to
Citrus St
Palmyrita Ave
Columbia Ave
Hunter Park
Hunter Industrial Park
Marlborough Ave
600ft
-117.328 33.997 Degrees

ATTACHEMENT B
RIVCOM VMT OUTPUT DATA

TABLE 1: 2018 RIVCOM OUTPUT

TAZ	1999
Daily_Home-Based (incl. IEHB) Prod VMT	0
Daily_HBW (incl. EIHBW) Attr VMT	80382.53906
Daily_Total Auto OD From VMT	53289.85938
Daily_Total Auto OD To VMT	57259.30078
Daily_Total Auto OD Intra VMT	33.118717
Daily_Total Truck OD From VMT	7073.716797
Daily_Total Truck OD To VMT	7112.036133
Daily_Total Truck OD Intra VMT	4.48562
Daily_Total OD From VMT	60363.57813
Daily_Total OD To VMT	64371.33594
Daily_Total OD Intra VMT	37.604336
Daily_Total_TripLen	18.059578
Population	0
Employment	2454
Enrollment	0

TABLE 2: 2045 RIVCOM OUTPUT

TAZ	1999
Daily_Home-Based (incl. IEHB) Prod VMT	0
Daily_HBW (incl. EIHBW) Attr VMT	89561.69531
Daily_Total Auto OD From VMT	59323.25781
Daily_Total Auto OD To VMT	63439.72656
Daily_Total Auto OD Intra VMT	42.603203
Daily_Total Truck OD From VMT	6265.550781
Daily_Total Truck OD To VMT	6281.273926
Daily_Total Truck OD Intra VMT	4.729783
Daily_Total OD From VMT	65588.8125
Daily_Total OD To VMT	69721
Daily_Total OD Intra VMT	47.332985
Daily_Total_TripLen	18.314655
Population	0
Employment	2803
Enrollment	0