

**DATE:** January 12, 2023  
**TO:** Matt Maehara, TTLC Riverside Chicago, LLC  
**FROM:** Alex So, Urban Crossroads, Inc.  
**JOB NO:** 14577-01 VMT

## **ARROYO VISTA VEHICLE MILES TRAVELED (VMT) ANALYSIS**

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for the Arroyo Vista (**Project**), which is located on the northwest corner of Chicago Avenue and Iris Avenue in the County of Riverside.

### **PROJECT OVERVIEW**

It is our understanding that the proposed Project is 233 single family detached residential dwelling units. A preliminary site plan for the proposed Project is shown on Attachment A.

### **BACKGROUND**

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020, consistent with Senate Bill 743 (SB 743). To comply with SB 743 the County of Riverside adopted their Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled (December 2020) (**County Guidelines**) (1). The adopted County Guidelines have been utilized to prepare this VMT analysis.

### **PROJECT LEVEL SCREENING**

County Guidelines states that a project may be determined to have a less than significant impact and screen from the need to prepare a project level VMT analysis if it meets one or more eligible screening criteria. The County's adopted VMT screening criteria are described in Table 1 along with a determination of each screening criteria's applicability to the Project.

**TABLE 1: SCREENING FOR LAND USE PROJECTS EXEMPT FROM VMT CALCULATIONS**

Screening Criteria	Description	Result
Small Projects Screening	Projects that generate fewer than 110 daily vehicle trips or projects that are below 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO <sub>2</sub> e) per year.	Does not meet.
High Quality Transit Areas (HQTAs) Screening	High quality transit provides a viable option for many to replace automobile trips with transit trips resulting in an overall reduction in VMT.	Does not meet.
Local Serving Retail	The introduction of new Local serving retail has been determined to reduce VMT by shortening trips that will occur.	Does not meet.
Affordable Housing	Lower-income residents make fewer trips on average, resulting in lower VMT overall.	Does not meet.
Local Essential Service	As with Local-Serving Retail, the introduction of new Local Essential Services shortens non-discretionary trips by putting those goods and services closer to residents, resulting in an overall reduction in VMT.	Does not meet.
Map-Based Screening	This method eliminates the need for complex analyses, by allowing existing VMT data to serve as a basis for the screening smaller developments. Note that screening is limited to residential and office projects.	Does not meet.
Redevelopment Project	Projects with lower VMT than existing on-site uses, can under limited circumstances, be presumed to have a non-significant impact. In the event this screening does not apply, projects should be analyzed as though there is no existing uses on site (project analysis cannot take credit for existing VMT).	Does not meet.

As the Project was not found to meet any of the applicable screening criteria, consistent with the County Guidelines a project level VMT analysis should be prepared.

## VMT ANALYSIS

### VMT MODELING

The County Guidelines identifies the Riverside Transportation Analysis Model (**RIVTAM**) as the appropriate tool for conducting VMT analysis for land development projects in the County of Riverside. RIVTAM 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. RIVTAM is a travel forecasting model that represents a sub-area (Riverside County) of the Southern California Association of Governments (SCAG) regional traffic model. RIVTAM was designed to provide a greater level of detail and sensitivity in the Riverside County area as compared to the regional SCAG model.

**VMT METRIC AND SIGNIFICANCE THRESHOLD**

County Guidelines state residential land uses should be evaluated based on the efficiency metric VMT per capita<sup>1</sup> and utilize an impact threshold of **existing countywide average VMT per capita**. In other words, the Project would result in a significant VMT impact if Project generated VMT per capita exceeds the existing countywide average VMT per capita. For the County of Riverside, the countywide average VMT per capita is noted in the County Guidelines as **15.2 VMT per capita**<sup>2</sup>.

**PROJECT LAND USE CONVERSION**

To estimate Project generated VMT, land use information such as dwelling units must first be converted into a RIVTAM compatible dataset. The RIVTAM model utilizes socio-economic data (**SED**) (e.g., population and households) instead of land use information for the purposes of vehicle trip estimation. Table 2 summarizes the SED inputs used to reflect the proposed Project.

**TABLE 2: PROJECT LAND USE DATA INPUTS**

Land Use	Quantity	Conversion Factor	Estimated Population
Residential	233 DU	3.34 people per household <sup>3</sup>	778 population

Project SED information was then coded into a RIVTAM traffic analysis zone (TAZ) that would represent the Project. The RIVTAM model was then run inclusive of the Project’s SED inputs.

**PROJECT’S VMT CALCULATION AND COMPARISON TO IMPACT THRESHOLD**

As stated previously, for residential land uses the efficiency metric VMT per capita is used to evaluate Project VMT. VMT per capita is derived by dividing Project generated home-based (HB) VMT by the Project’s population. VMT is obtained from the RIVTAM model using the Production/Attraction (PA) method for calculating VMT, which sums all weekday VMT generated by trips with at least one trip end in the study area (i.e., Project’s TAZ). Productions are land use types that generate trips (residences) and attractions are land use types that attract trips (employment). To calculate VMT productions and attractions are converted from person trips to vehicle trips and are then multiplied by the distance skims. Table 3 presents Project generated PA HB VMT from the RIVTAM model, along with the Project’s population estimate and the resulting VMT per capita metric.

<sup>1</sup> County Guidelines; Figure 4; Page 21

<sup>2</sup> County Guidelines; Figure 6; Page 22

<sup>3</sup> Population Density Factor was obtained from the County of Riverside General Plan Appendix E-2: Socioeconomic Build-Out Assumptions and Methodology (see Table E-2, Average Household Size by Area Plan, Page 2, Lake Matthews/Woodcrest Planning Area).

**TABLE 3: PROJECT VMT PER CAPITA**

	Project
HB VMT	16,210
Population	778
Project VMT per Capita	20.8
County Threshold	15.2
Percent Above Threshold	30.8%
Potentially Significant?	Yes

As shown in Table 3, Project generated VMT per capita exceeds the County's impact threshold by 30.8%.

### VMT REDUCTION MEASURES

As noted by the County Guidelines, Transportation Demand Management (TDM) strategies have been evaluated for the purpose of reducing VMT impacts determined to be potentially significant through use of the California Air Pollution Control Officers Association (CAPCOA) [Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity](#) (CAPCOA, 2021) (**2021 Handbook**). For residential land use projects, the 2021 Handbook provides a list of Neighborhood Design measures that reduce VMT. However, the maximum achievable reduction for these measures as noted in the 2021 Handbook is limited to 10%<sup>4</sup>. Therefore, even with implementation of all feasible trip reduction measures listed below, the Project would be unable to reduce its VMT impact to below the impact threshold. The following design elements should be considered by the Project in an effort to reduce HB VMT to the extent feasible:

- Provide pedestrian and bicycle network improvements within the development connecting to existing off-site facilities.
- Collaborate with the Riverside Transit Authority (RTA) to determine the feasibility of providing new or re-route existing transit services to the site.
- Incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments.

It is also recognized that as the Project area and surrounding communities develop as envisioned under the County of Riverside's General Plan, new residential, retail, and other 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 TDM measures. There is no means currently, however, to quantify any VMT reductions that could result.

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<sup>4</sup> 2021 Handbook, Page XX

## CONCLUSION

- The Project was evaluated against the County's applicable VMT screening criteria and did not screen from the need to prepare a project level VMT analysis.
- A VMT analysis was performed consistent with the County Guidelines. The analysis found that Project generated VMT per capita would exceed the County's impact threshold 30.8%.
- Potential trip reduction strategies to reduce Project generated VMT were considered using CAPCOA's 2021 Handbook. Based on an examination of feasible mitigation measures the Project is unable to fully mitigate its VMT impact to a level of less than significant and is therefore considered to be significant and unavoidable.

If you have any questions, please contact me directly at [aso@urbanxroads.com](mailto:aso@urbanxroads.com).

## REFERENCES

1. **County of Riverside.** *Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled.*  
County of Riverside : s.n., December 2020.

**ATTACHEMENT A  
PRELIMINARY SITE PLAN**

