MEMORANDUM

URBAN CROSSROADS

DATE: December 16, 2022

TO: Brian Hardy, Richland

FROM: Alex So, Urban Crossroads

JOB NO: 13265-02 VMT

STONERIDGE COMMERCE CENTER SPECIFIC PLAN (SP NO. 239, A1) VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for the Stoneridge Commerce Center Specific Plan (SP NO. 239, A1) (**Project**), which is located west of Lakeview Avenue, between Ramona Expressway and Nuevo Road in the County of Riverside.

PROJECT OVERVIEW

The Riverside County Transportation Commission (RCTC) is currently planning the construction of a regional grade-separated transportation facility referred to as the Mid-County Parkway (MCP) between Interstate 215 Freeway (at Placentia Avenue) and State Route 79. The MCP is a long-range transportation improvement as RCTC has not yet identified or secured funding for full construction of the MCP and the future proposed interchanges. As such, timing of the MCP is currently unknown. Table 1 includes a land use summary table of the proposed Project land uses for a condition without the MCP (**Without MCP**).

Table 1: Without MCP Land Use Summary

PA	Land Use Designation	Acres	Maximum Building Square Footage
1	LI	37.8	715,135
2	LI	114	2,156,757
3	LI	195.2	3,692,973
4	LI	37.8	715,135
5	LI	3.7	70,000
6	BP	34.4	749,232
7	BP	14.7	320,166
8A	CR	6.8	103,673
8B	CR	1.2	18,295
9	OS-C	18.1	--
10	OS-CH	47	--
11	OS-CH	34.6	--
--	Circulation	37.3	--
	Total:	**582.6**	**8,541,366**

In summary, the Without MCP land use plan consists of the development of 7,350,000 square feet of Light Industrial uses, 1,069,398 square feet of Business Park uses, and 121,968 square feet of Commercial Retail uses.

A portion of the MCP and future interchange is planned in the northwestern portion of the site, which would affect the development proposed within Planning Areas 6, 7, and 8A of the proposed Project. In order to accommodate the potential for the future construction of the MCP while also providing for development of the site in the event that the MCP is not constructed as currently planned. Table 2 presents a land use summary of the proposed land uses with the construction of the MCP (**With MCP**).

Table 2: With MCP Land Use Summary

PA	Land Use Designation	Acres	Maximum Building Square Footage[1]
1	LI	37.8	715,135
2	LI	114	2,156,757
3	LI	195.2	3,692,973
4	LI	37.8	715,135
5	LI	3.7	70,000
6	BP	35.4	616,374
7	BP	16.1	320,166
8A	CR	7.4	109,771
8B	CR	1.1	16,771
9	OS-C	18.1	--
10	OS-CH	47	--
11	OS-CH	34.6	--
--	Circulation	34.4	--
	Totals:	**582.6**	**8,413,082**

In summary, the With MCP land use plan consists of the development of 7,350,000 square feet of Light Industrial uses, 936,540 square feet of Business Park uses, and 126,542 square feet of Commercial Retail uses.

Land use concept plans for each condition are presented in Attachment A.

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, 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 of 2020) (**County Guidelines**) (1). The adopted County Guidelines have been utilized to prepare this VMT analysis.

PROJECT LEVEL SCREENING

County's Guidelines state that a project may be determined to have a less than significant impact and screened out of requiring a project level VMT analysis if it meets at least one of the County's VMT screening criteria. The County's adopted VMT screening criteria are described in Table 3 along with a determination of each screening criteria's applicability to the Project.

TABLE 3: SCREENING FOR LAND USE PROJECTS EXEMPT FROM VMT ANALYSIS

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 ($MTCO_2e$) per year.	Does not meet.
High Quality Transit Areas (HQTA) 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[1].
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 of 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 was prepared.

[1] Although no formal development plan for the retail component is proposed at this time, the Project would allow up to 126,542 square feet in the With MCP condition and 121,968 square feet in the Without MCP condition of retail use. Once a retail development plan is available, the Retail building square footage should be re-evaluated for its applicability for the local serving retail screening criteria.

VMT ANALYSIS

MODELING METHODOLOGY

County Guidelines identifies the Riverside County Traffic Analysis Model (**RIVTAM)** as the County's preferred modeling tool for estimating VMT. 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 note the VMT metric and threshold of significance used for VMT analyses in the County of Riverside are based on land use type (i.e., residential, office, retail, etc.) and are broadly categorized as either efficiency or net change metrics. Efficiency metrics include Work VMT per employee or VMT per capita, while "net change" refers to the net change in regional VMT. The net change metrics are typically used for projects that include a significant customer base such as commercial retail land uses.

County Guidelines list the land use type Other Employment (i.e., not included in the basic office category) as the appropriate land use for industrial projects and is to utilize the efficiency metric Work VMT per employee[2]. The measure for VMT threshold listed in the County Guidelines is **existing countywide average VMT per employee** with the following significance threshold:

"A project would result in a significant project generated VMT impact if its VMT exceeds the existing county-wide average Work VMT per employee." For the County of Riverside, the countywide average Work VMT per employee is **14.2 Work VMT per employee**[3]**.**

The Project's retail land use component should be evaluated based on the regional net change metric and utilize an impact threshold of **net regional increase in Total VMT**. For the purposes of this analysis, the region will include two analysis conditions, a 10-mile boundary from the Project site and a countywide boundary.

PROJECT LAND USE CONVERSION

To estimate Project generated VMT, land use information such as building square footage must first be converted into a RIVTAM compatible dataset. The RIVTAM model utilizes socio-economic data (**SED**) (e.g., population, households and employment) instead of land use information for the purposes of vehicle trip estimation. Project employees are estimated by dividing the total building square footage by the appropriate employment factor outlined in the County of Riverside's General Plan Appendix E-2. Table 4 summarizes the estimated number of employees for each condition used to represent the proposed Project in RIVTAM.

[2] County Guidelines; Figure 4; Page 21
[3] County Guidelines; Figure 6; Page 22

TABLE 4: EMPLOYMENT DENSITY FACTORS

	With MCP	Without MCP
Industrial Employees	7,136	7,136
Business Park Employees	1,561	1,782
Total Non-Retail Employees	**8,697**	**8,918**
Retail Employees	253	244

Project employment information was then coded into traffic analysis zone (TAZ) to represent the Project. The RIVTAM model was then run inclusive of the Project's employment for both With MCP and Without MCP conditions.

PROJECT'S VMT CALCULATION AND COMPARISON TO IMPACT THRESHOLD

INDUSTRIAL

As stated previously, for industrial land uses the efficiency metric Work VMT per employee is used to evaluate potential impacts to VMT. Work VMT per employee is derived by dividing Project generated home-based work (**HBW**) VMT by the number of estimated Project employees. HBW VMT (**Work VMT**) is obtained from the RIVTAM model using the Production/Attraction 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). Productions and attractions are converted from person trips to vehicle trips for the purposes of calculating VMT and are then multiplied by the distance skims to calculate VMT. Table 5 presents Project generated Work VMT from the RIVTAM model, along with the estimated number of Project employees, and the resulting Work VMT per employee for With MCP and Without MCP conditions.

TABLE 5: PROJECT WORK VMT PER EMPLOYEE

	With MCP	Without MCP
Work VMT	155,295	159,467
Total Non-Retail Employees	8,697	8,918
Work VMT per Employee	17.9	17.9
County Threshold	14.2	14.2
Percent Above Threshold	+26.1%	+26.1%
Potentially Significant?	Yes	Yes

As shown in Table 5, Project generated HBW VMT per employee exceeds the County's adopted threshold by 26.1% for both the With MCP and Without MCP conditions.

RETAIL

Retail land use projects should contain an evaluation of regional net change in VMT using an impact threshold net increase in regional total VMT, which can be performed using the boundary method of calculating VMT. The boundary method is the sum of all weekday VMT on the roadway network within a designated boundary (i.e., County boundary or other designated geographic

area[4]). The boundary method estimates VMT by multiplying vehicle trips on each roadway segment within the boundary by that segment's length. This approach consists of all trips, including those trips that do not begin or end in the designated boundary. Consistent with County Guidelines, the County of Riverside was used as the boundary for this assessment.

In addition, a 10-mile boundary area surrounding the Project TAZ was also conducted for informational purposes. The additional 10-mile boundary scenario is provided as the County boundary may be too expansive or limiting to measure the net change in VMT for a project of this size without model noise (i.e., convergence criteria), which may influence the results and to capture any trips that may be otherwise truncated by the Riverside County boundary, particularly to the west, where the 10 mile radius extends beyond the County boundary[5]. A more expansive boundary would be contrary to industry standards, and likely result in inaccurate results.

Table 6 presents total VMT calculated using the boundary method for both With MCP and Without MCP conditions. As shown in Table 6, total VMT is found to increase by less than 0.2% under most conditions, with the exception of the Without MCP condition using the County's boundary where VMT is estimated to decrease.

TABLE 6: RETAIL TOTAL VMT SUMMARY

	Countywide Boundary With MCP	Countywide Boundary Without MCP	10-Mile Boundary With MCP	10-Mile Boundary Without MCP
Without Retail VMT	53,704,064	53,785,329	5,432,569	5,447,988
With Retail VMT	53,730,862	53,776,617	5,443,257	5,455,244
Net Change in VMT	**26,798**	**-8,712.93**	**10,687**	**7,256**

CUMULATIVE ANALYSIS

County Guidelines require that additional VMT estimates should be calculated for informational purposes and not to be used as the basis for the determination of a significant VMT impact, Specific Plans and Community Plans are required to complete a Cumulative analysis irrespective of the findings of the project generated VMT analysis.[6] The Cumulative analysis can be accomplished using the boundary method as previously described for the retail component, but inclusive of the entire Project (i.e., retail and industrial component) in the base year and cumulative year conditions.

Table 7 presents total VMT calculated using the boundary method for both the No Project and With Project conditions for Baseline and Cumulative years. Total VMT is found to increase under the With Project scenario for both the Countywide and 10-mile boundary conditions; and for both the With MCP and Without MCP conditions. Again, the additional 10-mile boundary scenario is

[4] County Guidelines; Page 22, Figure 6
[5] California Office of Planning and Research (OPR) Technical Advisory; Page 6: "Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary."
[6] County Guidelines; Page 33

provided as the County boundary may be too expansive or limiting to measure the net change in VMT for a project of this size without model noise (i.e., convergence criteria), which may influence the results with inaccurate data, and to capture any trips that may be otherwise truncated by the Riverside County boundary, particularly to the north, where the 10 mile radius extends beyond the County boundary[7]. A more expansive boundary would be contrary to industry standards, and likely result in inaccurate results.

TABLE 7: CUMULATIVE VMT SUMMARY

	County Boundary With MCP	County Boundary Without MCP	10-Mile Boundary With MCP	10-Mile Boundary Without MCP
Baseline No Project VMT	53,661,883		5,349,826	
Baseline With Project VMT	53,730,862	53,776,617	5,443,257	5,455,244
Cumulative No Project VMT	92,508,071		9,827,366	
Cumulative With Project VMT	92,744,584	92,748,054	9,953,861	9,954,934

VMT REDUCTION

Potential commute trip reduction measures have been considered for the purposes of reducing Project related Work VMT impacts (i.e., commute trips) determined to be potentially significant. As future tenants are not known for the Project, the effectiveness of potential commute trip reduction measures may be limited. The Project can however consider the following measures that have the potential to reduce commute VMT, although no quantified benefit can be taken at this time. Potential commute trip reduction measures are as follows:

- Future building tenants could implement a Voluntary Commute Trip Reduction (CTR) program. The purpose of the CTR program would be to encourage alternative modes of transportation such as carpooling, which would help to reduce commute VMT. Such a program would likely include on-site and/or online commute information services such as available transit and ride coordination for employees.
- Future building design features could provide designated carpool/vanpool parking in desirable locations to encourage employees to carpool/vanpool to work that can lead to reduced commute VMT depending on the level of participation by tenants.
- Future building designs could include end-of-trip facilities such as bicycle parking, lockers, etc, which could encourage employees to use alternative modes of transportation and thus reduce VMT.
- Future building designs could include on-site electric vehicle charging stations beyond what is required by the 2019 California Green Building Code Standards (CALGreen) at designated parking areas. Although this measure would not directly reduce VMT, it would reduce greenhouse gas (GHG) emissions.
- Future building designs could include sidewalks along Project frontage providing connections to existing trails and external pedestrian networks in order to improve

[7] California Office of Planning and Research (OPR) Technical Advisory; Page 6: "Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary."

pedestrian access. This measure could encourage employees to walk to nearby destinations and thus reduce VMT.

SUMMARY

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

- The Project was evaluated against screening criteria as outlined in the County Guidelines. The Project was not found to meet any available screening criteria, and a VMT analysis was performed.
- The Project's VMT analysis found the industrial component of Project to exceed the County's Work VMT per employee impact threshold by 26.1% in both the With MCP and Without MCP conditions and is determined to have a potentially significant transportation impact.
- Although no formal development plan for the retail component is proposed at this time, the Project would allow up to 126,542 square feet in the With MCP condition and 121,968 square feet in the Without MCP condition of retail use. Once a retail development plan is available, the retail building square footage should be re-evaluated for its applicability for the local serving retail screening criteria. Local-serving retail under 50,000 square feet per store, adopted County Guidelines is presumed to not have a significant impact.
- The Project's retail component was conservatively evaluated to include the maximum allowable square footage for each analysis scenario and was found to contribute up to 0.2% net increase in regional VMT, which exceeds the County's impact threshold.
- As future tenants of the Project are unknown at this time, the effectiveness of commute trip reduction measures such as those listed above cannot be guaranteed to reduce Project VMT to a level of less than significant. Therefore, the Project's VMT impact is considered significant and unavoidable.

If you have any questions, please contact me directly at 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.

ATTACHMENT A
PRELIMINARY LAND USE PLAN

EXHIBIT A-1: LAND USE MAP WITHOUT MCP

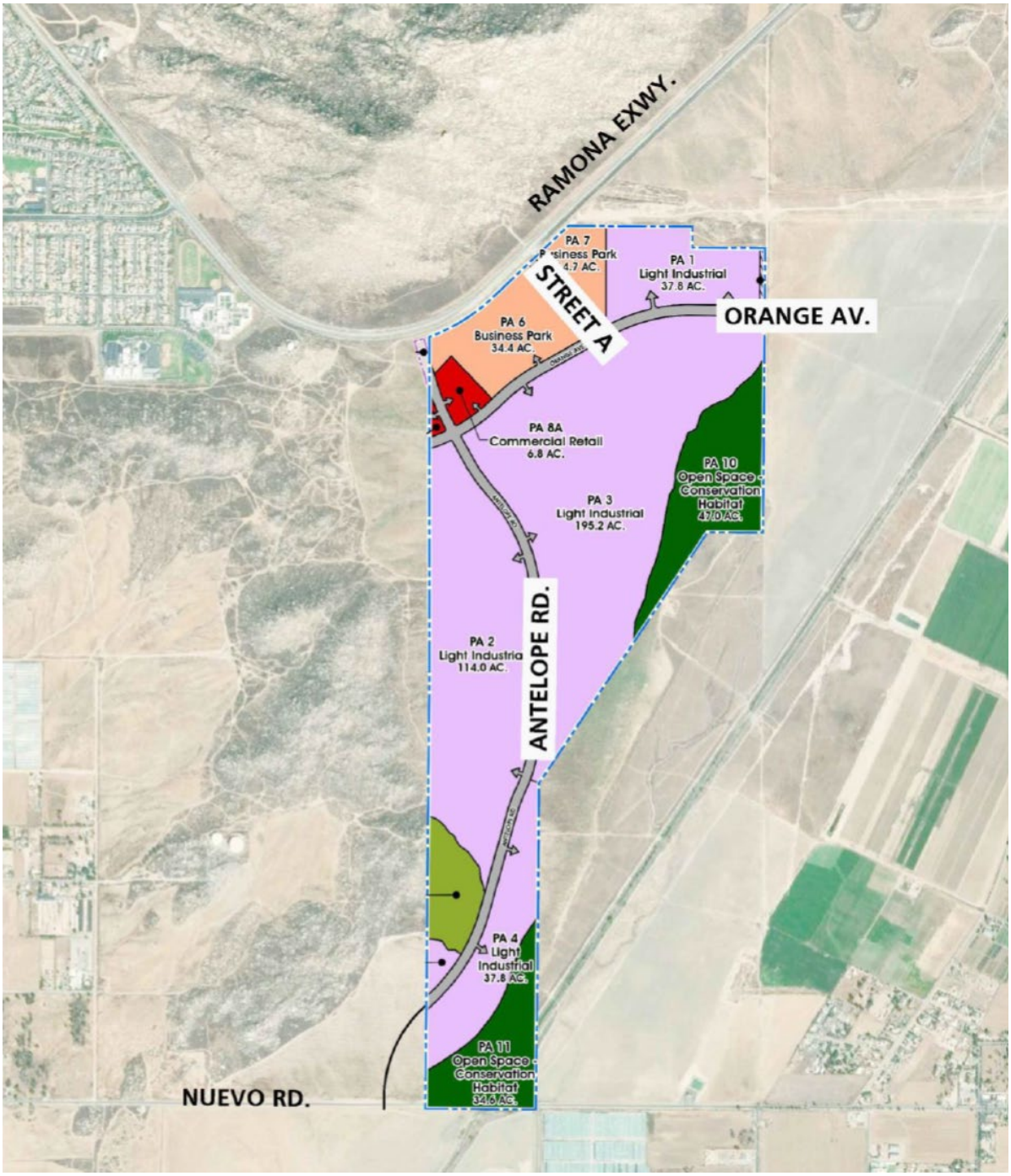

EXHIBIT A-2: LAND USE MAP WITH MCP