



MEMORANDUM

DATE: March 12, 2021
To: Mr. Nathan Mustafa, Deputy Public Works Director, City of Riverside
FROM: Ambarish Mukherjee, P.E., AICP
SUBJECT: TTM37731 Cole Development Project Vehicle Miles Traveled Analysis

LSA is under contract to prepare a Vehicle Miles Traveled (VMT) analysis for the proposed TTM37731 Cole Development Project (project), to be located at the southwest corner of Cole Avenue and Lurin Avenue in the City of Riverside (City). The proposed development will have 138 single-family homes on an approximately 35.80 acre site. The project site is designated as Low Density Residential (LDR) in the City's General Plan and is zoned as Orangecrest Specific Plan (OSP).

As part of the project, LSA has prepared this VMT analysis.

BACKGROUND

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

The City adopted its new VMT analysis guidelines in July 2020. Therefore, for purposes of this analysis, the City's *DRAFT Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment* (dated July 2020) has been used.

As per the City's VMT analysis guidelines, the project VMT per capita has been compared with the jurisdictional VMT per capita to determine VMT impacts. Following is a detailed description of the VMT analysis.

METHODOLOGY

The Governor's Office of Planning and Research (OPR) Technical Advisory (TA) states that existing VMT for residential projects may be measured at the regional or City level. In the City's VMT analysis guidelines, the City has been considered as the region.

As per the City's VMT analysis guidelines, for residential projects, the threshold for determining VMT impacts is 15 percent below the City's current baseline VMT per capita. The project VMT per capita under both baseline (2012) and cumulative (2040) conditions have been compared with the

corresponding VMT per capita for the City to determine whether the project will have a significant VMT impact.

The Riverside County Transportation Analysis Model (RIVTAM) has been used to estimate both jurisdictional and project VMT. RIVTAM socioeconomic database for both baseline (2012) and cumulative (2040) scenario were updated with the project land use to calculate project VMT. Jurisdictional and project VMT were calculated from the RIVTAM model runs as described below:

Project Traffic Analysis Zone Update

The first step in preparation of this analysis was to update the traffic analysis zones (TAZs) in the model that includes the project area. LSA converted the project land use into model socioeconomic categories and RIVTAM socioeconomic database for both baseline (2012) and cumulative (2040) scenarios were updated with the project socioeconomic data. One additional zone was added to the model and updated with the socioeconomic data developed for the proposed project land use. The new TAZ was utilized to calculate project specific VMT per capita.

VMT ANALYSIS

The baseline (2012) conditions VMT per capita was obtained from the Western Riverside Council of Governments (WRCOG) Screening Tool. The cumulative (2040) no project VMT per capita was obtained from the RIVTAM “no project” model run. The project VMT per capita under both baseline (2012) and cumulative (2040) conditions were compared to the respective City VMT per capita. Table A shows the VMT per capita estimates. As shown in Table A, the project’s VMT per capita exceeds the City’s VMT per capita by 76 percent and 60 percent under baseline and cumulative conditions, respectively. Therefore, based on the City’s VMT analysis guidelines, the project will have a significant VMT impact under both baseline and cumulative conditions.

Table A: Baseline (2012) and Cumulative (2040) Jurisdictional and Project VMT per Capita Comparison

Analysis Scenario	City of Riverside	Project	Percentage Change
Baseline	10.8	19.0	+76%
Cumulative	10.6	17.0	+60%

Source: Riverside Transportation Analysis Model
 VMT = Vehicle Miles Traveled

MITIGATIONS

When a lead agency identifies a significant CEQA impact, the agency must identify feasible mitigation measures in order to avoid or substantially reduce that impact. VMT impacts will require mitigation of regional impacts through more behavioral changes. Enforcement of mitigation measures will be subject to the mitigation monitoring requirements of CEQA, as well as the regular police powers of the agency. These measures can also be incorporated as part of plans, policies, regulations, or project design features. In general, transportation demand management (TDM) actions, active transportation amenities, and other measures to reduce the number of trips creating

an impact are possible VMT mitigation strategies. However, for this project, LSA recommends the following mitigation strategy, based on discussion with City staff.

LSA compared the City’s baseline and future VMT per capita from RIVTAM. From the comparison, it was determined that the City’s future VMT per capita will be lower compared to the baseline VMT per capita. Lower VMT per capita for the City in the forecast scenario is possible due to multiple factors such as improvements in land use densities, mix of land uses, and non-drive alone mode shares. The City’s investment in active transportation projects is one of the contributors towards the decrease in the City’s drive alone mode share and thus, decrease in the VMT per capita metric. Since the project is consistent with the City’s General Plan, the project’s fair share contribution towards these active transportation improvements can be considered as an appropriate VMT mitigation measure.

At present, the City does not have a mitigation bank where all the General Plan improvements are researched and documented. However, City staff provided a list of bicycle and pedestrian improvements included in the City’s Active Transportation Master Plan. LSA calculated the total cost of these improvements and determined the project’s fair share contribution towards the improvements. It is to be noted that some of these improvements are fully or partially covered through the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program. Therefore, the TUMF contributions have been subtracted to determine the net cost for these improvements. Proposed bicycle and pedestrian improvements along with the TUMF funding and non-TUMF costs for the improvements are summarized in Appendix A.

Based on discussion with City staff, LSA understands that the City wants to conduct a mitigation fee study to identify costs to implement active transportation projects to reduce greenhouse gas emissions and provide alternate mode choices. The cost of preparing a mitigation bank study for a jurisdiction the size of the City of Riverside would generally be between \$250,000 and \$350,000. Therefore, a cost of \$300,000 was added to the above identified costs. The combined cost is summarized in Table B.

Table B: Overall Cost Summary

Type	Total Project Cost	TUMF Funding	Non-TUMF Cost
Bicycle Projects	\$70,199,302.61	\$13,578,878.58	\$56,620,424.03
Pedestrian Projects	\$4,887,000.00	\$223,500.00	\$4,663,500.00
Mitigation Bank Study	\$300,000.00	\$0.00	\$300,000.00
Total	\$75,386,302.61	\$13,802,378.58	\$61,583,924.03

It should be noted that a fee program generally includes other funding sources such as Systemic Safety Analysis Report Program (SSARP) funds, Active Transportation Plan (ATP) grants, various federal and state funds, etc. Additionally, some of the improvements listed in the fee program might be considered as frontage improvements, which are generally constructed by development projects adjoining the roadways as conditions of approval. Such improvements would be excluded from the ultimate fee program and not attributed to new development in the fee program. For the purpose

of this evaluation, these credits have not been taken into consideration to present a worst case analysis, and the project’s fair share contribution is likely to be lower than the fair shares identified in this evaluation.

The project’s fair share has been calculated based on project VMT as a percentage of total VMT growth in the City from baseline to future conditions. Both the project VMT as well as the City VMT growth have been calculated from RIVTAM as link-level VMT within the City boundary. For the project VMT, select zone model runs have been used to estimate VMT within the City boundary. As shown in Table C, the total roadway VMT growth within the City from baseline to future conditions is 2,998,673, out of which the project’s contribution is 5,913. Therefore, as shown in Table C, the project’s fair share is 0.20 percent, while its fair share contribution towards the proposed improvements, including the preparation of the mitigation bank study, is \$121,435.63.

Table C: Project Fair Share Summary

Year	Roadway VMT within the City of Riverside
2012	5,648,838
2040	8,647,511
Total VMT Growth	2,998,673
Project VMT	5,913
Project Fair Share	0.20%
Total Cost	\$61,583,924.03
Project Fair Share Cost	\$121,435.63

As stated earlier, the City is likely to pursue and get additional funds towards these improvements and in the ultimate fee program scenario, the total cost of improvements and hence, the fair share are likely to be lower than what is presented in this Memo. Therefore, the calculated fair share cost is a conservative estimate. The City will inform the project applicant of the actual fair share cost prior to the project paying its fees. The project will be paying the required fees latest by the date of issuance of the first building permit.

The City currently has approximately \$60,000 for the purpose of the mitigation bank study. Since the City’s ability to construct active transportation improvements are directly dependent on collection of funds, which are in turn dependent on an adopted fee program, the City prefers to fast track the mitigation bank/fee program study. If funds are made available for the mitigation bank/fee program study, the City will be able to collect funds, and hence construct these improvements sooner, reduce Citywide VMT sooner, and reach its goals sooner. The project’s fair share payment will help to partially offset the cost of the mitigation bank/fee program study.

CONCLUSION

The project’s VMT per capita exceeds the City’s VMT per capita by 76 percent and 60 percent under baseline and cumulative conditions, respectively. Therefore, as per the City’s VMT analysis guidelines, the project will have a significant VMT impact under both baseline and cumulative conditions.

The City's future VMT per capita will be lower compared to the baseline VMT per capita. Since the project is consistent with the City's General Plan, the project's fair share contribution towards various active transportation improvements can be considered as an appropriate VMT mitigation measure. LSA determined the project's fair share as 0.20 percent.

At present, the City does not have a mitigation bank where all the General Plan improvements are researched and documented. However, City staff provided a list of bicycle and pedestrian improvements included in the City's Active Transportation Master Plan. Additionally, the City is planning to conduct a mitigation fee study to identify costs to implement active transportation programs to reduce greenhouse gas emissions and provide alternate mode choices. The project will make a fair share contribution of \$121,435.63 towards the proposed improvements. The project's fair share payment will help to partially offset the cost of the mitigation bank/fee program study.

ATTACHMENTS

Appendix A: Bicycle and Pedestrian Projects Funding Summary

APPENDIX A

**BICYCLE AND PEDESTRIAN PROJECTS
FUNDING SUMMARY**

Appendix A1 - Bicycle Projects Funding Summary

Roadway	Segment		Recommended Facility	Length (Miles)	Implementation Category	Total Project Cost	TUMF Funding	Non-TUMF Cost
	From	To						
14th Street	Chicago Avenue	Brockton Avenue	II	1.68	Short Term	\$3,885,000.38	\$0.00	\$3,885,000.38
Adams Street	Lincoln Street	California Street	II	1.56	Long Term	\$602,837.25	\$0.00	\$602,837.25
Arlington Avenue	Indiana Avenue	Magnolia Avenue	II	0.51	Short Term	\$1,174,689.43	\$845,776.39	\$328,913.04
Brockton Avenue	Magnolia Avenue	Beatty Drive	II	0.16	Short Term	\$62,605.38	\$0.00	\$62,605.38
Chicago Avenue	W Linden Street	Spruce Street	IIB	0.75	Opportunity	\$290,250.00	\$0.00	\$290,250.00
Colorado Avenue	Van Buren Boulevard	Monticello Avenue	II	0.33	Long Term	\$759,998.60	\$0.00	\$759,998.60
Cypress Avenue	Golden Avenue	Van Buren Boulevard	II	2.80	Long Term	\$2,859,105.90	\$0.00	\$2,859,105.90
Dufferin Avenue	Van Buren Boulevard	Jefferson Street	IIIB	2.02	Short Term	\$4,672,260.00	\$0.00	\$4,672,260.00
Gramercy Place	Tyler Street	Rutland Avenue	IIIB	0.61	Short Term	\$1,399,718.89	\$0.00	\$1,399,718.89
Gramercy Place	Golden Avenue	Tyler Street	II	1.37	Long Term	\$1,394,675.58	\$0.00	\$1,394,675.58
Hole Avenue	Wells Avenue	Tyler Street	IIB	1.35	Short Term	\$2,022,849.00	\$0.00	\$2,022,849.00
Hole Avenue	Tyler Street	Magnolia Avenue	II	0.37	Short Term	\$864,065.10	\$0.00	\$864,065.10
Iowa Avenue	University Avenue	Columbia Avenue	IIB	1.76	Long Term	\$2,634,475.50	\$1,886,044.96	\$748,430.54
Jurupa Avenue	Van Buren Boulevard	Columbus Street	IIB	1.21	Long Term	\$1,820,500.50	\$0.00	\$1,820,500.50
Kansas Street	University Avenue	3rd Street	IIIB	1.01	Opportunity	\$1,516,086.00	\$0.00	\$1,516,086.00
La Sierra Avenue	Cleveland Avenue	Indiana Avenue	IIB	1.05	Short Term	\$2,428,650.00	\$0.00	\$2,428,650.00
Lemon Street	14th Street	3rd Street	IV	0.83	Long Term	\$1,912,657.83	\$0.00	\$1,912,657.83
Madison Street	Arlington Avenue	Victoria Avenue	IIIB	1.69	Opportunity	\$2,532,355.50	\$0.00	\$2,532,355.50
Magnolia Avenue	Meyers Street	McKenzie Street	II	0.42	Short Term	\$14,747.46	\$0.00	\$14,747.46
Main Street	10th Street	6th Street	I	0.31	Short Term	\$120,992.84	\$0.00	\$120,992.84
Main Street	14th Street	13th Street	II	0.08	Short Term	\$30,555.20	\$0.00	\$30,555.20
Main Street	13th Street	10th Street	IIIB	0.23	Short Term	\$521,946.95	\$0.00	\$521,946.95
Maude Street	Victoria Avenue	Arlington Avenue	IIIB	0.81	Short Term	\$1,215,000.00	\$0.00	\$1,215,000.00
Orange Street	14th Street	3rd Street	IV	0.83	Long Term	\$29,186.97	\$0.00	\$29,186.97
Rutland Avenue	Wells Avenue	Arlington Avenue	IIIB	0.92	Opportunity	\$121,679.84	\$0.00	\$121,679.84
Streeter Avenue	Arlington Avenue	Jurupa Avenue	IIB	1.17	Short Term	\$1,752,162.00	\$0.00	\$1,752,162.00
Tyler Street	Wells Avenue	Arlington Avenue	II	1.35	Long Term	\$3,126,657.89	\$3,126,657.89	\$0.00
Tyler Street	Indiana Avenue	Wells Avenue	II	1.94	Long Term	\$1,979,468.10	\$0.00	\$1,979,468.10
Tyler Street	Arlington Avenue	Jurupa Avenue	IIB	0.97	Opportunity	\$2,242,314.72	\$0.00	\$2,242,314.72
University Avenue	Iowa Avenue	W Campus Drive	IIB	0.46	Opportunity	\$682,713.00	\$0.00	\$682,713.00
Van Buren Boulevard	Victoria Avenue	Jurupa Avenue	IIB	3.73	Opportunity	\$8,631,186.17	\$7,720,399.34	\$910,786.83
Victoria Avenue	La Sierra Avenue	Central Avenue	IV	7.31	Long Term	\$16,897,910.63	\$0.00	\$16,897,910.63
TOTAL						\$70,199,302.61	\$13,578,878.58	\$56,620,424.03

Appendix A2 - Pedestrian Projects Funding Summary

Location	Cross Street	Improvement	Improvement Category	Total Project Cost	TUMF Funding	Non-TUMF Cost
University Avenue	Market St	Intersection Typology E	Long Term	\$1,032,000.00	\$0.00	\$1,032,000.00
Iowa Avenue	W Linden St	Intersection Typology A	Long Term	\$760,000.00	\$0.00	\$760,000.00
Jurupa Avenue	Magnolia Ave	Intersection Typology A	Opportunity	\$435,000.00	\$0.00	\$435,000.00
Wood Road	Van Buren Blvd	Intersection Typology A	Long Term	\$447,000.00	\$223,500.00	\$223,500.00
Indiana Avenue	La Sierra Ave	Intersection Typology A	Long Term	\$947,000.00	\$0.00	\$947,000.00
La Sierra Avenue	Pierce St and Hole St	Upgrade intersection. Bushnell pedestrian plaza with removable bollards and historic signage. Typology A	Long Term	\$1,006,000.00	\$0.00	\$1,006,000.00
Western Avenue	Arlington Avenue	Intersection Typology C	Opportunity	\$260,000.00	\$0.00	\$260,000.00
TOTAL				\$4,887,000.00	\$223,500.00	\$4,663,500.00