TECHNICAL MEMORANDUM

DATE: April 20, 2026
TO: Wei Sun, City of Moreno Valley
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 16301-01 VMT

SUBJECT: RIVERSIDE UNIVERSITY HEALTH SYSTEM MEDICAL CENTER (RUHS) PHASE I VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. has completed the following Vehicle Miles Traveled (VMT) Analysis for the Riverside University Health System Medical Center (RUHS) Phase I development (Project) located on the northwest corner of Nason Street and Cactus Avenue in the City of Moreno Valley.

PROJECT OVERVIEW

It is our understanding that the proposed Project includes an Emergency Department Expansion (EDE), Inpatient Medical Care Facility (IMCF), and a Medical Office Building (MOB). The EDE is planned to be located northeast of and adjacent to the existing Emergency Department building. It is designed as a one-story structure encompassing approximately 65,000 square feet and will accommodate 56 new treatment bays. The MOB is proposed north of Cactus Avenue and southwest of the existing Medical Center buildings. The two-story building will encompass approximately 75,000 square feet of floor area and provide outpatient services. A site plan for the proposed Project is provided in Attachment A.

BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to use VMT as the metric for identifying transportation impacts associated with land use projects. Although this Project is being processed with the County of Riverside it is located wholly within the City of Moreno Valley, therefore, at the direction of County transportation staff, this VMT analysis has been prepared in accordance with the City of Moreno Valley Transportation Impact Analysis Preparation Guide for Vehicle Miles Traveled and Level of Service Assessment (June 2020) (**City Guidelines**) (1).

VMT SCREENING

City Guidelines state that a land use project may be determined to have a less-than-significant transportation impact if it meets one or more VMT screening steps. Each of the screening steps listed in the City Guidelines are described in Table 1 along with a determination of the Project's eligibility to meet each criterion.

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

Screening Step	Description	Result
Step 1: Transit Priority Area (TPA) Screening	Projects located within a TPA (i.e., within a half mile of an existing major transit stop or an existing stop along a high-quality transit corridor) are presumed to have a less-than-significant impact on VMT.	Does not meet.
Step 2: Low VMT Area Screening	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, per worker, or per service population that is similar to the existing land uses in the low VMT area.	Does not meet.
Step 3: Project Type Screening	A project that contains local-serving retail and local serving services such as gas stations, banks, day cares, etc. are assumed to have a less-than-significant VMT impact. In addition, Projects that generate fewer than 400 net average daily trips (ADT) are deemed not to cause a substantial increase in the total citywide or regional VMT and are therefore presumed to have a less-than-significant impact on VMT.	Does not meet.

Note:
Hospitals are generally not considered local-serving under the City of Moreno Valley's VMT Guidelines because they serve a broad regional catchment of patients, staff, and visitors rather than primarily nearby residents. The City Guidelines presumes only certain uses (e.g. local-serving retail < 50,000 sq ft; local gas stations; non-destination hotels) are local-serving for screening purposes. Hospitals are not included in that list and thus are treated as regional or non-local uses.

Consistent with the City Guidelines, as the proposed Project was not found to meet any of the applicable screening steps, a project-level VMT analysis has been prepared.

TRAFFIC MODELING METHODOLOGY

City Guidelines identifies the Riverside County Model (RIVCOM) as the appropriate tool for conducting VMT analysis for land use projects in the City of Moreno Valley[1]. RIVCOM was developed by the Western Riverside Council of Governments (WRCOG) and initially released in June 2021. The most current release of RIVCOM is version 4.0.1, released in February 2024, representing the most current sub-regional transportation 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.

VMT ANALYSIS METHODOLOGY

For the purposes of this analysis, Project-generated VMT has been estimated using the Production/Attraction (PA) method. Consistent with City Guidelines, VMT has been presented as home-based work (HBW) VMT per employee. HBW VMT per employee is an efficiency metric representing VMT generated exclusively from HBW trips on a typical weekday per employee. City Guidelines note that VMT per employee should be used to evaluate employment-generating projects (i.e., non-residential projects).

PRODUCTION/ATTRACTION (PA) VMT

The PA method for calculating VMT sums all weekday VMT generated by HBW trips with at least one trip-end in the study area (i.e., Project Traffic Analysis Zone or TAZ) by trip purpose to/from their ultimate destination unless that destination is outside of the model boundary area. Productions are

[1] Email correspondence from the City of Moreno Valley (January 28, 2025) confirmed the use of the RIVCOM travel demand model for VMT analysis.

land use types that generate trips (residences), and attractions are land use types that attract trips (employment). The PA method allows Project VMT to be evaluated based on trip purpose, which is consistent with both the State's Office of Land Use and Climate Innovation (LCI) Technical Advisory and City Guidelines.

BOUNDARY VMT

City Guidelines identifies that any VMT analysis should also contain an evaluation of a project's effect on 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., Town boundary). 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. The City of Moreno Valley was used as the boundary for this assessment, consistent with the City Guidelines.

VMT METRIC AND SIGNIFICANCE THRESHOLD

The City of Moreno Valley has adopted the following thresholds of significance related to VMT for land use projects. The following thresholds are to be applied to determine potential project-generated VMT impacts[2].

1. A project would have a significant VMT impact if, in the Existing Plus Project, its net VMT per capita (for residential projects) or per employee (for office, industrial and other employment generating projects) exceeds the per capita or per employee VMT threshold for Moreno Valley. For all other uses, a net increase in VMT would be considered a significant impact.
2. If a project is consistent with the regional RTP/SCS, then the cumulative impacts shall be considered less than significant subject to consideration of other substantial evidence. If it is not consistent with the RTP/SCS, then it would have a significant VMT impact if:
    b. For office, industrial, and other employment generating projects, its net VMT per employee exceeds the average VMT per employee for Moreno Valley in the RTP/SCS horizon year.

City Guidelines also note the need to evaluate a project's cumulative effect on VMT, which uses the boundary method to compare how a proposed project changes VMT on the network looking at Citywide VMT per service population (i.e., population and employees). The evaluation is made by comparing Citywide VMT per service population for the "with project" condition to the "no project" condition with a net increase in VMT per service population resulting in a cumulative VMT impact.

CITY OF MORENO VALLEY VMT

The City of Moreno Valley's VMT per employee has been calculated utilizing the RIVCOM base year (2018) traffic model and the horizon year (2045) traffic model. All TAZs located within City of Moreno Valley were selected and the HBW VMT was calculated from RIVCOM. For ease of comparison, the VMT for the City was then divided by the City's employment. Using straight-line interpolation, to the Project's opening year (2029) VMT per employee is obtained from the base year and horizon year

[2] City Guidelines; Page 26

results. The City of Moreno Valley baseline year average VMT per employee of 26.5 and a horizon year average of 26.2 VMT per employee, as presented in Table 2.

TABLE 2: CITY OF MORENO VALLEY VMT PER EMPLOYEE

	Opening Year (2029)	Horizon Year (2045)
City Employee	52,102	65,138
City HBW VMT	1,375,049	1,704,454
City VMT per Employee (Thresholds)	26.4	26.2

PROJECT VMT ESTIMATES

To evaluate Project-generated VMT, standard land use information such as building square footage must first be converted into a RIVCOM-compatible dataset. The RIVCOM model utilizes socio-economic data (SED) (e.g., population and employment) as key inputs for the purposes of vehicle trip estimation. The Project is located in TAZ 1233. To isolate Project-generated VMT, and in accordance with the City's Guidelines, TAZ 1233 contains only the land use information associated with the proposed Project. No other existing land uses are present within this TAZ. Table 3 presents the SED inputs used to represent the Project in the Project's TAZ within RIVCOM.

TABLE 3: PHASE 1 EMPLOYEE ESTIMATES

Land Use	Opening Year	Project Buildout
EDE	55	55
IMCF	0	693
MOB	102	213
Total	**157**	**907**

Note:
Employment estimates were obtained in the RUHS Long Range Master Plan.

Project-generated VMT and a comparison to the City's impact thresholds are presented in Table 4. The Project is estimated to generate VMT per employee below the City's VMT impact threshold under both baseline and horizon year conditions. Resulting RIVCOM model operation outputs can be found in Attachment B.

TABLE 4: PROJECT-GENERATED VMT PER EMPLOYEE

	Opening Year	Horizon Year
Regional Threshold	26.4	26.2
Project Employees	157	907
Project VMT	3,580	20,378
Project VMT per Employee	22.7	22.5
Potential VMT Impact?	No	No

PROJECT'S CUMULATIVE EFFECT ON VMT

The Project's cumulative effect on VMT has been calculated using the boundary method. Land use information representing the proposed land use information contemplated by the Project was coded into the Project TAZ to represent the "With Project" condition. Table 5 summarizes the Boundary VMT under the No Project and With Project for both baseline year and horizon year conditions.

TABLE 5: PROJECT EFFECT ON VMT

	Service Population	Boundary VMT	VMT per Service Population	Exceeds City Threshold?
Opening Year No Project	282,962	2,772,801	9.8	-
Opening Year With Project	**283,013**	**2,773,281**	**9.8**	**No**
Horizon Year No Project	336,593	3,435,312	10.2	-
Horizon Year With Project	**337,500**	**3,441,489**	**10.2**	**No**

Citywide VMT per service population was not found to increase in the With Project condition, therefore, the Project's cumulative effect on VMT does not exceed the City's impact threshold and the Project would result in a less-than-significant cumulative impact.

CONCLUSION

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

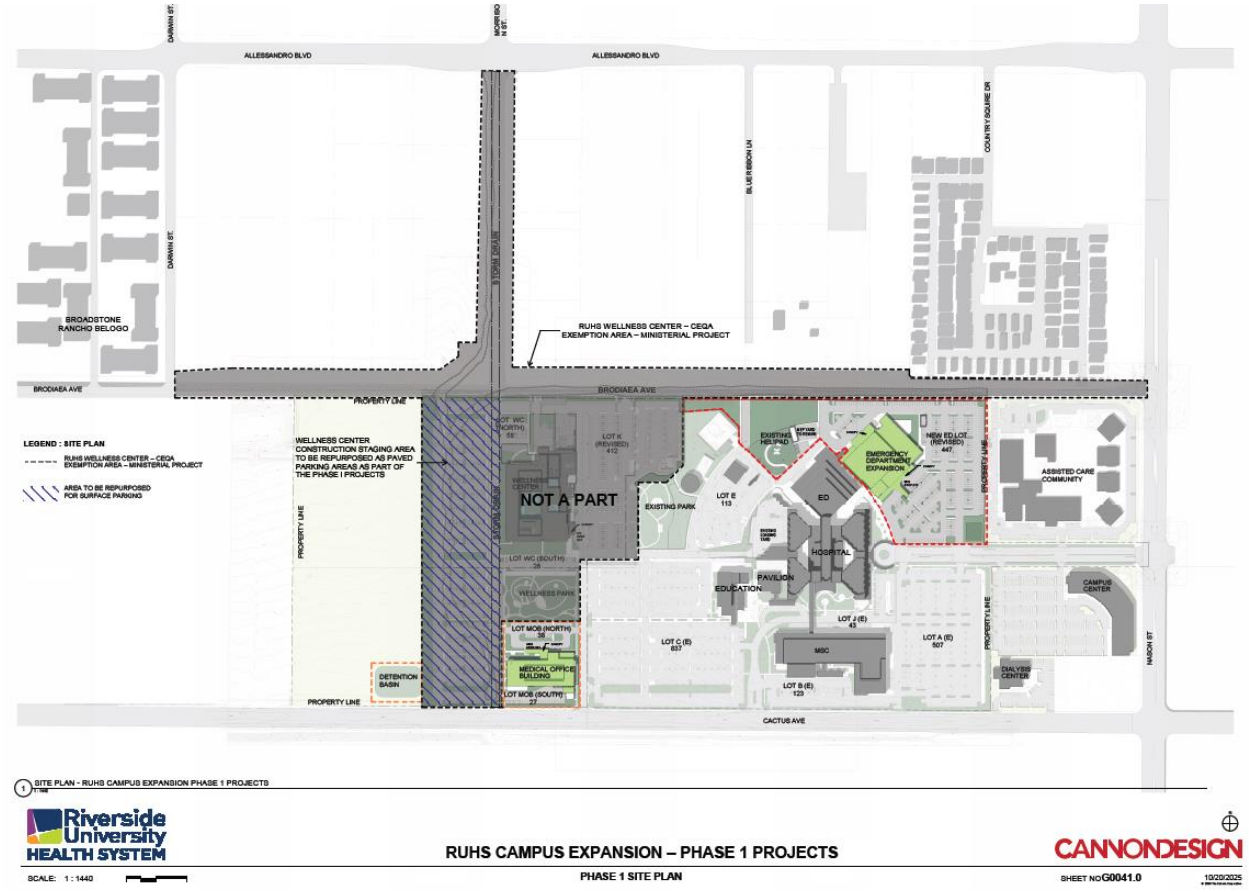
- As the Project area lies within the City of Moreno Valley, the County of Riverside directed the use of City of Moreno Valley Guidelines for preparation of the VMT analysis.
- The Project was evaluated against the City's applicable VMT screening steps. The Project was not found to screen from VMT analysis.
- A project-level VMT analysis was performed consistent with City Guidelines.
- The VMT analysis results show VMT per employee for both baseline year and horizon year conditions is below the Citywide average VMT per employee. Therefore, the Project is below the City's impact thresholds for both opening year and horizon year conditions.
- The Project's cumulative effect on VMT was not found to increase VMT per service population in either the opening year or horizon year conditions and is below the City's cumulative VMT impact thresholds.

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

REFERENCES

1. **City of Moreno Valley.** *Transportation Impact Analysis Preparation Guide for Vehicle Miles Traveled and Level of Service Assessment.* City of Moreno Valley : s.n., June 2020.

ATTACHMENT A:
PROJECT SITE PLAN



ATTACHMENT B:
RIVCOM MODEL OPERATION OUTPUTS

Model Year	2018	2045
TAZ	1233	1233
Daily_Home-Based (incl. IEHB) Prod VMT	128.785431	7425.989258
Daily_HBW (incl. EIHBW) Attr VMT	128.785431	20377.60547
Daily_Total Auto OD From VMT	2653.002686	21633.74219
Daily_Total Auto OD To VMT	2898.967529	23027.60156
Daily_Total Auto OD Intra VMT	0.441785	35.104347
Daily_Total Truck OD From VMT	121.31308	742.437256
Daily_Total Truck OD To VMT	122.47168	745.005981
Daily_Total Truck OD Intra VMT	0.006942	0.212229
Daily_Total OD From VMT	2774.315674	22376.17969
Daily_Total OD To VMT	3021.438965	23772.60547
Daily_Total OD Intra VMT	0.448727	35.316574
Daily_Total_TripLen	14.586299	11.666729
Population	0	0
Employment	158	907
Enrollment	0	0