Appendix M-2: Vehicle Miles Traveled (VMT) Analysis

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MEMORANDUM

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DATE: June 24, 2024
TO: Gary Edwards, PSIP WR Green River, LLC
FROM: Alex So, Urban Crossroads
JOB NO: 12630-04 VMT

GREEN RIVER RANCH SPECIFIC PLAN AMENDMENT VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for the Green River Ranch Specific Plan Amendment (**Project**), which is located at the southwest corner of Green River Road and Dominguez Ranch Road, in the City of Corona.

PROJECT OVERVIEW

The Project is proposing an amendment to the previously approved Green River Ranch Specific Plan, a Precise Plan for the Business Park Industrial component of the Project, and a tentative tract map. The Precise Plan includes the development of 746,167 square feet of building space and for the purposes of the Traffic Study assumes 634,242 square feet of industrial park use (85% of the overall Business Park Industrial square footage) and 111,925 square feet of high-cube cold storage warehouse use (15% of the overall Business Park Industrial square footage).

The Project is proposed to be developed in phases as follows:

1. **Phase 1:** 634,242 square feet of Business Park Industrial use and 111,925 square feet of High-Cube Cold Storage Warehouse use ((Planning Areas) or PAs 1, 2, and 3)
2. **Phase 2:** Development in Phase 1 plus up to 19,600 square feet of general commercial uses which for the purposes of the traffic study will be evaluated as a Gas Station with Convenience Market with 12 vehicle fueling positions, 2,500 square feet of Fast-Food Restaurant with Drive-Through Window use, 4,200 square feet of Fine Dining Restaurant use, and 9,500 square feet of High Turnover (Sit-Down) Restaurant use (buildout of PAs 1, 2, and 3 and the addition of PA 4). The land uses and intensities proposed for the retail component were selected in order to conduct a conservative analysis (i.e., evaluate a higher trip generation than 19,600 square feet of general commercial use)
3. **Project Buildout:** Development in Phases 1 and 2 plus the addition of 32 Residential Estate Lots (buildout of PAs 1, 2, 3, and 4 and the addition of PA 5)

Specific development plans are not proposed for Planning Areas 4 and 5. A land use plan for the proposed Project is shown on Attachment A.

BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to adopt VMT as the measure for identifying transportation impacts for land use projects. To comply with CEQA, in January of 2019, the City of Corona has developed and adopted their City of Corona CEQA Assessment – VMT Analysis Guidelines (**City Guidelines**) (1). This VMT analysis has been developed based on the adopted City Guidelines.

VMT SCREENING

City Guidelines state that a project may have a less than significant impact and screen out of requiring a project level assessment if it meets at least one of the City's VMT screening criteria. The City'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 ANALYSIS

Screening Criteria	Description	Result
Transit Priority (TPA) Screening	Projects located within Transit Priority Areas (TPAs) or High-Quality Transit Areas (HQTAs) as determined by the most recent Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) are presumed to have a less than significant impact on VMT.	Does not meet.
Low VMT Area Screening	Projects located within a low VMT generating TAZ are consistent with existing land use and RTP/SCS assumptions or improve VMT per service population compared to RTP/SCS are presumed to have a less than significant VMT impact.	Does not meet.
Project Type Screening	Local-Serving Retail under 50,000 square feet and Local Essential Services such as neighborhood K-12 schools are presumed to have a less than significant impact on VMT.	Partially met for the Local-Serving Retail components.

The Project's retail component was found to meet the Project Type Screening criteria for the Local-Serving components of the Project only. However, the remaining business park, industrial and residential components do not meet any applicable screening criteria. Therefore, consistent with City Guidelines a VMT analysis was conducted for the entirety of the Project.

VMT ANALYSIS

VMT MODELING

Through consultation with City Staff, it was determined the Riverside County Model (**RIVCOM**), is the preferred tool for conducting VMT analysis for land use projects in the City of Corona. 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 ANALYSIS METHODOLOGY

For the purposes of this analysis, Project generated VMT has been estimated using the Origin/Destination method and Boundary method. Consistent with City VMT Guidelines, VMT has been presented as total VMT and total VMT per service Population (i.e., population and employees). Total VMT represents all VMT generated in the City of Corona on a typical weekday. Total VMT per service population is an efficiency metric representing VMT generated on a typical weekday per person who lives and/or works in the City or travels to the City for another purpose.

ORIGIN/DESTINATION VMT METHOD

The Origin/Destination (OD) method for calculating VMT sums all weekday VMT generated by trips with at least one trip-end in the study area and tracks those trips to their origin or destination. Origins are all vehicle trips that start in a specific traffic analysis zone, while destinations are all vehicle trips that end in a specific traffic analysis zone. The OD method accounts for all trips (i.e., both passenger cars and trucks) and trip purposes (i.e., total VMT) and therefore provides a more complete estimate of VMT.

BOUNDARY VMT METHOD

The boundary method is the sum of all weekday VMT on the roadway network within a designated boundary (i.e., City boundary or other designated geographic area). 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 City VMT Guidelines, the City of Corona was used as the boundary for this assessment.

CITY OF CORONA VMT IMPACT CRITERIA

City Guidelines state that for purposes of determining a potentially significant impact to transportation pursuant to CEQA, a project would result in a significant project-generated impact if the following condition is satisfied:

- A significant impact would occur if the Project generates total daily VMT per service population above the existing total daily VMT per service population for the City.

Additionally, the project's effect on VMT would be considered significant if it results in the following condition to be satisfied:

- A significant impact would occur if the Project caused total daily VMT within the City to be higher than the no project alternative under cumulative conditions.

To make an impact determination, the City of Corona's average VMT per service population was calculated using the RIVCOM model. Table 2 presents the resulting City of Corona's average existing VMT per service population.

TABLE 2: CITY OF CORONA VMT PER SERVICE POPULATION

	Baseline
Service Population	249,403
VMT	10,120,351
VMT per Service Population	40.6

As shown in Table 2, the City of Corona's VMT per service population has been calculated as 40.6 VMT per service population.

PROJECT VMT ESTIMATES

To estimate OD 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, households, and employment) for the purposes of vehicle trip estimation. Project employee estimates were calculated based on building square footage consistent with employment and population density factors derived from Table 2-1 of the City of Corona General Plan Update Transportation Impact Analysis (July 2019) and the Institute of Transportation Engineers (ITE) rates. Table 3 summarizes the SED inputs used to represent the Project. Project SED data was then coded into a separate TAZ to isolate Project generated VMT. The Project effect on VMT was performed using boundary VMT within the City of Corona.

TABLE 3: PROJECT POPULATION AND EMPLOYMENT ESTIMATES

Land Use	Quantity	Units	Estimated SED
Industrial Park	634,242	Square Feet	866 Employees
Warehouse	111,925	Square Feet	112 Employees
Retail (Gas Station)	12	Vehicle Fuel Positions	12 Employees
Other Retail	16,200	Square Feet	93 Employees
Residential	32	Households	115 Population

The VMT estimates calculated for the Project are presented in Table 4 and Table 5. As shown in Table 4, the proposed Project is forecast to generate OD VMT per service population above the City's adopted impact threshold for baseline traffic conditions and is considered to have a potentially significant impact on project generated VMT. RIVCOM output data can be found in Attachment B.

TABLE 4: PROJECT GENERATED VMT

	Baseline
Service Population	1,197
Total OD VMT	74,229
OD VMT per Service Population	62.0
City Threshold	40.6
Percent Above Threshold	52.7%
Potentially Significant?	Yes

Table 5 presents boundary VMT and boundary VMT per service population estimates for the cumulative condition. As the RIVCOM model already includes land use assumptions in the cumulative year for the Project's TAZ, the Project's proposed land uses were incorporated in conjunction with what was already assumed in the "With Project" cumulative year RIVCOM model. The boundary VMT per service population is found to remain unchanged in the With Project scenario under the cumulative condition. As the Project is located on the western edge of Riverside County within 1 mile of the Orange County border the effect of VMT within the City of Corona may be understated. To more accurately evaluate the potential effect on VMT for the region, an additional cumulative boundary VMT assessment for a 10-mile boundary was conducted and gave similar results.

TABLE 5: BOUNDARY VMT

	City Boundary		10-Mile Boundary	
Cumulative	No Project	With Project	No Project	With Project
Service Population	273,538	273,403	670,082	669,947
Boundary VMT	5,603,925	5,637,636	16,538,117	16,653,883
VMT per Service Population	20.5	20.6	24.7	24.9
Change in VMT per Service Population	0.1		0.2	

The results of the boundary VMT are consistent with the proposed Project's change in land use types and intensities as compared to the previously approved Specific Plan contained within the RIVCOM model, which results in a reduction in service population and boundary VMT.

The Project's cumulative effect on VMT is considered significant as there was an increase to the boundary VMT per service population within the City Boundary and 10-Mile Boundary in the With Project scenario.

POTENTIAL VMT REDUCTION STRATEGIES

The Project shall develop and implement transportation demand management (TDM) strategies that are considered feasible and will contribute to reducing project generated VMT.

Features to promote the use of alternative transportation modes such as sidewalks, bicycle lanes, and bicycle racks are included as part of the Project's design. Property owner associations and/or building occupants shall be required to implement a TDM Plan to discourage single-occupancy vehicle trips for employees and encourage alternative modes of transportation such as

carpooling, transit, walking, and biking. Trip reduction strategies applicable to the Project may include but are not limited to the following:

- Implement local hiring programs.
- Mark preferred parking spaces for vanpools and carpools.
- Provide on-site secured bike parking facilities.
- Provide information on carpooling and vanpooling opportunities to employees.
- Provide an on-site message board in each building or other comparable system to encourage and provide information about public transit, carpooling, and vanpooling, and carpool and vanpool ride-matching services.

The TDM plan shall include an estimate of the vehicle trip reduction anticipated for each strategy proposed based on published research such as California Air Pollution Control Officers Association (CAPCOA), Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (December 2021) (**CAPCOA Handbook**). For TDM measures that require ongoing operational strategies, the TDM plan shall include an ongoing monitoring program to ensure the plan is implemented on an ongoing basis. CEQA requires that feasible mitigation measures be implemented to reduce a project's level of impact. Sufficient TDM reduction strategies do not exist to reduce the project's daily VMT per service population by 43.3 percent as required to fully mitigate the impact.

CONCLUSION

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

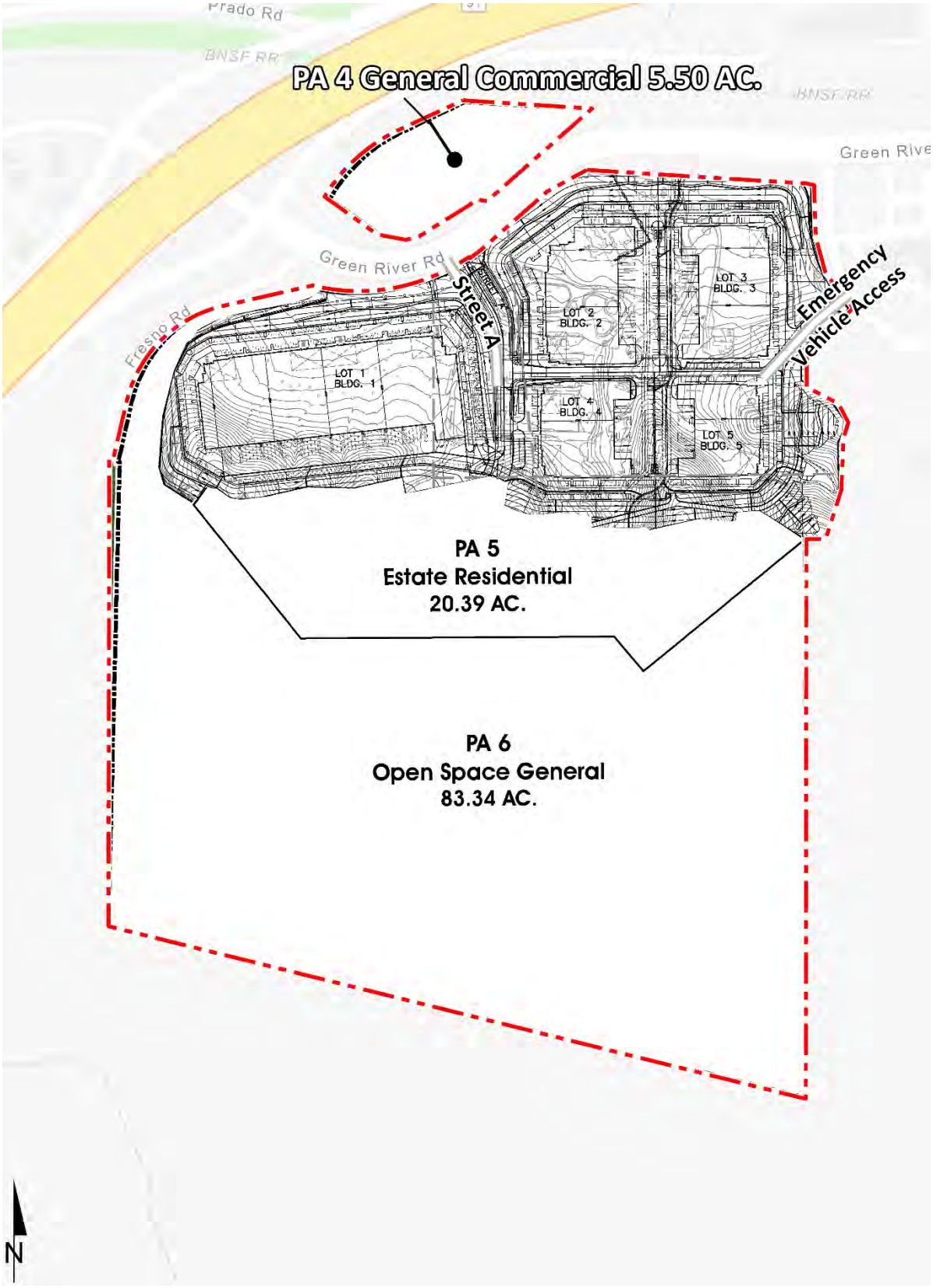
- The Project was evaluated against screening criteria as outlined in the City Guidelines. The Project's retail component meets the local serving screening criteria. However, the remaining business park, industrial and residential components were not found to meet any available screening criteria, and a VMT analysis was performed.
- The Project's VMT analysis found the Project to exceed the City's impact threshold by 52.7%. The Project is determined to have a potentially significant project generated transportation impact.
- The Project's effect on VMT was found to remain increase in the With Project scenario as compared to the No Project scenario for the Cumulative condition using both the City boundary and 10-mile boundary. In other words, the Project's cumulative effect on VMT was found to be significant.
- 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. **City of Corona.** *CEQA Assessment – VMT Analysis Guidelines.* City of Corona : s.n., January 2019.

ATTACHMENT A
PRELIMINARY SITE PLAN


Prado Rd
BNSF RR
PA 4 General Commercial 5.50 AC.
Green River Rd
Fresno Rd
Street A
LOT 1
BLDG. 1
LOT 2
BLDG. 2
LOT 3
BLDG. 3
LOT 4
BLDG. 4
LOT 5
BLDG. 5
Emergency Vehicle Access
PA 5
Estate Residential
20.39 AC.
PA 6
Open Space General
83.34 AC.
N

ATTACHMENT B
RIVCOM OUTPUTS

TABLE B-1: RIVCOM 2018

TAZ	568
Daily_Home-Based (incl. IEHB) Prod VMT	679.363098
Daily_HBW (incl. EIHBW) Attr VMT	48096.56641
Daily_Total Auto OD From VMT	32023.21484
Daily_Total Auto OD To VMT	33914.07422
Daily_Total Auto OD Intra VMT	16.85273
Daily_Total Truck OD From VMT	4464.847656
Daily_Total Truck OD To VMT	4456.499023
Daily_Total Truck OD Intra VMT	1.807159
Daily_Total OD From VMT	36488.0625
Daily_Total OD To VMT	38370.57031
Daily_Total OD Intra VMT	18.659889
Daily_Total_TripLen	21.851798
Population	115
Employment	1082
Enrollment	0

TABLE B-2: RIVCOM 2045

TAZ	568
Daily_Home-Based (incl. IEHB) Prod VMT	1396.860962
Daily_HBW (incl. EIHBW) Attr VMT	44958.16406
Daily_Total Auto OD From VMT	30962.74609
Daily_Total Auto OD To VMT	32168.20508
Daily_Total Auto OD Intra VMT	16.609097
Daily_Total Truck OD From VMT	4166.518555
Daily_Total Truck OD To VMT	4160.462402
Daily_Total Truck OD Intra VMT	1.689721
Daily_Total OD From VMT	35129.26563
Daily_Total OD To VMT	36328.66406
Daily_Total OD Intra VMT	18.298817
Daily_Total_TripLen	22.225713
Population	115
Employment	1082
Enrollment	0

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