Appendix M.2

Vehicle Miles Traveled (VMT) Evaluation Urban Crossroads, 2021

Travertine SPA
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Technical Appendices

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URBAN CROSSROADS

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SUBJECT: TRAVERTINE SPECIFIC PLAN VEHICLE MILES TRAVELED (VMT) ANALYSIS

Dear Lisa Hofmann Morgan:

The following vehicle miles traveled (VMT) analysis has been prepared for the proposed Travertine Specific Plan (**Project**) in the City of La Quinta. For VMT analysis purposes, the proposed mixed use Project consists of approximately 758 single family detached residential homes, 442 duplex residential units, a 100-room resort hotel, and the planning area 11 resort/golf (46.2 acres). The planning area 11 resort/golf land use include the following:

- Golf Practice (4-Holes) & Driving Range: 23.9 Acres
- Golf Academy: 4.7 Acres
- Banquet Facility & Restaurant: 4.6 Acres
- Slopes: 13.0 Acres

Project phasing and long range future traffic conditions with Project land use changes are evaluated in the Travertine Specific Plan Traffic Impact Analysis (November 4, 2020).

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 new measure for identifying transportation impacts for land use projects. This statewide mandate was implemented on July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**). (1)

Based on OPR's Technical Advisory, the City of La Quinta has prepared their Vehicle Miles Traveled Analysis Policy (**City Guidelines**). (2) This analysis has been prepared based on the adopted City Guidelines.

VMT ANALYSIS METHODOLOGY

The Vehicle Miles Traveled Analysis Policy (June 2020) (**La Quinta Guidelines**) are consistent with the VMT analysis methodology recommended by OPR. As outlined in the La Quinta Guidelines, a Mixed-Use project such as Travertine Specific Plan, which includes both residential and non-residential uses has

each type of uses analyzed independently, applying the following significance thresholds for each land use component:

- For Residential Uses, VMT per resident exceeding a level of (1) 15 percent below the Citywide per resident VMT OR (2) 15 percent below regional VMT per resident, whichever is more stringent
- For Retail Uses (Includes Hotels), a net increase in the total existing VMT for the region.

PROJECT SCREENING

The La Quinta Guidelines provide details on appropriate "screening thresholds" that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed analysis. Screening thresholds are broken into three types:

- Transit Priority Area (TPA) Screening
- Low VMT Area Screening
- Project Type Screening

A land use project need only to meet one of the above screening thresholds to result in a less-than-significant impact.

For the purposes of this analysis, the initial VMT screening process has been conducted using the Riverside County Transportation Analysis Model (RIVTAM).

TPA SCREENING

Consistent with guidance identified in the Technical Advisory, projects located within a Transit Priority Area (TPA) may be presumed to have a less than significant impact absent substantial evidence to the contrary. A TPA is defined as within ½ mile of:

1) an existing "major transit stop" (containing a rail transit station served by either bus services or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods) or

2) an existing stop along a "high-quality transit corridor" (a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours)

However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

The Project site is not located within ½ mile of an existing major transit stop, or along a high-quality transit corridor.

The TPA screening threshold is not met.

LOW VMT AREA SCREENING

The La Quinta Guidelines also states that, "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." The sub-regional Riverside County Transportation Analysis Model (RIVTAM) is used to measure VMT performance within individual traffic analysis zones (TAZs). An estimate of the VMT in the Project's physical location was calculated to determine the relevant TAZ's VMT, which is not lower than the jurisdictional average (see Attachment A). The Project is located in TAZ 4743, which is not a low VMT generating TAZ.

The Low VMT Area screening threshold is not met.

PROJECT TYPE SCREENING

The La Quinta Guidelines specify that projects that are local serving by nature, or that generate fewer than 110 daily vehicle trips can be presumed to have a less-than-significant impact on VMT. Based on the Project's resort hotel trip generation (see Attachment B), the Project would not be eligible to be screened out based on the amount of trips generated.

The La Quinta Guidelines allow small local-serving hotel (non-destination hotel) projects to be screened out. Based on the anticipated resort characteristics of the Project, it would not be eligible to screen out based on project type screening.

The Project Type screening threshold is not met.

Since none of the project level screening criteria were met, a project level VMT analysis has been prepared.

PROJECT VMT ASSESSMENT

The VMT projections are based upon an updated version of the Riverside County Transportation Analysis Model (RIVTAM) which became available in the CVAG region during 2016. RIVTAM is consistent with the SCAG draft 2016 RTP for the CVAG Transportation Project Prioritization Study (TPPS) 2040 project.

Travel Demand Models such as RIVTAM are broadly considered to be amongst the most accurate of available tools to assess regional and sub-area VMT. While the Southern California Association of Governments (SCAG) maintains the regional travel demand model as a part of the Regional Transportation Plan/Sustainable Communities Strategy program (RTP/SCS), Riverside County maintains RIVTAM as a focused version of the regional model in support of travel forecasting needs of the various

agencies and jurisdictions within the County. The latest available version of RIVTAM has been determined to be the best fit for developing the VMT thresholds as it has the most up to date land use information for the County, as well as refined zonal structure within the County.

The 2040 Future Year model scenario is used for the cumulative conditions in the County. The five other counties included in the model (Ventura County, Los Angeles County, Orange County, San Bernardino County, and Imperial County) are contributors to the trips to/from Riverside County during a typical weekday.

Socioeconomic data (SED) and other model inputs are associated with each TAZ. Out of several different variables in the model SED, the VMT analysis mainly focused on population, households and employment that are used in the trip generation component. The model runs a series of complex steps to estimate daily trip productions and attractions by various trip purposes for each TAZ. The trip purposes are listed below.

1. *Home-Based Work Direct (HBWD)*
2. *Home-Based Work Strategic (HBWS)*
3. *Home-Based School (HBSC)*
4. *Home-Based College and University (HBCU)*
5. *Home-Based Shopping (HBSH)*
6. *Home-Based Serving-Passenger (HBSP)*
7. *Home-Based Other (HBO)*
8. *Work-Based Other (WBO)*
9. *Other-Based Other (OBO)*

Productions and attractions are computed by RIVTAM for each trip purpose, and trip lengths are derived for each zone pair from the respective skim matrices in the model to compute the production and attraction VMT by purpose.

RIVTAM is therefore a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, income, and employment. The La Quinta Guidelines identifies RIVTAM as the appropriate tool for conducting VMT analysis for land use projects in Riverside County.

Project VMT has been calculated using the most current version of RIVTAM. Adjustments in socio-economic data (SED) (i.e., population and employment) have been made to a separate TAZ within the RIVTAM model to reflect the Project's proposed population and employment uses. Separate TAZs are used to isolate the Project's VMT.

Table 1 summarizes the service population estimates (population, hotel guests and employment) for the Project. It should be noted that the employment estimates have been developed from land use to employment generation factors from the Riverside County General Plan but modified for the specific

Project characteristics and then confirmed with the Client. Although the Project employment is a mix of employment types, the City of La Quinta guidelines are explicit indicating that the hotel land uses are categorized as retail uses for the purposes of VMT analysis. Consistent with historic modeling of Travertine project, 2.8 persons per household were used for single family detached homes and 2.6 persons per household were used for duplex residential units. This results in an overall project average of 2.71 persons per household, which is higher than the SCAG RTP estimates for the City of La Quinta (2.57 persons per household in 2012 and 2.50 persons per household in 2040), resulting in a conservative analysis.

TABLE 1: POPULATION AND EMPLOYMENT ESTIMATES

Land Use	Estimated Service Population
Residential	3,250 Residents
100-Room Hotel/Resort	170 Employees
100-Room Hotel/Resort	200 Occupants
PA 11 Resort/Golf • Golf Practice (4-Holes) & Driving Range • Golf Academy • Banquet Facility & Restaurant	 15 Employees 30 Employees 35 Employees
Total Service Population:	**3,700 Service Population**

Adjustments to population and employment factors for the Project TAZ were made to the RIVTAM base year model (2012) and the cumulative year model (2040). Each model was then run with the updated SED factors included for the Project TAZ.

PROJECT RESIDENTIAL VMT CALCULATION

Consistent with recommendations contained in the La Quinta Guidelines, the residential calculation of VMT is based upon the home-based project-generated VMT per population. This calculation focuses on the occupants of dwelling units within the Project, whereas hotel occupants and employees are evaluated separately using the boundary method discussed below. Table 2 shows the home-based VMT associated with the Project for both baseline and cumulative conditions. VMT estimates are provided for both the base year model (2012) and cumulative year model (2040), and linear interpolation was used to determine the Project's home-based baseline (2020) VMT.

TABLE 2: BASELINE AND CUMULATIVE PROJECT RESIDENTIAL HOME-BASED VMT

	Project 2012	Project 2040	Project 2020 (interpolated)
Residents	3,250	3,250	3,250
VMT	47,140	51,926	48,508
VMT / Resident	14.50	15.98	14.93

For baseline (2020) conditions, the residential portion of the Project generates 48,508 Home-Based VMT. There are an estimated 3,250 Project residents. The result is approximately 14.93 home-based VMT / Capita for the 2020 Baseline with Project conditions.

For comparison purposes, Citywide home-based VMT estimates have been also developed from the RIVTAM model run for baseline conditions. Once total home-based VMT for the area is calculated, total area VMT is then normalized by dividing by the population as shown on Table 3.

TABLE 3: BASE YEAR CITYWIDE HOME-BASED VMT

Category	City of La Quinta
VMT	544,993
Population	42,000
VMT / Resident	12.98

The estimates of baseline residential home-based Project VMT / Capita are compared to the City of La Quinta VMT of 12.98 home-based VMT / Capita. The City of La Quinta guidelines indicate that residential VMT exceeding the threshold of 15 percent below the Citywide VMT per resident (11.03 VMT / capita) represents a Project impact. The Project home-based VMT / Capita of 14.93 is greater than the City VMT / Capita threshold, and a potentially significant VMT impact is indicated.

PROJECT EMPLOYMENT IMPACT ON VMT

As noted above, the VMT analysis methodology for retail uses (including hotels) focuses on the net increase in the total existing VMT for the region. The project consists of approximately 250 employees, including retail employees, service employees, and other employees.

Travel activity associated with total link-level VMT was extracted from the "without Project" and "with non-residential Project" RIVTAM model run for 2012 and 2040 conditions, then interpolated for baseline (2020) conditions. This methodology is commonly referred to as "boundary method" and includes the total VMT for all vehicle trips with one or both trip ends within a specific geographic area. The "boundary method" VMT per service population for the CVAG subregion is utilized to normalize VMT into a standard unit for comparison purposes, focusing on the total population and employment in the Coachella Valley. Once total VMT for the area is calculated, total area VMT is then normalized by dividing by the respective service population (i.e., population and employment of the Coachella Valley) as shown on Table 4.

TABLE 4: BASE YEAR SUB-REGIONAL LINK-LEVEL VMT

	Without Project Employment	With Project Employment
VMT Interacting with CVAG Area	15,173,739	15,172,507
CVAG Area Population	510,550	510,550
CVAG Area Employment	193,090	193,340
VMT / Service Population	21.56	21.56

To determine whether or not there is a significant impact using the boundary method, CVAG area VMT with the project employment is compared to without project conditions. The CVAG subregion VMT / SP without Project employment and with Project employment are both estimated at 21.56. However, the total VMT slightly decreases from 15,173,739 to 15,172,507 with the addition of the Project. The project's effect on VMT (for non-residential uses) is not considered significant because it does not result in a cumulative link-level boundary CVAG VMT per service population increase under the plus project condition compared to the no project condition. It should be noted that when a project provides a mix of uses that provides additional opportunities for nearby (and Project) residents to work, recreate, etc., the non-residential VMT for an area can decrease. Essentially, residents do not need to travel as far to accomplish their goals so the regional VMT can decrease.

PROJECT DESIGN FEATURES FOR VMT REDUCTION

Transportation demand management (TDM) strategies have been evaluated for the purpose of reducing VMT impacts determined to be potentially significant. Quantifying Greenhouse Gas Mitigation Measures, (California Air Pollution Control Officers Association - CAPCOA) 2010 provides information on individual understand potential reduction in VMT. Of the 50 transportation measures presented by CAPCOA, approximately 41 are applicable at a building and site level. The remaining 9 measures are functions of, or depend on, site location and/or actions by local and regional agencies or funders.

On page 58 of the CAPCOA 2010 document, ten percent is referenced as the maximum reduction when combining multiple mitigation strategies for the *suburban* place type (characterized by dispersed, low-density, single-use, automobile dependent land use patterns) and requires a project to contain a diverse land use mix, workforce housing, and project-specific transit. The maximum percent reductions were derived from a limited comparison of aggregate citywide VMT performance rather than based on data comparing the actual performance of VMT reduction strategies in the place type.

Even under the most favorable circumstances, projects located within a suburban context, such as the proposed Project evaluated here, can realize a maximum 10 percent reduction in VMT through implementation of feasible TDM measures. The Project incorporates design features and attributes promoting trip reduction. Because these features/attributes are integral to the Project, and/or are regulatory requirements, they are not considered to be mitigation measures. However, the RIVTAM does not incorporate modeling of these features, so they are considered after the VMT data is extracted from the traffic model.

Project vehicle miles traveled (VMT) are reduced by the following Project design features/attributes, which are anticipated to collectively reduce Project home-based VMT by approximately 3%:

- Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example, when residential areas are in the same neighborhood as resort land uses, a resident does not need to travel outside of the neighborhood to meet his/her recreational needs. The project will implement marketing strategies to optimize interaction between on-site resort

and residential uses. Information sharing and marketing are important components to successful trip reduction strategies. Marketing strategies may include:

- Resident member benefits that include use of the resort amenities
- Event promotions
- Publications

The Project's mix of resort and residential uses could provide for a potential reduction in Project residential VMT of 2%. As mentioned previously, when a project provides a mix of uses that provides additional opportunities for nearby (and Project) residents to work, recreate, etc., the non-residential VMT for an area can decrease. Essentially, residents do not need to travel as far to accomplish their goals so the regional VMT can decrease

- The Project includes sidewalk connections and would minimize barriers to pedestrian access and interconnectivity. The Project's implementation of this measure could provide for a potential reduction in Project residential VMT of 1%.

In summary, travel demand modeling of VMT for the Project based upon City of La Quinta guidelines indicates a potential impact for residential uses while also indicating the Project's non-residential uses do not exceed VMT thresholds. Project design features taken into account after the modeling process reduce home-based VMT from 12.98 VMT / resident to 12.59 home-based VMT per resident, which is more than the City's VMT residential threshold of 11.03 VMT per resident and a VMT impact.

If you have any questions, please contact us at (949) 375-2435 for John or (714) 585-0574 for Marlie.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain

Marlie Whiteman

John Kain, AICP
Principal

Marlie Whiteman, PE
Senior Associate

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **City of La Quinta.** *Vehicle Miles Traveled Aanlysis Policy.* June 23, 2020.
3. **County of Riverside.** *Appendix E: Socioeconomic Build-Out Assumptions and Methodology.* County of Riverside : s.n., April 2017.

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ATTACHMENT A
LOW VMT AREA SCREENING CALCULATIONS

RivTAM TAZ 4743

Vehicle Flow OD Method[1]	
	Base Year (2012) TAZ 4743
Vehicle Flow OD Total	**12,375** [2]
Automobiles	12,304
Trucks	71

OD Method Vehicle Miles Traveled[1]	
	Base Year (2012) TAZ 4743
VMT OD Total	**165,063** [6]
VMT OD Automobiles	162,802
VMT OD Trucks	2,261

Trip Length	
	Base Year (2012) TAZ 4743
Trip Length Total	**13.34** [3]
Automobiles	13.23
Trucks	31.87

Vehicle Flow PA Method[4]	
	Base Year (2012) TAZ 4743
HB[5]	540 [6]

PA Method Vehicle Miles Traveled[4]	
	Base Year (2012) TAZ 4743
VMT HB	9,078 [7]

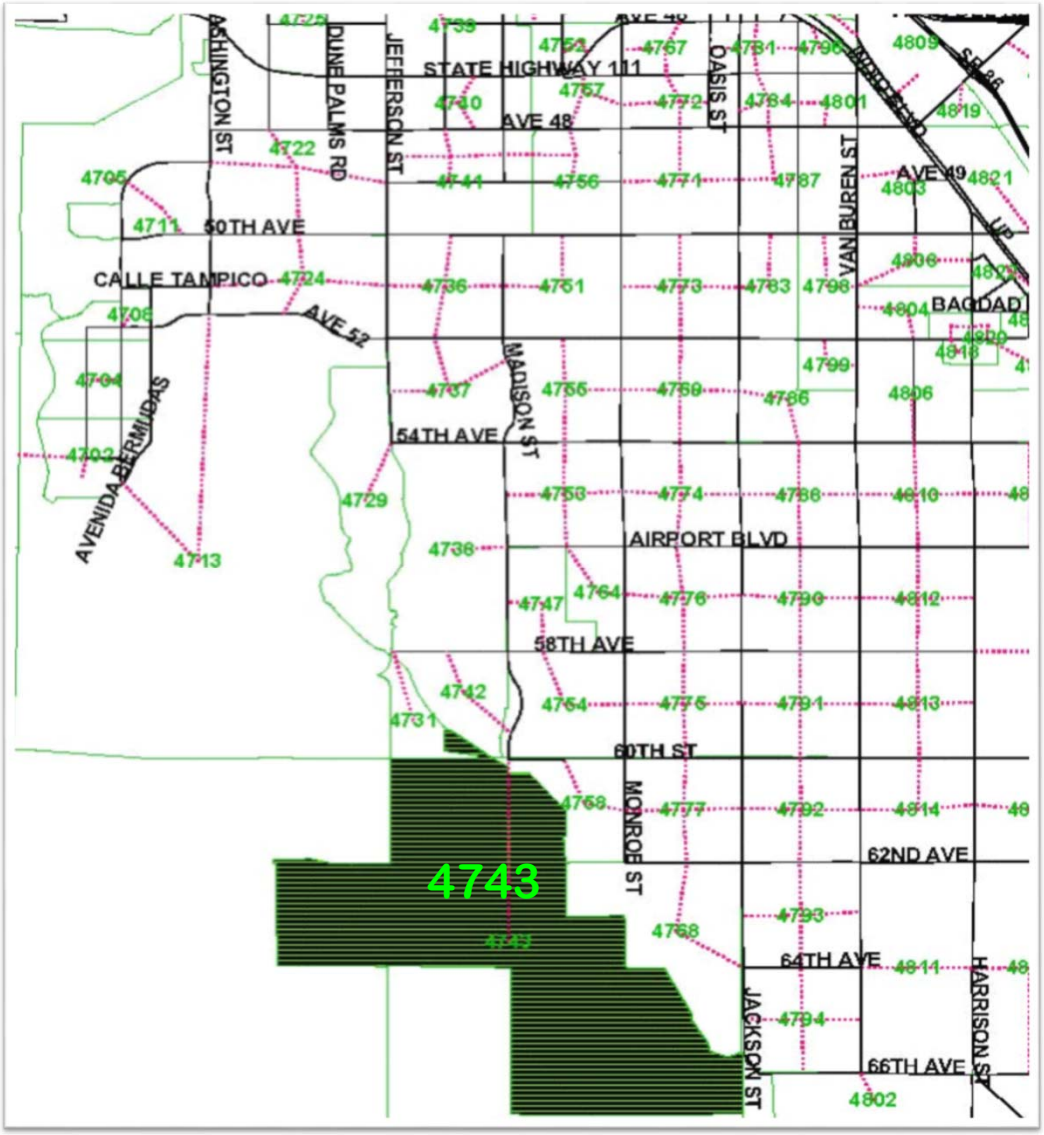
Trip Length	
	Base Year (2012) TAZ 4743
Trip Length Total	**16.80** [8]

SED[9]

	Base Year (2012) TAZ 4743
Pop	427
Emp	117
SP	544

SUMMARY

TAZ 4743 - No Project 2012	
OD VMT/SP[10]	**PA HB VMT/POP**[11]
303.43	21.26



[1] OD = Origin-Destination
[2] Vehicle Flow OD = Automobiles + Trucks
[3] Trip Length = VMT OD Total/Vehicle Flow OD Total
[4] PA = Production-Attraction
[5] HB = Home-Based
[6] 2012 home-based vehicle trips generated by TAZ 4742 based upon RIVTAM
[7] 2012 home-based vehicle miles traveled generated by TAZ 4742 based upon RIVTAM
[8] Trip Length = VMT PA Total/Vehicle Flow PA Total
[9] SED = Socio-Economic Data
[10] OD VMT/SP = Total Origin-destination vehicle miles traveled per service population
[11] PA HB VMT/POP = Total production-attraction vehicle miles traveled per resident

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ATTACHMENT B
PROJECT TRIP GENERATION

TABLE 5-1: PROJECT PHASE 3 (2031) TRIP GENERATION SUMMARY

Trip Generation Rates[1]									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
Single Family Detached	210	758 DU	0.19	0.55	0.74	0.62	0.37	0.99	9.44
Multifamily Housing (Low-Rise)	220	442 DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Hotel	310	100 RM	0.36	0.26	0.62	0.36	0.37	0.73	12.23
Golf Course	430	12 HOLES	1.39	0.37	1.76	1.54	1.37	2.91	30.38

Trip Generation Results									
			AM Peak Hour			PM Peak Hour			
Land Use	ITE LU Code	Quantity[2]	In	Out	Total	In	Out	Total	Daily
Single Family Detached	210	758 DU	144	417	561	470	280	750	7,156
Multifamily Housing (Low-Rise)	220	442 DU	49	155	204	155	93	248	3,235
Internal to Hotel / Golf			*(6)*	*(12)*	*(18)*	*(12)*	*(12)*	*(24)*	*(256)*
Residential External Trips			187	560	747	613	361	974	10,135
Hotel	310	100 RM	36	26	62	36	37	73	1,223
Internal to Residential / Golf			*(5)*	*(4)*	*(9)*	*(5)*	*(6)*	*(11)*	*(256)*
Hotel External Trips			31	22	53	31	31	62	967
Golf Course	430	12 HOLES	17	4	21	18	16	34	365
Internal to Residential / Resort			*(7)*	*(2)*	*(9)*	*(7)*	*(6)*	*(13)*	*(146)*
Golf Course External Trips			10	2	12	11	10	21	219
Project Subtotal			246	602	848	679	426	1,105	11,979
Internal Capture Subtotal			*(18)*	*(18)*	*(36)*	*(24)*	*(24)*	*(48)*	*(658)*
Phase 3 (2031) Project Total External Trips			**228**	**584**	**812**	**655**	**402**	**1,057**	**11,321**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition (2017).

[2] DU = Dwelling Unit; RM = Occupied Room

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