Appendix D
VMT Analysis
(Available for review at City Hall)

MEMORANDUM

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DATE: June 24, 2024
TO: Rob Eres, Nexus Development Corporation
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 15147-06 VMT

PALM SPRINGS HOTEL & RESIDENCES VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for Palm Springs Hotel & Residences (**Project**), which is located on the southeast corner of N. Calle El Segundo and E. Andreas Road, in the City of Palm Springs.

PROJECT OVERVIEW

The site is currently an improved (paved and striped) parking lot which is utilized by the City for public parking (that operates under a license agreement). The proposed Project consists of redeveloping the site to include a nine-story resort hotel with residences and a 6,040 square foot restaurant. The hotel consists of 125 rooms with 132 branded residential condo units. A site plan is provided in 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, the City of Palm Springs adopted analytical procedures, screening tools, and impact thresholds for VMT, which are documented in their adopted City of Palm Springs Transportation Impact Analyses Guidelines for Vehicle Miles Traveled And Level of Service Assessment (July 2020) (**City Guidelines**) (1). The adopted City Guidelines have been used to prepare this analysis.

VMT SCREENING

City Guidelines identifies that a project may be determined to have a non-significant transportation impact if it meets one or more VMT screening criteria. Each of the screening criteria 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 ANALYSIS

Screening Steps	Description	Result
1. Transit Priority (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.
2. Low VMT Area Screening	Projects located within a low VMT generating zone that 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 are presumed to have a less than significant impact on VMT. A low VMT area is defined as an individual traffic analysis zone (TAZ) where total daily Origin/Destination VMT per service population is lower than the City average total daily Origin/Destination VMT per service population.	Does not meet.
3. Project Type Screening	Local-Serving Retail under 50,000 square feet, Local Essential Services, and projects generating less than 110 daily vehicle trips are presumed to have a less than significant impact on VMT.	Met for leasable restaurant space.

As shown in Table 1, the Project intends to develop a leasable restaurant space that is 6,040 square feet, which is below the 50,000 square feet screening threshold. The remining Project components (i.e., resort hotel and residential condo units) were not found to meet eligible screening criteria and consistent with the City Guidelines a project level VMT analysis has been prepared.

VMT ANALYSIS

VMT MODELING

The City Guidelines identifies the Riverside County Transportation Model commonly referred to as RIVCOM as the appropriate tool for conducting VMT analysis for land use projects in the City of Palm Springs, as it considers interaction between different land uses based on socio-economic data, such as population, households, and employment. The RIVCOM model assumes datasets consistent with the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) and although the model covers the entire SCAG region, Riverside County is the area of focus so model data is more disaggregated within the County.

VMT METRIC AND SIGNIFICANCE THRESHOLD

City Guidelines note that the VMT analysis should include 'project generated VMT' and 'project effect on VMT' estimates for the Project TAZ under the following traffic scenarios:

- Baseline conditions
- Baseline plus project
- Cumulative no project
- Cumulative plus project

City Guidelines identifies **VMT per service population** as the transportation efficiency metric to be compared to the **City of Palm Springs General Plan Buildout VMT average**. More specifically, City Guidelines identifies the following impact thresholds for project level VMT analyses:

1. The baseline project generated VMT per service population exceeds the City of Palm Springs General Plan Buildout VMT per service population, or
2. The cumulative project generated VMT per service population exceeds the City of Palm Springs General Plan Buildout VMT per service population.

To make an impact determination, the City of Palm Springs' average VMT per service population was calculated using the RIVCOM model for the General Plan Buildout scenario. Table 2 presents the resulting City of Palm Springs General Plan Buildout VMT per service population.

TABLE 2: CITY OF PALM SPRINGS VMT PER SERVICE POPULATION

	General Plan Buildout
Service Population	103,440
VMT	3,790,685
VMT per Service Population	36.7

As shown in Table 3, the City of Palm Springs' General Plan Buildout VMT per service population has been calculated as **36.7**.

In addition, the City Guidelines the project's effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:

1. The baseline link-level boundary VMT per service population within the City boundary to increase under the plus project condition compared to the no project condition, or

2. The cumulative link-level boundary VMT per service population within the City boundary to increase under the plus project condition compared to the no project condition.

PROJECT LAND USE CONVERSION

In order to evaluate Project generated VMT, standard land use information such as building size must first be converted into a RIVCOM compatible dataset. The RIVCOM model utilizes socio-economic data (SED) (e.g., households, population and employment) for the purposes of vehicle trip estimation. Residential land use conversion factors were derived from the City of Palm Springs General Plan Housing Element. The Resort Hotel employment factors were derived from Institute of Transportation Engineers (ITE) trip rates. Table 3 summarizes land use information converted into SED inputs used within RIVCOM.

TABLE 3: SED INPUTS

Land Use	Conversion Factor	SED Input
Residential[1]	1.93 Person per Household	255 people
Restaurant[2]	500 employees per SF[4]	12 employees
Resort Hotel[3]	2.46 employee per Room	308 employees

[1]City of Palm Springs General Plan Housing Element
[2]Riverside County General Plan Appendix E-2
[3]ITE Trip Generation Trips per employee
[4]SF refers to square feet

PROJECT VMT ESTIMATES

PROJECT GENERATED VMT

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 (i.e., TAZ or group of TAZ's) see Attachment B for Project TAZ location. The OD method accounts for all trips (i.e., both passenger car and truck) and trip purposes (i.e., total VMT) and therefore provides a more complete estimate of VMT. Total VMT is then divided by the Project's service population (population and employment) to derive the efficiency metric VMT per service population.

Table 3 presents Project generated OD VMT and the resulting OD VMT per service population for both baseline (2023) and cumulative (2045) conditions. As shown in Table 4, the Project would generate OD VMT per service population above the City's adopted impact threshold for the baseline condition and would not exceed the City's adopted impact threshold in the cumulative conditions. The Project results in a significant VMT impact.

TABLE 4: PROJECT VMT PER SERVICE POPULATION

	Baseline	Cumulative
Service Population	575	575
OD VMT	21,428	21,119
OD VMT per Service Population	37.3	36.7
City Threshold	36.7	36.7
Above City Threshold	+1.6%	0.0%
Potentially Significant?	Yes	No

PROJECT EFFECT ON VMT

The City Guidelines state that the VMT analysis should also include an evaluation of a project's effect on VMT, which derived using the Boundary 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 Palm Springs was used as the boundary for this assessment.

Table 5 presents boundary VMT and boundary VMT per service population estimates for the baseline and cumulative conditions.

TABLE 5: BOUNDARY VMT

	Baseline Boundary		Cumulative Boundary	
Scenario	No Project	With Project	No Project	With Project
Service Population	80,196	80,775	103,440	104,011
Boundary VMT	845,454	850,369	1,131,398	1,135,729
VMT per Service Population	10.5	10.5	10.9	10.9
Change in VMT per Service Population	0.0		0.0	

The Project's cumulative effect on VMT is considered less than significant as there was no boundary VMT per service population increase within the City Boundary for the No Project and the With Project scenario. The Project's cumulative boundary results indicate that the efficiency of travel does not change on the roadway network with the proposed Project. The Project's effect on VMT is less than significant.

POTENTIAL VMT REDUCTION STRATEGIES

In the baseline condition, the Project's resort hotel and residential component generated VMT per service population would exceed the City's impact threshold. The Project would need to reduce its VMT impact by 1.5%[1] to achieve a finding of less than significant in the baseline condition. Based on the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (CAPCOA, 2021) (**Handbook**) the following project design features has the potential to reduce VMT:

T-7 Commute Trip Reduction Marketing

The Project will include a marketing strategy to promote the project site employer's CTR program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT. The following features (or similar alternatives) of the marketing strategy are essential for effectiveness.

- Onsite or online commuter information services.
- Employee transportation coordinators.
- Onsite or online transit pass sales.
- Guaranteed ride home service.

[1] $(21{,}428_{\text{Project VMT}} - (36.7*575)_{\text{Threshold VMT}}) / 21{,}428_{\text{Project VMT}} \times 100 = 1.5\%$

TABLE 6: VMT CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project/site employee commute VMT	0-4.0	%	calculated
User Inputs				
B	Percent of employees eligible for program	0-100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in employee commute vehicle trips	-4	%	TRB 2010
D	Adjustment from vehicle trips to VMT	1	unitless	assumed

$$A = B \times C \times D$$

The Project will provide tenant's employees material and online resources as a means to promote the commute trip reduction program. As calculated for the Project, with proper implementation and 90%[2] of the Project's employees eligible, this design feature is expected to reduce VMT by 3.6%.

T-10 End-of-Trip Bicycle Facilities

Measure T-10 Provide End-of-Trip Bicycle Facilities is listed in the Handbook as available to projects in a suburban setting. As described in the Handbook, "the measure will install and maintain end-of-trip facilities for employee, resident, and guest use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby reducing VMT and GHG emissions."[3] The Fact Sheet for T-10 Provide End-of-Trip Bicycle Facilities was utilized to calculate the Project's potential VMT reduction.

TABLE 8: T-10 CALCULATION VARIABLES

ID	Variable	Value	Unit	Source
A	Percent reduction in GHG emissions from project/site employee commute VMT	0.1-4.4	%	calculated
User Inputs				
	None			
Constants, Assumptions, and Available Defaults				
B	Bike mode adjustment factor	1.78 or 4.86[1]	unitless	Buehler 2012
C	Existing bicycle trip length for all trips in region	2.2	miles	FHWA 2017a
D	Existing vehicle trip length for all trips in region	11.7	miles	FHWA 2017a
E	Existing bicycle mode share for work trips in region	0.4	%	FHWA 2017b
F	Existing vehicle mode share for work trips in region	95.3	%	FHWA 2017b

[1]The bike mode adjustment factor should be provided by the user based on type of bike facility. A study found that commuters with showers, lockers, and bike parking at work are associated with 4.86 times greater likelihood to commute by bicycle when compared to individuals without

[2] Employees who might not be able to participate could include those who work nighttime hours when transit and rideshare services are not available or employees who are required to drive to work as part of their job duties.

[3] Handbook, Page 133

any bicycle facilities at work. Individuals with bike parking, but no showers and lockers at the workplace, are associated with 1.78 times greater likelihood to cycle to work than those without trip-end facilities.

$$A = \frac{C \times \left(E - (B \times E)\right)}{D \times F}$$

The Project will include building elements for bicycle trip end facilities (i.e., parking) for commuters that choose to bicycle as a mode of travel (See Attachment A). This will promote an alternative mode choice of commuting for employees. As calculated, the Project will reduce VMT by 0.1%.

UNBUNDLED HOTEL GUEST PARKING

Although not specified in the Handbook as quantifiable VMT reduction, all guests of the hotel will be required to self-park or valet park at a currently undetermined cost. This will have an inducive VMT reducing effect. On the assumption that parking costs are passed through to the vehicle drivers utilizing the parking spaces, this design feature results in decreased single occupancy vehicles visiting the Project and encourages alternative modes of transport while arriving and on the Project site for the duration of their stay.

TOTAL VMT REDUCTIONS

The Handbook states that effectiveness levels for multiple measures within a subsector may be multiplied to determine a combined effectiveness level. Because the combination of measures and independence of measures are complicated, the Handbook recommends that measure reductions within a subsector be multiplied unless the user can provide substantial evidence indicating that emission reductions are independent of one another and that they should therefore be added. Each subsector has a maximum allowable reduction. These were derived by combining the maximum allowable reduction of each individual non–mutually-exclusive measure within the subsector. As all the Project Design features above fall under the Subsector of "Trip Reduction Programs", the Handbook states that the "Trip Reduction Subsector" has a maximum reduction of 45%. Therefore, a project cannot exceed the maximum allowable reduction. The Handbook provides the following equation for combining Subsector reductions:

$$Reduction_{Subsector} = 1 - [(1 - A) \times (1 - B) \times (1 - C) \dots]$$

Project's VMT reduction are as follows:

$$3.7\% = 1 - [(1 - 3.6\%) \times (1 - 0.1\%)]$$

As outlined through the VMT reduction calculations presented above, with the inclusion of the VMT mitigation measures the Project is estimated to reduce its VMT impact by 3.7%. The Project as evaluated exceeds the baseline City's impact threshold by 1.4%. With the inclusion of feasible VMT mitigation measures the Project would reduce its VMT impact below the City's VMT impact threshold and result in a less than significant VMT impact.

SUMMARY

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

- The Project was evaluated against VMT screening criteria as outlined in the City Guidelines. The Project's leasable restaurant component was found to meet the Project Type screening criteria and is presumed to have a less than significant impact on VMT.

- However, the remaining residential and hotel components did not meet any applicable screening criteria, and a project-level VMT analysis was performed.
- Project's resort hotel and residential component VMT was estimated for baseline and cumulative conditions. The results showed that the Project's baseline condition exceeds the City's VMT impact threshold by 1.5%, resulting in a significant impact.
- The Project's effect on VMT was found to remain unchanged in the With Project scenario under the baseline and cumulative conditions and results in a less than significant impact.
- With the implementation of a VMT-reducing project design features, the Project's resort hotel and residential component would reduce its VMT impact below the City's impact threshold, resulting in a less than significant transportation impact.

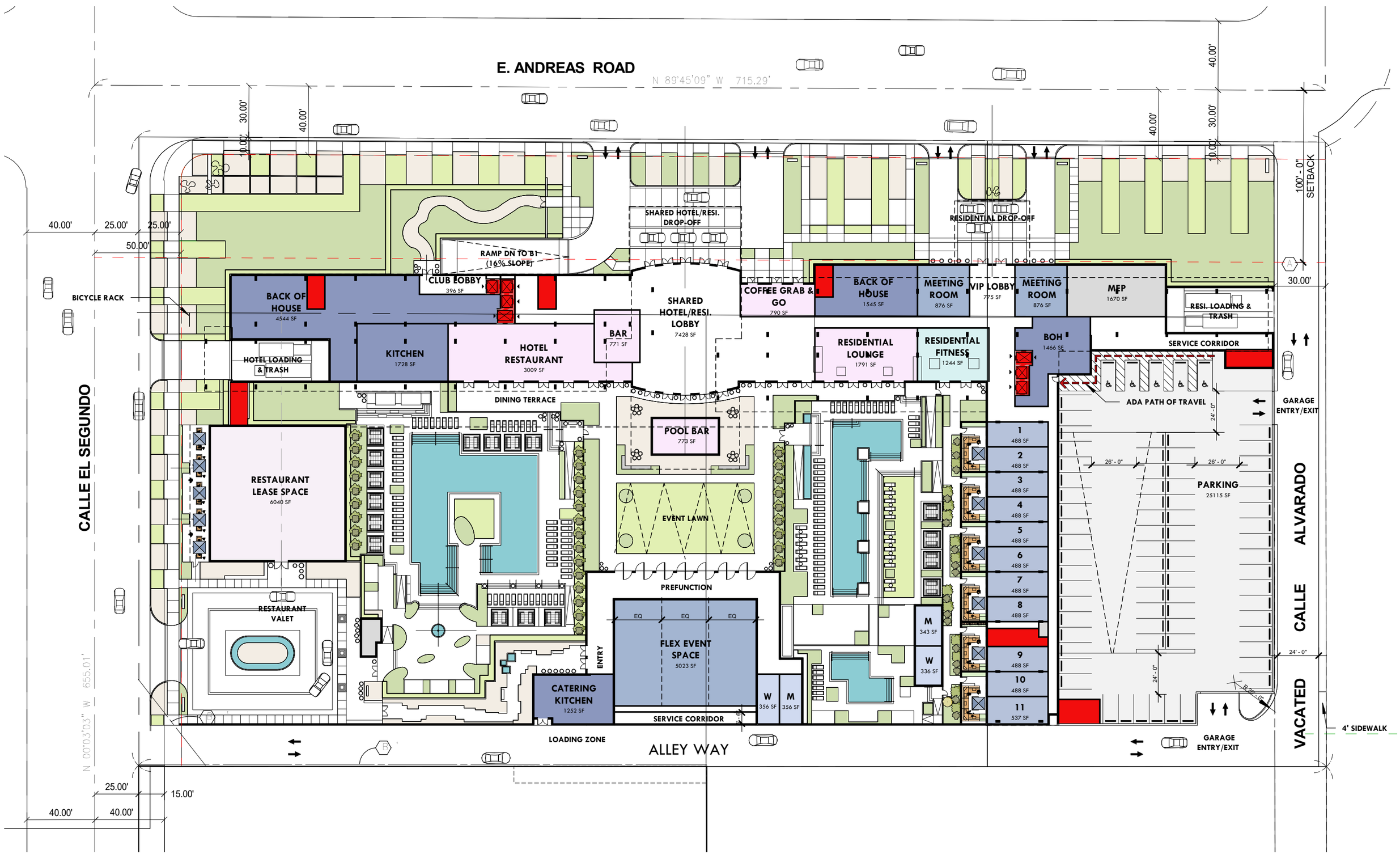
If you have any questions, please contact me directly at aso@urbanxroads.com.

REFERENCES

1. **City of Palm Springs.** *Transportation Impact Analysis Guidlines.* July 2020.

ATTCHMENT A

SITE PLAN



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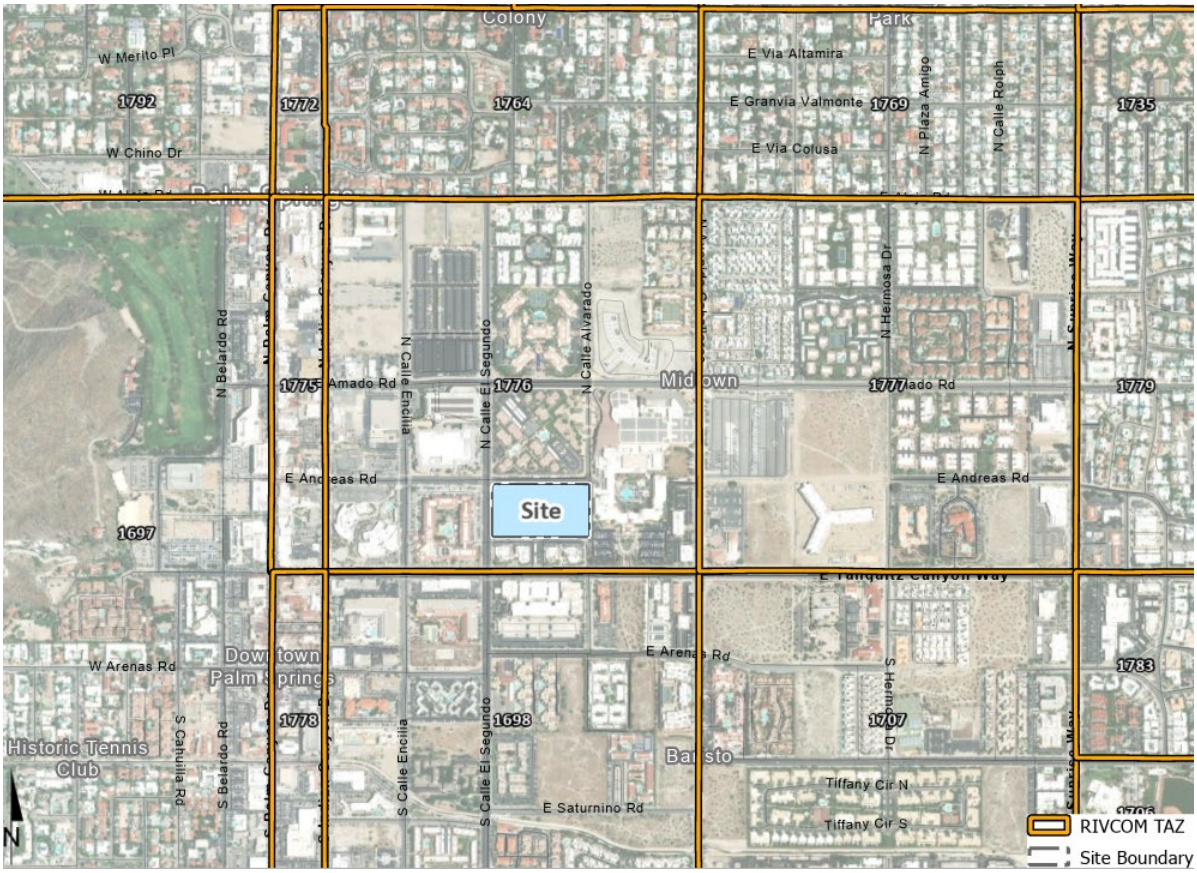
LEVEL 01
GROUND LEVEL FLOOR PLAN

0 25 50 FT

ATTACHMENT B
PROJECT TAZ LOCATION MAP


Colony
Park
W Merito Pl
1792
1772
1764
E Via Altamira
E Granvia Valmonte
1769
E Via Colusa
N Plaza Amigo
N Calle Roiph
1735
W Chino Dr
N Belardo Rd
1775
Amado Rd
N Calle Encilia
N Calle El Segundo
1776
N Calle Alvarado
Mid own
N Hermosa Dr
1777
lado Rd
1779
E Andreas Rd
Site
E Andreas Rd
1697
W Arenas Rd
Down town
Palm Springs
1778
1698
E Arena Rd
S Hermosa Dr
1707
1733
Historic Tennis Club
S Cahuilla Rd
S Belardo Rd
S Calle Encilia
S Calle El Segundo
Ba sto
Tiffany Cir N
E Saturnino Rd
Tiffany Cir S
N
RIVCOM TAZ
Site Boundary

ATTACHMENT C
RIVCOM OUTPUTS

TABLE B-1: 2018 RIVCOM OUTPUTS

TAZ	1776
Daily_Home-Based (incl. IEHB) Prod VMT	881.472813
Daily_HBW (incl. EIHBW) Attr VMT	12434.41812
Daily_Total Auto OD From VMT	9869.503632
Daily_Total Auto OD To VMT	10801.36015
Daily_Total Auto OD Intra VMT	44.89606521
Daily_Total Truck OD From VMT	377.6413453
Daily_Total Truck OD To VMT	380.4286357
Daily_Total Truck OD Intra VMT	0.166734981
Daily_Total OD From VMT	10247.14449
Daily_Total OD To VMT	11181.7908
Daily_Total OD Intra VMT	45.06280697
Daily_Total_TripLen	10.482004
Population	255
Employment	320
Enrollment	0

TABLE B-2: 2045 RIVCOM OUTPUTS

TAZ	1776
Daily_Home-Based (incl. IEHB) Prod VMT	2699.944038
Daily_HBW (incl. EIHBW) Attr VMT	11020.96278
Daily_Total Auto OD From VMT	8680.098388
Daily_Total Auto OD To VMT	9536.5866
Daily_Total Auto OD Intra VMT	41.34173139
Daily_Total Truck OD From VMT	326.4689618
Daily_Total Truck OD To VMT	329.2040651
Daily_Total Truck OD Intra VMT	0.2567882
Daily_Total OD From VMT	10027.79873
Daily_Total OD To VMT	11091.26864
Daily_Total OD Intra VMT	41.59852149
Daily_Total_TripLen	10.3296
Population	255
Employment	320
Enrollment	0