

JANUARY 28, 2026

CITY OF LAGUNA HILLS, CA
24035 El Toro Road
Laguna Hills, CA 92653

SUBJECT: TOLL BROTHERS TOWNHOME PROJECT TRIP GENERATION AND VEHICLE MILES TRAVELED (VMT) SCREENING ANALYSIS AND GATE QUEUEING STUDY, CITY OF LAGUNA HILLS

INTRODUCTION

RK ENGINEERING GROUP, INC. (RK) is pleased to provide this Trip Generation and Vehicle Miles Traveled (VMT) Screening Analysis for the proposed Toll Brothers Laguna Hills Townhome Project (hereinafter referred to as “project”).

The purpose of this study is to utilize the *City of Laguna Hills Vehicle Miles Traveled Analysis Guidelines under the California Environmental Quality Act General Plan Development Review Traffic Study Guidelines, August 2021*, (hereinafter referred to as “Traffic Study Guidelines”) to determine if the project would cause a significant impact to VMT and level of service (LOS) pursuant to the California Environmental Quality Act (CEQA) and the City of Laguna Hills roadway performance standards, respectively. This analysis utilizes the screening criteria established in the Laguna Hills Traffic Study Guidelines.

This report also reviews the proposed gated entry design to help ensure adequate vehicle queueing and circulation is accommodated.

PROJECT DESCRIPTION

The proposed project site will be constructed on the 2.43-acre parcel at 23161 Mill Creek Drive (APN 588-142-07) in the City of Laguna Hills, Orange County, California (Project Site). The project site is located on the west side of Mill Creek Drive, approximately 0.27 miles south of the Lake Forest Drive, Mill Creek Drive, and Scientific Intersection. The project site is currently developed with a two-story office building, surface parking lot, and associated landscaping and pavement. **Exhibit A** shows the location map of the proposed project.

The proposed project consists of the demolition of the existing office building and associated surface parking lot and landscaping to construct 36 single-family-attached condominium residential units, parking, roadways, and associated infrastructure at a density of 14.8 dwelling units per acre (du/ac). Two units will be deed-restricted for very low-income households, while the remaining 34 units are designated as above-moderate income.

Access to the project is proposed via one (1) full-access gated driveway along Mill Creek Drive.

Exhibit A shows an aerial location map of the project site. **Exhibit B** shows the project’s proposed site plan.

TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation rates from the latest Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) are used to calculate the proposed project’s trip generation forecast. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

The project proposes to construct thirty-six (36) townhome dwelling units. The most appropriate trip rate for this land use is ITE Land Use 215: Single-Family Attached Housing. As described in the ITE Trip Generation Manual, Single-Family Attached Housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space. This land use includes duplexes (defined as a single structure with two distinct dwelling units, typically joined side-by-side and each with at least one outside entrance) and townhouses/rowhouses (defined as a single structure with three or more distinct dwelling units, joined side-by-side in a row and each with an outside entrance).

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis of the proposed project land use and the proposed project trip generation forecasts based on those ITE trip generation rates.

Table 1 | Project Trip Generation Rates & Forecast¹

Land Use (ITE Code)	Quantity	Units ¹	Weekday						Daily
			AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
ITE Trip Generation Rate									
Single-Family Attached Housing (215)	--	DU	25%	75%	0.48	59%	41%	0.57	7.20
Trip Generation Forecast									
Single-Family Attached Housing (215)	36	DU	4	13	17	12	9	21	259

¹ Source: ITE Trip Generation Manual (11th Edition, 2021).

² DU = Dwelling Unit

As shown in Table 1, based on the ITE trip generation rates, the proposed project is forecast to generate approximately 259 daily trips, which include approximately 17 AM peak hour trips and 21 PM peak hour trips.

As specified in the Laguna Hills Traffic Study Guidelines, a traffic impact analysis, which includes LOS analysis for non-CEQA purposes, shall be required for a proposed project if a project adds 50 or more peak hour trips or 500 or more trip-ends per day. Based on the published rates from the latest ITE Manual, the proposed project is not expected to exceed 50 peak hour trips or 500 daily trips (i.e., 259 daily trips, 17 AM peak hour trips, and 21 PM peak hour trips). Therefore, the proposed project is not required to prepare a traffic impact analysis for non-CEQA purposes and is not expected to result in any significant adverse impacts on the operations of the roadway network and intersections.

VEHICLE MILES TRAVELED (VMT) SCREENING

The Laguna Hills Traffic Study Guidelines provides recommendations in the form of thresholds of significance and methodologies for identifying VMT related impacts. The first step in evaluating a land use project's potential VMT impact is to perform an initial screening assessment utilizing the City of Laguna Hills VMT Screening Form for Land Use Projects (VMT Screening Form).

Projects that satisfy at least one of the screening requirements may be presumed to result in a less than significant impact to VMT. The following five (5) types of screening criteria are applicable:

- 100% Affordable Housing
- Located within ½ mile of Qualifying Transit
- Local Serving Land Use
- Low VMT Area
- Net daily Trips Less than 500 ADT

Appendix A located at the end of this letter report contains the completed City of Laguna Hills VMT Screening Form.

VMT Screening Type 1: 100% Affordable Housing - Not Satisfied

Per the City of Laguna Hills VMT guidelines, if a project consists of 100% affordable housing, then the presumption can be made that it will have a less than significant impact on VMT. The project does not consist of 100% affordable housing and as a result, VMT Screening Criteria Type 1 is not met.

VMT Screening Type 2: Located within ½ mile of Qualifying Transit - Not Satisfied

Per the City of Laguna Hills VMT guidelines, lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within one half (½) mile of an existing major transit stop or an existing stop along a high-quality transit corridor will have a less than significant impact on VMT.

Upon further review, the project is not located within one half mile of qualifying transit (e.g., major transit stop or high-quality transit corridor). As a result, VMT Screening Criteria Type 2 is not met.

VMT Screening Type 3: Local Serving Land Use - Not Satisfied

Per the City of Laguna Hills VMT guidelines, local serving land uses provide goods and services to the local community. Local serving land uses offer more opportunities for residents and employees to shop, dine and obtain services closer to home and work. Local serving uses can also include community resources that may otherwise be located outside of the local area. By improving destination proximity, local serving uses lead to shortened trip lengths and reduced VMT. Therefore, local serving uses may be presumed to have a less than significant impact on VMT.

Per Table 1: List of Local Serving Uses from the City of Laguna Hills VMT guidelines, the project is not considered a local serving land use. As a result, VMT Screening Criteria Type 3 is not met.

VMT Screening Type 4: Low VMT Area Screening - Satisfied

Per the City of Laguna Hills VMT guidelines, projects located in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. If a project is located in a Traffic Analysis Zone (TAZ) with VMT per capita or VMT per employee that is less than or equal to the citywide average, than the project is considered to be located in a low VMT area and can be presumed to have a less than significant impact on VMT. The project is consistent with the baseline land use assumptions for TAZ 1504. This includes a total of 982 households that exhibit similar travel demand characteristics as the proposed project. Therefore, it is reasonable to use the baseline statistics for estimating the project’s VMT.

As shown in OCTAM TAZ Map (Appendix A), the project is located within OCTAM TAZ 1504.

Table 2 summarizes the results of the low VMT area screening assessment.

Table 2 | VMT Screening Type 4: Low VMT Area Screening Assessment^{1,2}

OCTAM TAZ	VMT/Service Population
1504	12.9
City of Laguna Hills VMT Threshold of Significance	16.1
Potentially Significant Impact? (Yes/No)	No

¹ Source: Orange County Transportation Analysis Model (OCTAM)

OCTAM is the preferred traffic model for screening and analyzing VMT in the City of Laguna Hills. The project is located within OCTAM TAZ 1504 which has a baseline VMT per Capita of 12.9. Because the project’s TAZ VMT does not exceed the citywide average VMT/capita of 16.1, the project is considered to be located in a low VMT area and can be presumed to have a less than significant impact on VMT. As a result, VMT Screening Criteria Type 4 is met.

VMT Screening Type 5: Net Daily Trips Less Than 500 ADT - Satisfied

Per the City of Laguna Hills VMT guidelines, projects that generate less than 500 net average daily trips (ADT) would not cause a substantial increase in the total citywide or regional VMT and are therefore presumed to have a less than significant impact on VMT.

The City's 500 ADT screening threshold is founded on substantial, locally tailored evidence as documented in Appendix C of the Laguna Hills VMT Guidelines. The VMT Guidelines show that projects below the 500 ADT screening threshold do not measurably increase citywide VMT or GHG emissions. Thus, the City's screening threshold is consistent with CEQA Guidelines, which permit lead agencies to adopt thresholds of significance if those thresholds are supported by substantial evidence relevant to the agency's context.

Per Table 1 above, the project is forecast to generate approximately 259 daily trips. As a result, VMT Screening Criteria Type 5 is met.

Therefore, the proposed project is screened out based on VMT Screening Type 4: Low VMT Area Screening and VMT Screening Type 5: Net Daily Trips Less Than 500 ADT. As such, the proposed project may be presumed to have a less than significant VMT impact under CEQA. No further VMT analysis is required.

QUEUING ANALYSIS AT GATED DRIVEWAY

A queuing evaluation has been performed at the proposed gated access driveway. The purpose of this analysis is to determine whether adequate storage capacity is provided to allow vehicles to enter the project area without causing vehicles to spill back onto the public roadway (i.e., Mill Creek Drive). To analyze potential vehicle queues, RK utilized the following studies:

- *Entrance-Exit Design and Control for Major Parking Facilities*, prepared by Robert W. Crommelin, P.E., dated October 5, 1972.
- *Residential Electronic Gate Service Study (REGSS)*, prepared by RK Engineering Group Inc., dated July 22, 2016.

Exhibit C illustrates the storage length provided at the project access. As shown in Exhibit C, the storage length measured from the gate to the curb face is approximately 91 feet and the callbox is located approximately 65 feet from the curb face.

As also shown in Exhibit C, the width of the project access driveway lanes is approximately 21.5 feet at the start of the median and expands to approximately 30 feet with an area for vehicles to bypass the visitor lane which is designed in accordance with Orange County Standard Plan 1107.

The gate queuing for residents was measured from the gate itself (i.e., 91 feet), whereas gate queuing for visitors would be measured from the callbox (i.e., 65 feet). Assuming an average car length of 19 feet (i.e., 22 feet of total spacing per vehicle), the project access driveway is expected to accommodate approximately 4 vehicles within the resident lane, and approximately 2 vehicles within the visitor lane without spilling onto Mill Creek Drive.

Arrival Rate

As shown previously in Table 1, the maximum inbound project peak hour traffic is forecast to be 14 vehicles during the PM peak hour. RK utilized the resident vs. visitor traffic splits as sourced in the

Residential Electronic Gate Service Study (REGSS), dated July 22, 2016, prepared by RK Engineering Group Inc., to determine the arrival rate for both resident and visitor traffic. The REGSS is included in **Appendix B**.

Table 3 calculates the number of project trips entering the driveway by user type based on the project’s inbound trip generation and the resident vs. visitor traffic splits per the REGSS.

Table 3 | Crommelin Traffic Arrival Rate¹

User Type	Maximum Peak Hour Inbound Trip Generation ²	Observed Average Percent Split ^{3,4}	Crommelin Traffic Arrival Rate (Number of Vehicles per Hour)
Residents	12	79.52%	10
Visitors		20.48%	2

¹ *Source:* Entrance-Exit Design and Control for Major Parking Facilities, prepared by Robert W. Crommelin, P.E., dated October 1972

² *Source:* ITE Trip Generation Manual (11th Edition, 2021), referenced in Table 1.

³ Recommended gate service rate for combined user (Resident & Visitor) for a single-entry lane.

⁴ *Source:* Residential Electronic Gate Service Rate Study, dated July 22, 2016, prepared by RK Engineering Group Inc.

Per the REGSS, the observed entering PM peak hour traffic splits were 79.52% for residents and 20.48% for visitors. As shown in Table 3, based on the inbound trip generation and resident vs. visitor traffic splits per the REGSS, the arrival rates for residents and visitors are 10 vehicles per hour and 2 vehicles per hour, respectively.

Service Rate

Per the REGSS, the recommended service rates for two entry lanes utilized by residents and visitors are 220 vehicles per hour and 115 vehicles per hour, respectively.

Intensity Rate

The intensity rate is the ratio of the arrival rate to the service rate. Hence, the following intensity rates have been calculated per user type:

- Residents: [10 VPH / 220 VPH] = 0.05
- Visitors: [2 VPH / 115 VPH] = 0.02

Queue Findings

Exhibit D-1 and **Exhibit D-2** show the results of the gate stacking analysis utilizing the Crommelin methodology for residents and visitors, respectively, by plotting the previously calculated intensity rate on the Crommelin nomograph and identifying the corresponding number of vehicles in the reservoir space behind the service position. The 95th percentile confidence interval is the typical engineering design standard.

Table 4 summarizes the results of the gate stacking analysis utilizing the Crommelin methodology.

Table 4 | Gate Stacking Analysis Results

User Type	Crommelin Traffic Arrival Rate (Number of Vehicles per Hour) ¹	Crommelin Traffic Service Rate (Number of Vehicles per Hour) ²	Crommelin Traffic Intensity Rate	Anticipated Maximum Queue Behind Service Position (Vehicles) ³	Anticipated Maximum Queue Including Service Position (Vehicles) ⁴
Residents	10	220	0.05	1	2
Visitors	2	115	0.02	1	2

¹ Crommelin traffic arrival rate based on the project's trip generation and residential inbound trip distribution at ultimate condition.

² Recommended gate service rate for combined user (Resident & Visitor) for a single-entry lane.

Source: Residential Electronic Gate Service Rate Study, dated July 22, 2016, prepared by RK Engineering Group Inc.

³ Maximum Queue Behind Service Station Position estimated using the Crommelin graph (rounded up to the nearest vehicle).

⁴ An additional one vehicle is assumed to be in the service position.

As shown in Table 2, the 95th percentile vehicular queue for proposed driveway is forecast to be approximately two (2) vehicles during the peak hour for both the residential and visitor lane. As illustrated in Exhibit C, the proposed driveway provides a throat that can accommodate 4 vehicles in the resident lane and 2 vehicles in the visitor lane. As such, vehicles are not expected to spill back onto Mill Creek Drive.

VEHICLE TURNAROUND ASSESSMENT

Exhibit E-1 and **Exhibit E-2** illustrates the turnaround movement of a standard passenger vehicle and a standard unit (SU) delivery truck, respectively, per the American Association of State Highway and Transportation Officials (AASHTO) standards at the project access driveway.

As shown in Exhibit E-1, a passenger vehicle would be required to drive over the designated parking spaces to be able to maneuver the turnaround area from the callbox in one turn. However, the project is proposing to exceed the number of parking spaces required. As such, these designated parking spaces would likely not be utilized often allowing visitors that need to turnaround the ability to complete the maneuver in one turn. Additionally, if those parking spaces are occupied a passenger vehicle would only need to complete a three-point turn to turnaround.

As shown in Exhibit E-2, a delivery truck would be required to make a multi-point turn to maneuver the turnaround area without driving over the center callbox median or into the parking spaces. However, regardless of the parking spaces being occupied a delivery truck would be required to make a multi-point turn to maneuver a turnaround successfully. As such, even though the driveway is designed in accordance with Orange County Standard Plan 1107, a delivery truck would be obligated to make a multi-point turn due to the design of the drive-aisle.

CONCLUSIONS

RK Engineering Group, Inc. has completed this Trip Generation and Vehicle Miles Traveled (VMT) Screening Assessment for the proposed Toll Brothers Laguna Hills Townhome Project.

As specified in the Laguna Hills Traffic Study Guidelines, a detailed traffic impact analysis will be required if a project adds 50 or more peak hour trips or 500 or more trip-ends per day. The project is forecast to generate approximately 259 daily trips which consists of 17 AM peak hour trips and 21 PM peak hour trips. As such, the proposed project is not required to prepare a traffic impact analysis and is not expected to result in any significant adverse impacts on the operations of the roadway network and intersections.

Furthermore, consistent with Laguna Hills Traffic Study Guidelines, the proposed project is screened out from a full VMT analysis based on the VMT Screening Type 4: Low VMT Area Screening and VMT Screening Type 5: Net Daily Trips Less Than 500 ADT. As such, the proposed project may be presumed to have a less than significant impact on VMT under CEQA. Therefore, no additional VMT analysis is required.

Additionally, a queuing evaluation has been performed at the proposed gated access driveway utilizing the Crommelin methodology. As a result, the 95th percentile vehicular queue for proposed driveway is forecast to be approximately two (2) vehicles during the peak hour for both a residential and visitor lane and are not expected to spill back onto Mill Creek Drive. Furthermore, a turnaround assessment was performed for a passenger vehicle and a SU delivery truck, per the AASHTO standards at the project access driveway and it was found that both vehicles would be required to make a multi-point turn to complete the maneuver without driving into the parking spaces.

RK Engineering Group, Inc. appreciates this opportunity to work on this project. If you have any questions regarding this review, or need further clarification, please contact us at (949) 474-0809.

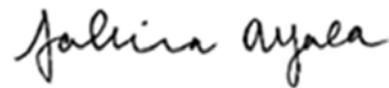
Sincerely,

RK ENGINEERING GROUP, INC.



Justin Tucker, P.E., T.E.
Principal

Attachments



Sabrina Ayala
Engineer I