TRAFFIC IMPACT STUDY FOR REDEVELOPMENT OF FORMER STEIN MART PROPERTY AT THE VILLAGE CENTER

CITY OF MISSION VIEJO, CALIFORNIA

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

EXECUTIVE SUMMARY

Background

- The Mission Viejo Village Center is located on the southeast corner of La Paz Road and Marguerite Parkway. Access to the shopping center is provided via three driveways on La Paz Road and five driveways on Marguerite Parkway. The Oso Creek Trail, located adjacent to the shopping center along the east edge of the site, can be accessed within the site near the eastern-most driveway on La Paz Road and at approximately 170 feet south of the intersection of Marguerite Parkway and Estanciero Drive, on the east side of the roadway.
- The City of Mission Viejo approved the Civic Core Area Master Plan in March of 2017, which identified the Village Center as the "heart" of the Civic Core Area. In December 2021, the City purchased a vacant site from the Kinstler Family Trust, previously occupied by Stein Mart, within the Village Center. The Vision Plan's chief aim is to redevelop the Mission Viejo Civic Core Area into a more walkable destination, with new recreational open space, community gathering places, supportive retail and new restaurants. This new recreational open space is to provide an attractive car-free zone connecting the redeveloped project site to the Oso Creek Trail, the Civic Center and Marguerite Parkway.
- The proposed project will transition the vacant 33,000 square feet Stein Mart building and land into the North Paseo recreational zone with community gathering spaces for various sized groups, weekly open-air markets, and 17,470 square feet of retail and restaurant uses including outdoor dining kiosks, as well as the Urban Alley. The Urban Alley is located along the western banks of the Oso Creek behind the current center. The Urban Alley will continue to provide a vehicular link, as well as an enhanced pedestrian link that will overlook the Oso Creek Trail and offer trail users new access points to the shopping center. Specifically, a new freight-sized elevator for both pedestrians and bicyclists will provide direct access between the Urban Alley and Oso Creek Trail. A new North Paseo pedestrian bridge will cross the Oso Creek to an event plaza with connection to the expanded Oso Creek Trail on the east side of the Creek.
- In addition, the project will include a "Special Event Barn" space as part of a future phase. This space will include accommodations for a variety of events along the Oso Creek Trail. The barn will be accessible via the Oso Creek Trail and the North Paseo pedestrian bridge, providing direct connectivity to the core area project buildings, the Oso Creek Trail on the western bank of the creek, the North Paseo, and parking. Some parking will be available on the east side of Oso Creek for Special Event space parking. Maintained and operated by the City and shared with Santa Margarita Water District, the barn would have the capability to host small-scale concerts, art exhibits, corporate meetings and other community-based gatherings. The City expects this facility to be for permitted use only, which would occur on a limited and scheduled basis.
- The buildout year for the purpose of the traffic analysis for the first phase of the project is anticipated to be 2025.

Project Study Area

- This traffic report includes the analysis of eight (8) study intersections and four (4) study roadway segments that are located near the project site. The study locations are listed below.

No.	Intersection	Control
1	La Paz Road & Marguerite Parkway	Signalized
2	La Paz Road & Village Center (West Driveway)	Unsignalized
3	La Paz Road & Village Center (East Driveway)	Signalized
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	Unsignalized
5	Marguerite Parkway & Civic Center/Village Center N	Signalized
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	Unsignalized
7	Marguerite Parkway & Village Center S	Signalized
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	Signalized

No.	Roadway Segment
1	Marguerite Parkway between Jeronimo Road and La Paz Road
2	La Paz Road between Marguerite Parkway and Spadra Lane
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive
4	Marguerite Parkway between La Paz Road and Estanciero Drive

Study Periods

- Due to the proximity of schools to the center, a comparison of traffic counts in the project area during the afternoon school peak and the AM and PM peak hours of the study showed that traffic volumes were highest during the PM peak hour of the study. Since the traffic volumes during the afternoon school peaks were lower than the traffic volumes during the PM peak hour, no additional traffic analysis was conducted during the afternoon school peak period. In addition, historical weekend traffic volumes were reviewed, which were also lower than weekday AM and PM peak hour volumes. Therefore, traffic impacts associated with the proposed project were analyzed at the study intersections for the weekday AM (7AM-9AM) and PM (4PM-6PM) peak-hour periods and at the study roadway segments for the weekday daily period.
- The traffic analysis was conducted for the following scenarios:
    - Existing Conditions
    - Existing With-Proposed Project Conditions
    - Opening Year (2025) Conditions (Existing + ambient growth + vacant land use traffic growth)
    - Opening Year (2025) With-Proposed Project Conditions

Traffic Impact Analysis

Proposed Project Trip Generation

- The proposed project would generate approximately 1,761 daily (2-way) trips, including 124 trips (69 inbound and 55 outbound) during the AM peak hour and 156 trips (95 inbound and 61 outbound) during the PM peak hour.

- Pass-by trip discounts are applicable when deriving the trip generation for the proposed project. These are trips that result in an interim stop at the project site during an existing or previously planned trip. **When considering pass-by trip discount, the proposed project would generate approximately 1,377 daily (2-way) trips including 124 trips (69 inbound and 55 outbound) during the AM peak hour and 89 trips (53 inbound and 36 outbound) during the PM peak hour.**

Traffic Impact Thresholds

- The City of Mission Viejo, for planning purposes, generally considers level-of-service (LOS) D to be the minimum acceptable conditions that should be maintained during the AM and PM peak hours for all intersections.
- For roadway segments, LOS D is the minimum performance standard that has been adopted for the study area circulation system by the City Mission Viejo, which adheres to the Orange County Highway Design Manual.

Existing (Present Day) Operational Traffic Conditions

- All of the study intersections operate at an acceptable level-of-service (i.e., LOS C or better) during the weekday AM and PM peak hours. In addition, all of the study roadway segments operate at an acceptable level-of-service (i.e., LOS D or better) under Existing conditions.

Existing (Present Day) Operational Traffic Conditions With Proposed Project

- The proposed Project **will not** significantly impact any of the study intersections or study roadway segments under this scenario when compared to the City's LOS standards and significant impact criteria. All of the study intersections are expected to operate at an acceptable level-of-service (i.e., LOS C or better) during the weekday AM and PM peak hours. In addition, all of the study roadway segments are forecast to operate an acceptable level-of-service (i.e., LOS D or better). To summarize, the proposed project does not adversely impact the LOS of the study intersections or study roadway segments during AM and PM peak hours.

Year 2025 Operational Traffic Conditions (Future Conditions, Without Proposed Project)

- This scenario analyzes the projected ambient traffic growth to Year 2025 and traffic related to the reoccupancy of any onsite vacancies.
- For year 2025 conditions, all study intersections are forecast to operate at an acceptable level-of-service (i.e., LOS D or better) during the weekday AM and PM peak hours.

Year 2025 Operational Traffic Conditions (Future Conditions, With Proposed Project)

- The proposed Project **will not** significantly impact any of the study intersections under this scenario when compared to the City's LOS standards and significant impact criteria. All of the study intersections are expected to operate at an acceptable level-of-service (i.e., LOS D or better) during the weekday AM and PM peak hours.

Roadway Segment Planning-Level Analysis

- A planning level analysis was performed of the study roadway segments to provide a high-level overview of the roadway operations utilizing broad assumptions. This analysis differs from the operational traffic analysis which analyzes the peak hour traffic and as such is considered much more accurate than the planning level analysis. The planning level analysis studies traffic over a 24-hour period and is considered less accurate and is typically used only as a general planning tool to assess long term general trends. Per OCTA's *Master Plan of Arterial Highway Guidelines*, "the level of precision inherent in planning analyses is typically lower than for operational analyses" and may not reflect actual roadway conditions. For example, the roadway analysis assumes a 4-lane facility for 24-hour traffic; however, the actual conditions have a higher capacity and reflect 4 through lanes, dual left-turn lanes, and dedicated right-turns at most of the signalized intersections along Marguerite Parkway. As shown in this report, all study area intersections operate at an acceptable LOS during both the AM and PM peak periods (both with and without the proposed project) – the most critical traffic periods of the day.

Year 2025 Planning Level Analysis, Without Proposed Project

- All roadway segments are forecast to operate at an acceptable level-of-service (i.e., LOS D or better), with the exception of Roadway Segments #1 (Marguerite Parkway between Jeronimo Road and La Paz Road) and #4 (Marguerite Parkway between La Paz Road and Estanciero Drive). These roadway segments are forecast to operate at LOS E over a 24-hour period.

Year 2025 Planning Level Analysis, With Proposed Project

- All roadway segments are forecast to operate at an acceptable level-of-service (i.e., LOS D or better), with the exception of Roadway Segments #1 (Marguerite Parkway between Jeronimo Road and La Paz Road) and #4 (Marguerite Parkway between La Paz Road and Estanciero Drive). These roadway segments are forecast to continue to operate at LOS E over a 24-hour period.

To summarize, both Roadway Segments #1 (Marguerite Parkway between Jeronimo Road and La Paz Road) and #4 (Marguerite Parkway between La Paz Road and Estanciero Drive) are forecast to operate at LOS E over a 24-hour period in Year 2025 under both scenarios "Without Proposed Project" and "With Proposed Project".

The City of Mission Viejo guidelines indicate various transportation strategies should be considered to mitigate traffic impacts. As the traffic impacts are minimal, it is expected that a traffic management approach will ease the flow of traffic along these segments, addressing any capacity issues.

To mitigate traffic impacts to these roadway segments of Marguerite Parkway "(Segment #1 (Marguerite Parkway between Jeronimo Road and La Paz Road) and Segment #4 (Marguerite Parkway between La Paz Road and Estanciero Drive)", the City can implement the following:

- Monitor and update traffic signal timing along the Marguerite Parkway corridor. With the City's recent awarded Marguerite Parkway Traffic Signal Synchronization Plan, the signal timing will be closely monitored and adjusted in conjunction with the Project's completion.

- Develop Transportation Demand Management (TDM) strategies, including bus programs (such as the MV Shuttle) and active transportation programs (additional pedestrian/bicyclist infrastructure) with the intent of reducing single-occupancy vehicles on the roadway.

- The Project location provides direct access to the Oso Creek Trail, which can assist with reducing the number of vehicle trips impacting the surrounding roadways (particularly Marguerite Parkway), therefore, providing additional wayfinding signage for pedestrians and bicyclists within the shopping center area can encourage the use of alternative transportation modes to and from the Project.

Site Access & On-Site Circulation

Queueing

- A vehicle queuing analysis was also conducted at the site access points that are expected to be used by traffic associated with the proposed project. The key site access points serving the proposed project are not anticipated to adversely impact the site-adjacent roadways including Marguerite Parkway and La Paz Road. Within the site, the main access point for the proposed project will be the Village Center N driveway just east of the Marguerite Parkway and Civic Center intersection. In order to prevent vehicle blockage within the site, it is recommended to install "Keep Clear" road markings at the internal intersection located immediately east of the Marguerite Parkway and Civic Center intersection.

Internal Circulation

- A site circulation analysis at 10 key internal intersections was conducted to determine if the proposed project including reconfiguration of the parking layout and drive aisles, due to the proposed paseo, would result in any traffic operational deficiencies within the site. It should be noted that due to the new paseo, the existing north-south drive aisle located immediately west (along the frontage of the former MART building) would be closed and a new drive aisle would be provided that would divert traffic within the site's parking area to align with the store frontage of CVS. The analysis showed that all of the key internal intersections would operate at an acceptable level-of-service and that the storage capacities at each approach of the 10 internal intersections would be adequate. Motorists entering and exiting the site would be able to do so without undue congestion.

Truck Turning Analysis

- In addition, based on the proposed site improvements and observed delivery truck circulation, a truck turning template analysis was conducted. The purpose of the analysis was to determine if adequate clearance will be provided for large trucks accessing the internal businesses at the Village Center, such as Big Lots, CVS, Trader Joe's, and the former Michael's building. The analysis findings show that SU-40 (39.5' length) and WB-40 (45.5' length) trucks can be accommodated within the internal circulation area with the proposed project.

Parking Analysis

A parking analysis was conducted using two methods of evaluation in relationship to the proposed site and building improvements at the Village Center. The initial analysis evaluates the parking in relation to the City-code requirements as outlined in the Mission Viejo Municipal Code, Chapter 9-25, *Off-Street Parking Standards*. Furthermore, given the mix of center tenancies, a secondary analysis referred to as a "Shared Parking Analysis" was prepared per the City's parking guidelines. The shared parking analysis evaluates the actual conditions by using observed "in the field" parking demand at the site in combination with the forecast parking demand for the Project and any on-site vacancies. Forecast parking demand is based on the Urban Land Institute (ULI) *Shared Parking Model*, an industry standard methodology. Shared parking analyses are typically conducted at most commercial centers in the City of Mission Viejo, as existing parking requirements are typically not met utilizing the City-Code parking rates.

City Code Parking Requirements - Existing Conditions

- The existing City-owned parcel has a total parking supply of 155 spaces. Per existing conditions and direct application of the above-referenced parking code as defined in the Municipal Code, the Stein Mart building (retail) and the adjoining tenants (restaurants and nail salon) require 192 spaces, a deficiency of 37 spaces within the City-owned parcel.
- Since parking is shared globally amongst all parcels, parking was also evaluated for the entire commercial center. The direct application of the above-referenced parking code as defined in the Municipal Code, the existing Village Center development results in a City-code parking requirement of 1,222 spaces. **With an existing parking supply of 1,147 number of spaces, the commercial center currently has a parking deficiency of 75 spaces per City Code.**

City Code Parking Requirements - With Proposed Project

- The creation of the paseo would result in loss of 47 spaces within the City-owned parcel, reducing the parking supply to 108 spaces. Per proposed conditions and direct application of the above-referenced parking code as defined in the Municipal Code, the Los Osos building (restaurant and retail) and the adjoining tenants (restaurants and nail salon) require 139 spaces, a deficiency of 31 spaces within the City-owned parcel.
- With direct application of the above-referenced parking code as defined in the Municipal Code, the future Village Center conditions result in a City-code parking requirement of 1,169 spaces. **With a parking supply of 1,100 spaces after completion of the proposed Project (loss of 47 existing parking spaces), a theoretical parking deficiency of 69 spaces is forecast per City Code.**
- The Proposed Project reduces the theoretical City Code parking requirement deficiency by 6 spaces.

Shared Parking Analysis (With Proposed Project)

- A shared parking analysis evaluated the existing observed parking demand at the Village Center in combination with the proposed Project and the re-occupancy of any on-site vacancies. As a conservative approach, a 10% contingency factor was applied to the forecast parking demands in order to account for daily variations. The overall projected peak parking demand during a Thursday, Friday, and Saturday totals 919 spaces, 989 spaces, and 952 spaces, respectively. **Based on the**

proposed parking supply of 1,100, a minimum surplus of 181 spaces, 111 spaces, and 148 spaces would result during the Thursday, Friday, and Saturday peak hours, respectively. Given these results, there is adequate parking on-site to accommodate the future conditions.

Parking Management Plan (With Proposed Project)

- The commercial center is projected to provide adequate parking for the proposed project conditions. However, the City understands the benefits of limiting the parking impacts since the parking is shared globally amongst all commercial center tenants. To mitigate any potential parking shortage at the Project site, the City plans to incorporate a parking management plan. These plans are commonly implemented locally at the Marguerite Aquatics Complex, Mission Viejo High School, The Shops at Mission Viejo, and the Norman P. Murray Community Center during peak uses. These Plans are comprised of several project features and potential parking strategies, such as on-site bicycle parking facilities, off-site parking facilities (i.e., Civic Center) with shuttle operations, and potential valet operations. The "Special Event Barn" will be parked using 43 onsite parking space for small group gatherings under 100 participants. When permits are issued for larger events, a parking management plan will be implemented using a shuttle service and remote parking at the adjacent City facilities. It should be noted there are 900-1,000 City owned parking spaces located within a reasonable walking distance or short shuttle service of the Project site.

Proposed Project Improvements:

- The proposed project intends to close existing gaps that separate the site amenities from Marguerite Parkway and Oso Creek Trail, as well as to help minimize the traffic impacts. Specifically, adaptable public space will be added as a part of the proposed project to provide a seamless, cohesive connection through the site that will link to active transportation travel corridors on both sides. The intent of these improvements is to encourage and increase pedestrian and bicyclist traffic, and to reduce the number of vehicle trips generated by the project. These proposed improvements are consistent with Transportation Demand Management (TDM) strategies provided by SCAG in its *Transportation Demand Management Strategic Plan*. The proposed project improvements include:

  - **West Side of Project Site:** A new paseo will provide a direct linkage for pedestrians and bicyclists to and from the Class II bike lanes and walkways on Marguerite Parkway, and to and from the City Hall and Library as well as nearby residential communities and schools. This paseo will allow pedestrians and bicyclists to access the site amenities without the need to navigate through the existing parking lot. The west link portion of the paseo will be improved with a walkway and Class I bike path. The east link portion of the paseo will be a pedestrianized zone; bicyclists would be dismounted in this area. A new elevator will be located in the outdoor plaza that directly connects to the Oso Creek Trail. This elevator will be accessible by both pedestrians and bicyclists.

  - **East Side of Project Site:** The proposed outdoor plaza and new East Bank Oso Creek Trail Link will be accessible for both pedestrians and bicyclists.

  - **Bicycle Parking:** As currently planned, the proposed project will also include between 60-100 bicycle parking spaces at the locations below. The exact numbers and locations of these facilities will be confirmed during the detailed design stage of the project.

- 20 bicycle parking facilities at the paseo
- 20 bicycle parking facilities at the Urban Alley
- 20 bicycle parking facilities on the Oso Creek Trail near the proposed project

- **Pedestrian Bridge Across Oso Creek:** A proposed future pedestrian bridge will extend from the urban alley across the Oso Creek to a new event plaza, which will also be a part of the proposed project. The bridge will link to the new Oso Creek Trail extension located on the east side of the Creek that spans to the southern trailhead at Marguerite Parkway.

- The benefits of this project include increased safety for active transportation users, reduced vehicle trips and vehicle miles travelled, reduced emissions, improved accessibility and connections to surrounding locations, and a more vibrant and inviting atmosphere that will benefit business activity. The above project improvements will enhance active transportation accessibility for the Village Center site, and thereby make active transportation a more attractive option for visitors.

With-Project Improvement Measures:

- With the above proposed project improvements, there will be seamless connectivity through the Project site between Marguerite Parkway and the Oso Creek Trail for both pedestrians and bicyclists. It is envisioned that these project improvements would make active transportation especially via bicycle to and from the proposed project, as well as the rest of the Village Center, an attractive alternative to traveling by car.

- The project improvement measures are expected to decrease vehicle trips due to an increase in bicycle trips to and from the Project site. An analysis was conducted to determine the reduction in the number of daily vehicle trips at the two roadway segments on Marguerite Parkway that would be required to reduce the traffic impacts at these locations to a less-than-significant level. It is determined that a reduction of approximately 144 daily vehicle trips would be required at Marguerite Parkway north of the Civic Center driveway. Assuming an average of 1.25 persons per vehicle, there would need to be an increase of approximately 180 daily bicycle trips. This magnitude of daily bicycle trips is estimated to be about 15 bicycle trips per hour (8 bicyclists traveling two-way per hour) on Marguerite Parkway north of the Civic Center driveway, based on bicycle ridership period from 7:00 AM to 7:00 PM.

- As the project improvements provide site accessibility enhancement at Marguerite Parkway and Oso Creek Trail that both extend in the north-south direction, it is anticipated that the increase in bicycle trips, and therefore a decrease in vehicle trips, would also occur to the north and south of the site. In addition, it should be noted that the hourly bicycle users (i.e., 8 bicyclists traveling two-way to/from the north and 4 bicyclists traveling two-way to/from the south) are considered reasonable given that Marguerite Parkway provides Class II bike lanes, the Oso Creek Trail is classified as a Class I bike path, and that the proposed project will provide seamless connectivity between the bike lanes and path via the Project site. **Taking into consideration the above, the project improvements are expected to reduce any potential traffic impacts to Roadway Segments #1 and #4 to a less-than-significant level.**

1.0 INTRODUCTION & ANALYSIS METHODOLOGY

1.1 INTRODUCTION

The Mission Viejo Village Center is a large shopping center located on the south side of La Paz Road and on the east side of Marguerite Parkway in the central portion of the City of Mission Viejo (hereinafter referred to as the 'City'). The Mission Viejo Civic Center, which contains City Hall and the Mission Viejo Library, is located on the west side of Marguerite Parkway across from the Mission Viejo Village Center. The Oso Creek Trail, a Class I shared-use path, is situated on the eastern edge of the Mission Viejo Village Center, connecting bicyclists and pedestrians to residential communities on the northern side of the city. **Figure 1.1** shows the location of the Village Center.

Given the shopping center's prime location in Mission Viejo, especially considering its proximity to the Oso Creek Trail, the City purchased a vacant site previously occupied by Stein Mart within the Mission Viejo Village Center as part of the City's Core Area Vision Plan, which was approved by Mission Viejo City Council in March 2017. The Plan's chief aim is to redevelop the Mission Viejo Civic Core Area into a more walkable destination, with new restaurants and shops, as well as a "paseo" walkway that would provide an attractive car-free zone connecting the redeveloped project site (at the currently vacant Stein Mart property) to Marguerite Parkway. A "pop-up paseo" was completed, which transitioned 28 parking spaces immediately north of the Village Center North driveway to a temporary walkable pedestrian avenue. The current "pop-up paseo" also contains several outdoor seating areas.

Phase 2 of the proposed project will transition the vacant Stein Mart building into 17,470 square feet (SF) of new retail and restaurants (including outdoor dining), and a 750 SF community room, as well as an urban alley on the eastern side adjacent the Oso Creek Trail. This urban alley would overlook the Oso Creek Trail and offer trail users new access points to the shopping center. A new large capacity elevator for both pedestrians and bicyclists will provide direct access between the urban alley and Oso Creek Trail. A new north paseo pedestrian/bicyclist bridge will also be provided, which crosses Oso Creek to the new event plaza on the east side of the Creek. The City of Mission Viejo is also planning to construct an 'Event Barn', which will be a proposed amenity located east of the Oso Creek and the Core Area project buildings. The barn would be accessible via a pedestrian bridge, providing direct connectivity to the core project buildings and the Oso Creek Trail. Maintained and operated by the City, the barn would have the capability to host small scale concerts, art exhibits, corporate meetings and other community-based gatherings. The barn will include an assembly area consisting of approximately 240 assembly seats or 120 tabled seats with additional outdoor space for expanded capacity events. The City expects this facility to be vacant with the exception of special events, which would occur on a limited basis. The project is anticipated to be completed by Year 2025. The proposed project site is illustrated in **Figure 1.2**.

The Mission Viejo Village Center is currently serviced by three driveways on La Paz Road and five driveways on Marguerite Parkway. Along La Paz Road, there is one driveway located at a signalized intersection across from the 25098-25108 Marguerite Parkway shopping center driveway to the north. The easternmost driveway on La Paz Road serves primarily the back-of-house facilities of the site. Along Marguerite Parkway, three of the driveways are signalized and the remaining two driveways are unsignalized. Adjacent to the east side of the Mission Viejo Village Center, the Oso Creek Trail can be accessed near the eastern-most driveway on La Paz Road and also about 170 feet south of the intersection of Marguerite Parkway and Estanciero Drive.

The purpose of this report is to assess the traffic impacts associated with the proposed project. The report

also describes the overall strategy of the proposed project to enhance the pedestrian and bicycle connectivity of the Mission Viejo Village Center to the surrounding areas. The sections below describe the traffic analysis methodology.

FIGURE 1.1 – VILLAGE CENTER LOCATION

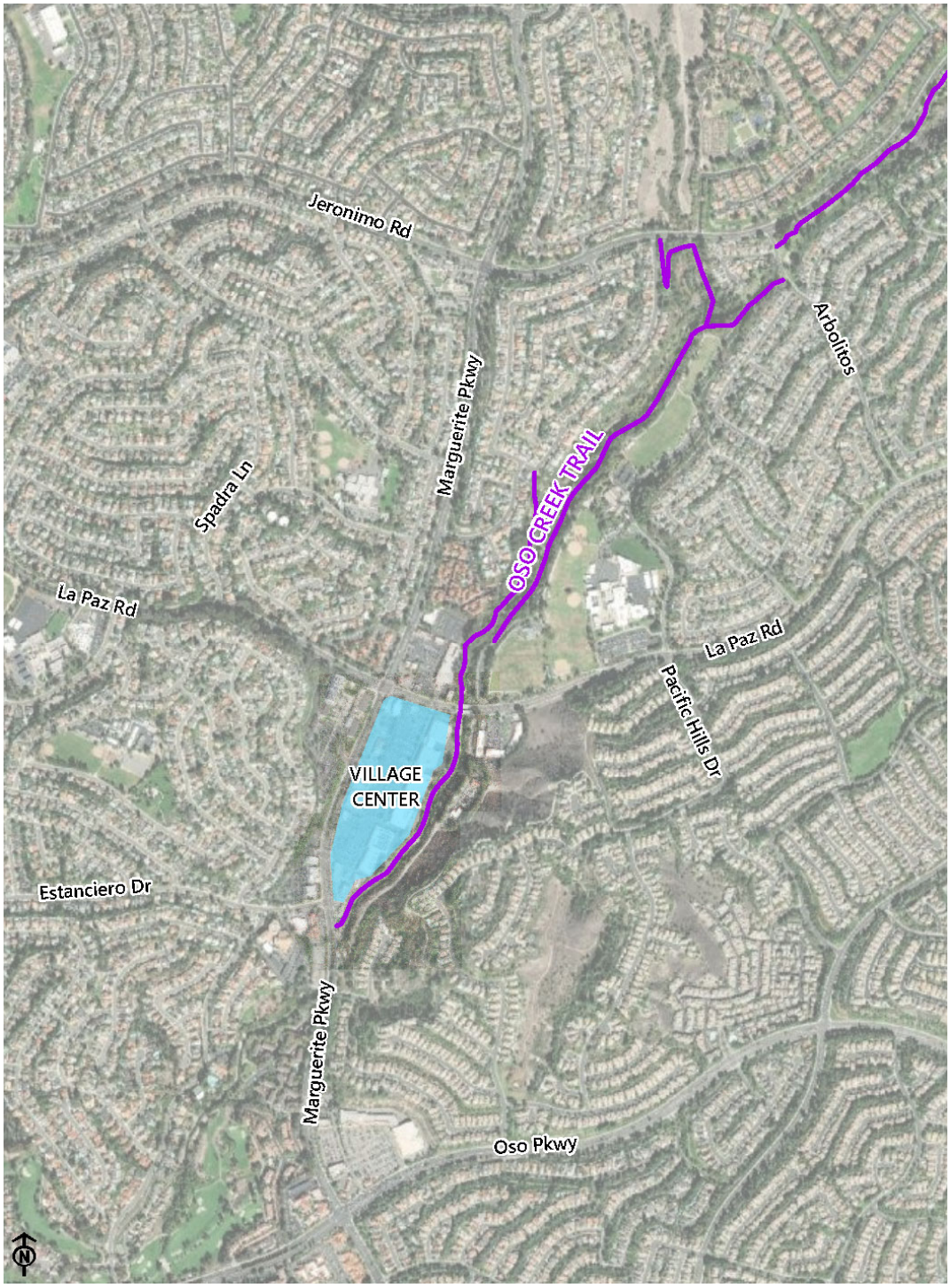
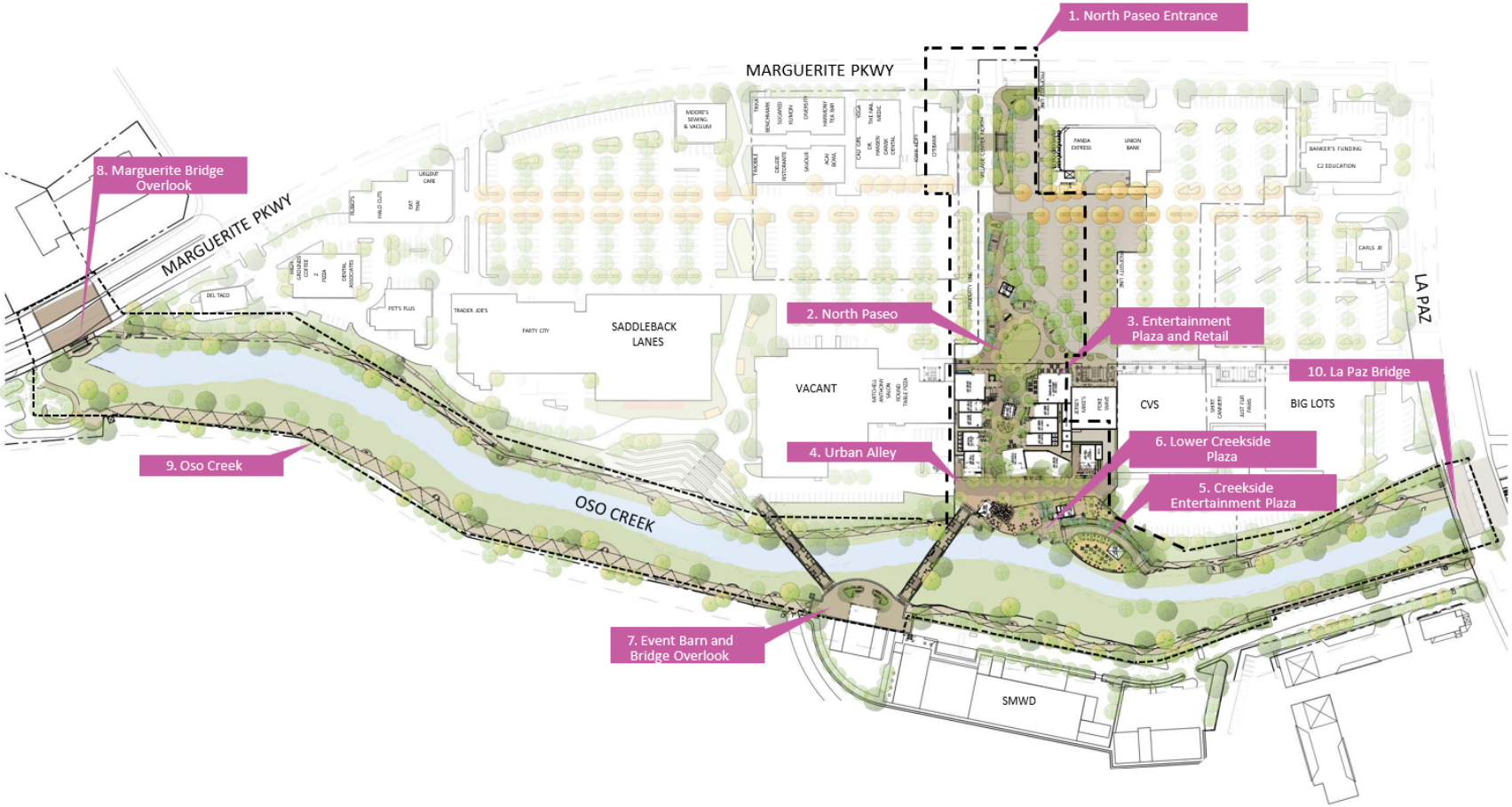


FIGURE 1.2 – PROJECT SITE PLAN



1.2 PROJECT STUDY AREA

The project study area, as defined through consultation with City staff, includes eight study intersections and four roadway segments, which are listed below in **Table 1.1** and **Table 1.2**, respectively.

TABLE 1.1 – STUDY INTERSECTIONS

No.	Intersection	Control
1	La Paz Road & Marguerite Parkway	Signalized
2	La Paz Road & Village Center (West Driveway)	Unsignalized
3	La Paz Road & Village Center (East Driveway)	Signalized
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	Unsignalized
5	Marguerite Parkway & Civic Center/Village Center N	Signalized
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	Unsignalized
7	Marguerite Parkway & Village Center S	Signalized
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	Signalized

TABLE 1.2 – STUDY ROADWAY SEGMENTS

No.	Roadway Segment
1	Marguerite Parkway between Jeronimo Road and La Paz Road
2	La Paz Road between Marguerite Parkway and Spadra Lane
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive
4	Marguerite Parkway between La Paz Road and Estanciero Drive

The study locations are depicted in **Figure 1.3**. The study location numbers in **Table 1.1** and **Table 2.2** correspond to the number labels in **Figure 1.3**.

FIGURE 1.3 – STUDY INTERSECTION AND ROADWAY SEGMENT LOCATIONS

1.3 STUDY SCENARIOS

Traffic impacts associated with the proposed project were analyzed at the study intersections for the weekday AM and PM peak-hour periods and at the study roadway segments for the weekday daily period. The study included the analysis of the following traffic scenarios:

- Existing Conditions
- Existing With-Project Conditions
- Opening Year (2025) Without-Project Conditions
- Opening Year (2025) With-Project Conditions

It should be noted that traffic counts in the study area for the afternoon school peak period were compared to traffic counts for the AM and PM peak periods. It was determined that the traffic counts for the weekday PM peak hour were higher than the afternoon school peak hours. Therefore, the traffic analysis for the weekday PM peak hour, which is considered the worst-case scenario, was included in this study and no traffic analysis was performed for the afternoon school peak. The traffic counts comparison is described in **Section 2.3** of this report.

1.4 STUDY METHODOLOGY

An analysis of existing and future weekday AM and PM peak hour traffic conditions at the eight study intersections and daily traffic operations at the four study roadway segments was performed through the use of established traffic engineering techniques. This section outlines the methodologies used to develop traffic conditions for each analysis scenario and techniques used to determine volume-to-capacity (V/C), delay, and level-of-service (LOS) values.

Existing (2022) Conditions

For study intersections, the existing 2022 traffic volumes were determined based on historical traffic counts as well as new traffic counts. Information pertaining to intersection characteristics, such as traffic control devices, approach lane configurations, and on-street parking restrictions were identified at the study locations. The 2022 traffic volumes and the intersection characteristics were used to assess the existing traffic conditions at the study intersections. The traffic data collection, derivation of existing 2022 traffic volumes, and the existing traffic controls, lane configurations, and level-of-service conditions are described in **Section 2** of this report.

For the study roadway segments, new daily (24-hour) traffic counts were collected on a typical weekday on Wednesday, April 27, 2022. As agreed with the City, these current daily counts are representative of the existing daily traffic volume conditions and therefore were used for purpose of this traffic analysis. The roadway segment analysis for the Existing Conditions is provided in **Section 2** of this report.

Project Trip Generation and Distribution

The project trip generation was calculated based on trip generation rates from the *Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021)*. The project trip generation was then multiplied by the project trip distribution percentages at the study intersections and roadway segments to determine the project volumes added to each intersection turning movement and roadway segment location. The methodologies used to determine the project trip generation and trip distribution percentages are described in greater detail in **Section 3** of this report.

Existing (2022) With-Project Conditions

The Existing With-Project traffic volumes were derived by adding the proposed project traffic volumes to the existing 2022 traffic volumes. The Existing With-Project scenario was analyzed to determine the project impacts against existing conditions.

Opening Year (2025) Without-Project Conditions

The proposed project is anticipated to be completed by Year 2025. In order to account for traffic growth in the study area, an ambient/background traffic growth rate of one percent per year was applied to the 2022 traffic volumes, as agreed with the City. In addition, it was assumed that the other existing vacancies within the Village Center would be re-occupied. Thus, the traffic associated with the re-occupied vacancies have also been added to the growth-factored existing traffic volumes to derive the Opening Year (2025) Without-Project Conditions. The traffic analysis results at the study intersections and study roadway segments for Opening Year Without-Project conditions are discussed in **Section 5** of this report.

Opening Year (2025) With-Project Conditions

The Opening Year With-Project traffic conditions were determined by adding the traffic associated with the proposed project to the Opening Year Without-Project traffic volumes. The traffic analysis results for this scenario are discussed in **Section 6** of this report.

Level-of-service Definition

Level-of-service (LOS) is a term used to qualitatively describe the operating conditions of a roadway or an intersection. The level-of-service of a facility is designated with a letter (A to F), with A representing the best operating conditions and F representing the worst operating conditions.

The intersection level-of-service analysis methodology is summarized below.

The City has approved the Intersection Capacity Utilization (ICU) methodology to evaluate signalized intersections and the Highway Capacity Manual (HCM) methodology to evaluate unsignalized intersections.

Roadway level-of-service under the ICU methodology is calculated as the volume of vehicles on the critical movements that pass through the facility divided by the capacity of that facility. A facility is "at capacity" (ICU value of 1.00 or greater) when extreme congestion occurs. This V/C ratio is based upon traffic volumes by lane, signal phasing, and approach lane configuration. According to the City, a lane capacity of 1,700 passenger cars per hour per lane (pcphpl) should be used for all through and turning lanes. A five percent adjustment to the clearance and loss time factor based on the critical phases of the signalized control was also included in determining the V/C ratio.

The HCM methodology utilized for unsignalized intersections is based on average vehicle delay at the intersection.

Two-Way Stop-Controlled Intersections: For intersections with stop control on the minor street, the LOS is calculated by the computed or measured delay at each minor street movement such as side street approaches and at major street left turns. The intersection's LOS is defined only by each movement, and not for the entire intersection. The highest delay at each minor street movement and major street left turn is used as the LOS for the intersection.

All-Way Stop-Controlled Intersections: For intersections with stop control at all approaches, the average delay for all approaches is computed and used as the LOS for the intersection.

Level-of-service values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS E is typically defined as the operating "capacity" of a roadway.

Table 1.3 and **Table 1.4** define the level-of-service criteria applied to the signalized and unsignalized intersections, respectively.

TABLE 1.3 – SIGNALIZED INTERSECTION LEVEL-OF-SERVICE DEFINITIONS (ICU)

Level of Service	Definition	Volume-to-Capacity Ratio (V/C)
A	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.	0.000–0.600
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.	0.601–0.700
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	0.701–0.800
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	0.801–0.900
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	0.901–1.000
F	FORCED FLOW. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	> 1.000
SOURCES: Transportation Research Board, *Highway Capacity Manual* (2000)		

TABLE 1.4 – UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE DEFINITIONS (HCM)

Level of Service	Definition	Average Control Delay per Vehicle (Seconds)
A	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.	0.0 – 10.0
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.	10.1 – 15.0
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	15.1 – 25.0
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	25.1 – 35.0
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	35.1 – 50.0
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	50.1 or more
SOURCES: Transportation Research Board, *Highway Capacity Manual* (2000)		

The roadway segment analysis methodology is summarized below.

For analysis of operations along the roadway segments, the City stipulates that conditions be evaluated based on Volume-to-Capacity (V/C) ratios calculated from daily traffic volumes. Specifically, the daily volumes traveling along each roadway segment were divided by the total roadway capacity to determine the segment V/C ratio. The roadway capacities were based on the City's classification for each roadway according to the *Orange County Master Plan of Arterial Highways (MPAH) dated August 14, 2017*. The roadway capacities according to the arterial types are summarized in **Table 1.5**. Based on the calculated V/C ratios, a LOS value was assigned to each roadway segment per the HCM LOS criteria described below in **Table 1.6**.

TABLE 1.5 – DAILY ROADWAY SEGMENT CAPACITIES

Type of Arterial	Lane Configuration	LOS E Capacity (Vehicles Per Day)
Principal	8 Lanes Divided	75,000
Major	6 Lanes Divided	56,300
Primary	4 Lanes Divided	37,500
Secondary	4 Lanes Undivided	25,000
Collector	2 Lanes Undivided	12,500
SOURCES: *Orange County Master Plan of Arterial Highways (MPAH) dated August 14, 2017, Table A-4-1*		

TABLE 1.6 – URBAN ROADWAY SEGMENT LEVEL-OF-SERVICE DEFINITIONS

Level of Service	Definition	Volume-to-Capacity Ratio
A	EXCELLENT. Primarily free-flow operation. Vehicles are unimpeded in their ability to maneuver within the traffic stream. Minimal control delay at boundary intersections.	0.000-0.600
B	VERY GOOD. Reasonably unimpeded operation. The ability to maneuver within the traffic stream is slightly impeded and insignificant control delay at boundary intersections.	0.601-0.700
C	GOOD. Stable operation. Maneuvering within traffic stream is more restrictive and longer queues are present at boundary intersections.	0.701-0.800
D	FAIR. Less stable conditions. Small increases in flow may cause substantial increases in delay and decreases in travel speed.	0.801-0.900
E	POOR. Unstable operation and significant delay. Conditions may result from adverse progression, high volumes, and inappropriate signal timing at boundary intersections.	0.901-1.000
F	FAILURE. Flow at extremely low speeds. Congestion is likely to occur at boundary intersections, indicated by high delay and extensive queuing.	>1.000
SOURCES: Transportation Research Board, *Highway Capacity Manual* (6th Edition)		

Significant Traffic Impacts and Thresholds

The City's significant traffic impact criteria is summarized below:

Intersections

The City of Mission Viejo considers LOS D to be the minimum acceptable conditions that should be maintained during the AM and PM peak hours for all intersections. A significant impact would occur at a study area intersection when the project-related traffic causes:

- A signalized intersection to degrade from an acceptable LOS D or better to LOS E or F; or
- The V/C ratio to increase by more than one percent (ICU increase ≥ 0.010) at a signalized intersection already operating at LOS E or LOS F.

For unsignalized intersections, the project's traffic impact is deemed significant if an intersection operating at a LOS D or better is downgraded to LOS E or LOS F, and the traffic signal warrant analysis determines that a traffic signal is justified.

Roadway Segments

LOS D is the minimum performance standard that has been adopted for the study area circulation system by the City Mission Viejo, which adheres to the Orange County Highway Design Manual. A significant impact would occur at a study area intersection when the project-related traffic causes:

- A roadway segment to degrade from an acceptable LOS D or better to LOS E or F; or
- The V/C ratio to increase by more than one percent (ICU increase ≥ 0.010) at a roadway segment already operating at LOS E or LOS F.

2.0 EXISTING CONDITIONS

2.1 EXISTING ROADWAY SYSTEM

The key roadways within the study area are described below:

La Paz Road is classified as a primary arterial and secondary arterial to the west and east of its intersection with Marguerite Parkway, respectively, per the 2013 City of Mission Viejo General Plan, Circulation Element. In the study area, this roadway provides two travel lanes in each direction and has a raised landscaped median adjacent to and west of the Village Center. The roadway forms the northern edge of the Village Center. There are three driveway access points, with traffic signal control at the middle driveway. On-street parking is prohibited on both sides of the road. La Paz Road also features Class II bike lanes along its entirety, connecting to the Class I Oso Creek Trail via the Village Center. The land uses along this roadway at its intersection with Marguerite Parkway are primarily commercial, except on the southwest corner of the intersection where the Civic Center is located. La Paz Road also provides access to several schools, including Newhart Middle School located northeast of the Village Center, La Paz Intermediate School and Esperanza Special Education located about a half-mile west of Marguerite Parkway, and Mission Viejo High School located immediately west of La Paz Intermediate School. The posted speed limit is 45 mph in the study area.

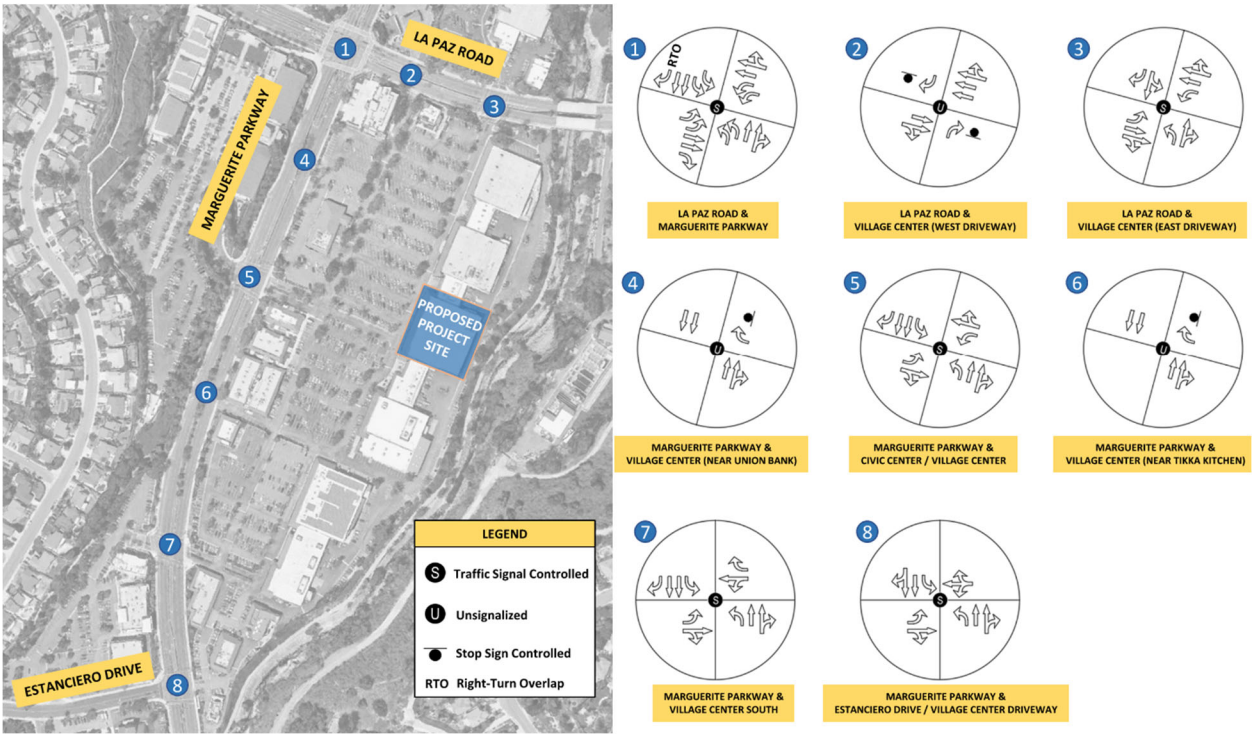
Marguerite Parkway is classified as a primary arterial in the 2013 City of Mission Viejo General Plan, Circulation Element. This roadway, which forms the western edge of the Village Center and provides five site access points, bisects the central part of Mission Viejo as the primary north-south roadway in the City. In the study area, this roadway has two travel lanes in each direction and a landscaped median. Land uses on both sides of the road are mainly commercial, with multiple shopping centers. The Mission Viejo Civic Center is also accessed from Marguerite Parkway. On-street parking is prohibited on both sides of the road. Marguerite Parkway also features Class II bike lanes along its entirety, connecting to the Oso Creek Trail's southern trailhead. The posted speed limit is 45 mph.

Civic Center is a two-lane, undivided roadway located west of the Village Center. This roadway extends from Marguerite Parkway to the west for about 300 feet and provides access to the Mission Viejo Civic Center. Its intersection with Marguerite Parkway is traffic signal controlled; the east leg of the intersection serves as a driveway access point to the Village Center.

Estanciero Drive is a two-lane, undivided roadway that extends from Marguerite Parkway to Chrisanta Drive on the west with primarily residential uses on both sides. Its intersection with Marguerite Parkway is traffic signal controlled and provides driveway access to the Village Center via the east leg of the intersection. On-street parking is permitted on both sides of the road. The posted speed limit is 30 mph.

Figure 2.1 illustrates the existing traffic controls and approach lane geometries at the study intersections.

FIGURE 2.1 – EXISTING INTERSECTION GEOMETRY



2.2 EXISTING TRANSIT SERVICE

Table 2.1 provides a description of the existing public transit operating within the study area.

TABLE 2.1 – EXISTING TRANSIT SERVICE SUMMARY

Agency	Line	From	To	Via	Peak Headway
OCTA	85	Mission Viejo – Portola Plaza	Laguna Niguel – Crown Valley Parkway and Niguel Road	Marguerite Parkway	60 min
OCTA	86	Costa Mesa – Bristol Street and Sunflower Avenue	Mission Viejo – Murray Community Center	Marguerite Parkway and La Paz Road	55 min
MV Shuttle	North/ South	Mission Viejo/Laguna Niguel MetroLink Station	Alicia Parkway and Olympiad Rd	Marguerite Parkway and Felipe Road	Varies*
MV Shuttle	MVHS Tripper	Mission Viejo High School	Mission Viejo City Hall/Library	Muirlands Boulevard and Los Alisos Boulevard	Varies*

Note: Peak headways are as of October 9, 2022.

*MV Shuttle operates at varying headways 6:30am to 7pm Monday-Friday from August 15 to June 1. The MVHS Tripper operates one time daily during weekday afternoons when Mission Viejo High School is in session.

The four existing bus lines serving the study area are depicted in **Figure 2.2**.

The two OCTA bus lines provide public bus service for the proposed project as well as the entire Village Center as there are bus stops for Line 85 along Marguerite Parkway and bus stops for Line 86 on both La Paz Road and Marguerite Parkway that are either adjacent to or within a short walking distance from the site. The MV shuttle service, which connects to local destinations in Mission Viejo, also serves the proposed project and the entire Village Center.

FIGURE 2.2 – EXISTING TRANSIT SERVICE

2.3 EXISTING TRAFFIC VOLUMES

The existing traffic volumes at the eight study intersections and four study roadway segments as well as existing pedestrian and bicyclist volumes at four locations along the Oso Creek Trail are summarized below.

TABLE 2.2 – STUDY INTERSECTIONS

No.	Intersection	Control
1	La Paz Road & Marguerite Parkway	Signalized
2	La Paz Road & Village Center (West Driveway)	Unsignalized
3	La Paz Road & Village Center (East Driveway)	Signalized
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	Unsignalized
5	Marguerite Parkway & Civic Center/Village Center N	Signalized
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	Unsignalized
7	Marguerite Parkway & Village Center S	Signalized
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	Signalized

Study Intersections

As agreed with the City, traffic volumes for four study intersections (i.e., Intersections 1, 5, 7 and 8) were based on 2021 traffic volumes taken from the recent *Traffic Impact Analysis (TIA) Report for Village Center Chick-Fil-A, January 14, 2022*. According to the Chick-Fil-A Traffic Study, historical counts were collected due to the effects of the COVID-19 pandemic. Specifically, those historical traffic counts were from April 2017 when both the Stein Mart and Michael's stores within the Village Center were in operation. The 2017 counts were growth-factored by one percent per year (i.e., four percent total growth) to estimate 2021 traffic volume conditions. Additionally, new traffic counts were conducted in July 2021 and compared to the growth-factored 2021 traffic volumes. The higher of the new traffic counts and growth-factored traffic volumes were utilized. For this traffic study, the 2021 traffic volumes that were used in the Chick-Fil-A Traffic Study were growth-factored by one percent to estimate 2022 traffic conditions at the four study intersections.

In addition, new traffic counts were conducted at Intersections 2, 3 and 4 on Thursday, September 29, 2022 as agreed with the City, since no historical data was available. These counts were collected from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. These timeframes were considered the peak timeframes for vehicle circulation at the Mission Viejo Village Center. The peak hour traffic volumes from both the AM and PM periods were extracted from each intersection individually. It should be noted that the new traffic counts at Intersection 4 located on Marguerite Parkway were compared to the traffic volumes at Intersections 1 and 5 and then adjusted where appropriate to balance the traffic flows along Marguerite Parkway. The new traffic count data sheets are provided in **Appendix A** of this report.

At the remaining Intersection 6, the traffic volumes along Marguerite Parkway were based on the traffic volumes at the two adjacent intersections. For the driveway at Intersection 6, the traffic volumes were based on traffic counts collected during December 2021 taken from the *Chick-Fil-A Traffic Study*. It was reasonably assumed that these site driveway counts from 2021 would also be representative of 2022 traffic conditions at the Village Center.

Figure 2.3 shows the study intersection locations and the dates of the traffic counts used for these locations. The existing weekday traffic volumes for the AM and PM peak hours are illustrated in **Figures 2.4 and 2.5**, respectively.

Study Roadway Segments

New daily (24-hour) traffic counts were collected at the four study roadway segments on a typical weekday on Wednesday, April 27, 2022. The roadway segment count data sheets are found in **Appendix A** of this report. The traffic counts are summarized below in **Table 2.3** and shown in **Figure 2.6**.

TABLE 2.3 – EXISTING ROADWAY SEGMENT TRAFFIC VOLUMES

No.	Roadway Segment	Daily (2-Way)
1	Marguerite Parkway between Jeronimo Road and La Paz Road	33,242
2	La Paz Road between Marguerite Parkway and Spadra Lane	22,133
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	16,958
4	Marguerite Parkway between La Paz Road and Estanciero Drive	32,730

Oso Creek Trail

Pedestrian and bicyclist counts were also collected at four locations along the Oso Creek Trail on Thursday, September 29, 2022 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. These counts were used to determine the existing demand along the Trail near the Village Center.

Figure 2.3 shows the Oso Creek Trail pedestrian and bicyclist count dates and locations. The count data sheets are found in **Appendix A** of this report. The pedestrian and bicyclist counts are discussed in **Section 11** of this report.

Traffic Volume Comparison during School Peaks vs AM & PM Peak Hours

As there are several schools in the study area, a review of traffic count data collected on April 27 and 28, 2022 was conducted on Marguerite Parkway between Jeronimo Road and Estanciero Road, and on La Paz Road between Muirlands Boulevard and Pacific Hills Drive to compare the traffic volumes for the weekday AM and PM peak hours and the school peak hours. The average traffic volumes along La Paz Road and Marguerite Parkway were determined as summarized in **Table 2.4**. It can be seen from this table that the average traffic volumes during the weekday PM peak hour are higher than the traffic volumes for the school peak hours. Therefore, the traffic conditions during the PM peak hour, which were analyzed in this report, are considered the worst-case scenario for traffic analysis purposes.

TABLE 2.4 – EXISTING WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES

Roadway Segment	School Peak Hour				PM Peak Hour
	8:00-9:00 AM *	12:30-1:30 PM**	2:00-3:00 PM	3:00-4:00 PM	(Between 4:00-6:00 PM)
La Paz Rd betw. Muirlands Blvd and Pacific Hills Dr	1749	1489	1652	1896	**2032**
Marguerite Pkwy betw. Jeronimo Rd and Estanciero Dr	2492	2242	2345	2833	**2844**

* Also within the AM peak period for the Traffic Study

** Mission Viejo High School off-site lunch peak

FIGURE 2.3 – EXISTING TRAFFIC COUNT LOCATIONS

Note: Highest traffic counts were used in the analysis in order to be conservative.

FIGURE 2.4 – EXISTING WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES

FIGURE 2.5 – EXISTING WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES

FIGURE 2.6 – EXISTING WEEKDAY DAILY TRAFFIC VOLUMES

2.4 EXISTING INTERSECTION LEVELS OF SERVICE

Based on the intersection lane geometries depicted in **Figure 2.1** and the existing traffic volumes illustrated on **Figure 2.4 and 2.5**, the V/C ratios, average delays, and the corresponding level-of-services (LOS) for the weekday AM and PM peak hours were determined for each of the study intersections. The existing LOS worksheets are provided in **Appendix B** of this report.

Table 2.5 summarizes the V/C ratios, delays, and LOS values for the existing conditions. As shown in this table, all of the study intersections are currently operating at a good level-of-service (i.e., LOS C or better) during both the weekday AM and PM peak hours.

TABLE 2.5 – INTERSECTION PERFORMANCE - EXISTING CONDITIONS

Study Intersection		AM Peak Hour		PM Peak Hour	
		V/C or Delay (Sec)	LOS	V/C or Delay (Sec)	LOS
1	La Paz Road & Marguerite Parkway	0.716	C	0.791	C
2	La Paz Road & Village Center (West Driveway)	12.5 Sec	B	13.8 Sec	B
3	La Paz Road & Village Center (East Driveway)	0.345	A	0.479	A
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	15.0 Sec	C	19.7 Sec	C
5	Marguerite Parkway & Civic Center/ Village Center N	0.543	A	0.752	C
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	15.3 Sec	C	18.2 Sec	C
7	Marguerite Parkway & Village Center S	0.520	A	0.674	B
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	0.732	C	0.795	C

V/C = Volume-to-Capacity Ratio
LOS = Level-of-Service

2.5 EXISTING ROADWAY SEGMENT LEVELS-OF-SERVICE

Based on the existing roadway segment daily volumes summarized in **Table 2.3** and the roadway segment capacities from **Table 1.5**, the V/C ratios were determined for each of the study roadway segments.

Table 2.6 summarizes the V/C ratios for the existing conditions. As shown in this table, all of the study roadway segments are currently operating at LOS D or better, which is the minimum performance standard adopted by the City.

TABLE 2.6 – ROADWAY SEGMENT PERFORMANCE - EXISTING CONDITIONS

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	Daily Volume (2-Way)	V/C Ratio	LOS
1	Marguerite Parkway between Jeronimo Road and La Paz Road	4D	Primary	37,500	33,242	0.886	D
2	La Paz Road between Marguerite Parkway and Spadra Lane	4D	Primary	37,500	22,133	0.590	A
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	4U	Secondary	25,000	16,958	0.678	B
4	Marguerite Parkway between La Paz Road and Estanciero Drive	4D	Primary	37,500	32,730	0.873	D

3.0 PROPOSED PROJECT

This section defines the traffic that would be generated by the proposed project in a three-step process including trip generation, trip distribution, and trip assignment.

3.1 PROJECT TRIP GENERATION

The trip generation of the proposed project was calculated using nationally accepted rates defined by the Institute of Transportation Engineers (ITE) –*Trip Generation (11th edition)*. For the proposed 16,770 square feet of restaurant use and 700 square feet of retail use, the appropriate trip generation rates from the *ITE Trip Generation* book were used for this study. It should be noted that the community room is an amenity to the project is not expected to generate additional land use specific vehicle trips; therefore, was omitted from the project trip generation calculations. The 'Event Barn' is an amenity to the project that is expected to generate traffic dependent on the type and scale of event hosted on-site. As such, the City does not expect a consistent trip generation associated with the event space and therefore excluded this land use from the calculated project trip generation. The City will review events hosted at the facility on a case-by-case basis, requiring a "special events" permit. The host will be subject to provide details regarding the type of event, number of expected guests, traffic control requirements, and parking management plan. This process would be consistent with all "special events" permits issued by the City, such as permits issued for the Mission Viejo Nadadores Swim Events, Saddleback Community College Sporting Events, and various church-sponsored events.

Based on the proposed tenant spaces, as shown in **Figure 1.2**, and the land use descriptions provided in the *ITE Trip Generation* book, the following breakdown was utilized for determining the project's trip generation:

- 3,000 square feet of Fine Dining Restaurant
- 12,445 square feet of High-Turnover (Sit-Down) Restaurant
- 1,325 square feet of Fast Casual Restaurant
- 700 square feet of Retail Apparel Store

The trip rates from the *ITE Trip Generation* book present "worst-case" trip generation conditions that do not account for trip-reducing factors based on the characteristics of the proposed project and its location in the project vicinity. One type of trip discount that is attributable to the proposed project is the presence of "pass-by" trips. These are trips that result in an interim stop at the project site during an existing or previously planned trip. These interim stops may be for a planned purpose such as going shopping on the way home from work, or they may be spur-of-the-moment "impulse" trips for carry-out food items. This type of pass-by trip is site-oriented and does not add traffic to the surrounding roadway network. However, the pass-by type of trip discount is not appropriate for application to the site driveways. These vehicle trips will eventually travel past the site (and through the intersection). They are not "eliminated" due to the existence of the project.

Average pass-by trip discount percentages for the PM peak hour from the *ITE Trip Generation Handbook (3rd edition)* were applied to the base trip generations of the proposed project. Pass-by trip discount data for the AM peak hour is not available from the *ITE Trip Generation Handbook (3rd edition)*. While pass-by trips attributable to the proposed project are likely to occur during the AM peak, no trip discount for the AM peak hour was assumed, in order to be conservative. For the daily trip generation, it was estimated that the pass-by percentage would be about half of the pass-by trip discount percentage for the PM peak hour based on engineering judgment.

Table 3.1 summarizes the trip generation for the proposed project. Without consideration of pass-by trip discounts, the proposed project would generate approximately 1,761 daily (2-way) trips including 124 trips (69 inbound and 55 outbound) during the AM peak hour and 156 trips (95 inbound and 61 outbound) during the PM peak hour. These trips (including both inbound and outbound) would be added to the site driveways. When factoring in a pass-by trip discount, the proposed project would generate approximately 1,377 daily (2-way) trips including 124 trips (69 inbound and 55 outbound) during the AM peak hour and 89 trips (53 inbound and 36 outbound) during the PM peak hour. The net project trip generation would be added trips to the road network, excluding the turning movements at the site driveways.

TABLE 3.1 – PROJECT TRIP GENERATION

ITE Trip Rate*		Daily (2-Way)	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
931: Fine Dining Restaurant	Trips/1,000 SF	83.84	0.73	80%	20%	7.80	67%	33%
932: High-Turnover (Sit-Down) Restaurant	Trips/1,000 SF	107.20	9.57	55%	45%	9.05	61%	39%
930: Fast Casual Restaurant	Trips/1,000 SF	97.14	1.43	50%	50%	12.55	55%	45%
876: Apparel Store	Trips/1,000 SF	66.40	1.00	80%	20%	4.12	51%	49%

Project Land Use	Size (1,000 SF)	Daily (2-Way)	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Restaurant [1]	3.000	252	2	2	0	23	15	8
Restaurant [2]	12.445	1334	119	65	54	113	69	44
Food Stall [3]	1.325	129	2	1	1	17	9	8
Retail [4]	0.700	46	1	1	0	3	2	1
Total (A)		1761	124	69	55	156	95	61
Pass-By Trips								
Restaurant [1] (Daily: 22%, PM: 44%)[5]		*(55)*	*0*	*0*	*0*	*(10)*	*(7)*	*(3)*
Restaurant [2] (Daily: 22%, PM: 43%)[6]		*(293)*	*0*	*0*	*0*	*(49)*	*(30)*	*(19)*
Food Stall [3] (Daily: 22%, PM: 43%)[7]		*(28)*	*0*	*0*	*0*	*(7)*	*(4)*	*(3)*
Retail [4] (Daily: 17%, PM: 34%)[8]		*(8)*	*0*	*0*	*0*	*(1)*	*(1)*	*0*
Total (B)		*(384)*	*0*	*0*	*0*	*(67)*	*(42)*	*(25)*
TOTAL [(A) - (B)]		**1377**	**124**	**69**	**55**	**89**	**53**	**36**

* Source: *Institute of Transportation Engineers Trip Generation* Book, 11th Edition

[1] Assumed trips for restaurants that are at least 3,000 sf are based on ITE trip rates for Fine Dining Restaurant

[2] Assumed trips for restaurants that are less than 3,000 sf are based on ITE trip rates for High-Turnover (Sit-Down) Restaurant

[3] Assumed trips for food stalls are based on ITE trip rates for Fast Casual Restaurant

[4] Assumed trips for retail are based on ITE trip rates for Apparal Store

[5] The *Trip Generation Handbook, 3rd Edition* provides pass-by trip reduction factor of 44% for Quality Restaurant during the PM peak hour; no data was available for the Daily and AM peak hour. The daily and AM peak hour pass-by percentages are estimated to be 22% and 0%, respectively, based on engineering judgement.

[6] The *Trip Generation Handbook, 3rd Edition* provides pass-by trip reduction factor of 43% for High-Turnover Restaurant during the PM peak hour; no data was available for the Daily and AM peak hour. The daily and AM peak hour pass-by percentages are estimated to be 22% and 0%, respectively, based on engineering judgement.

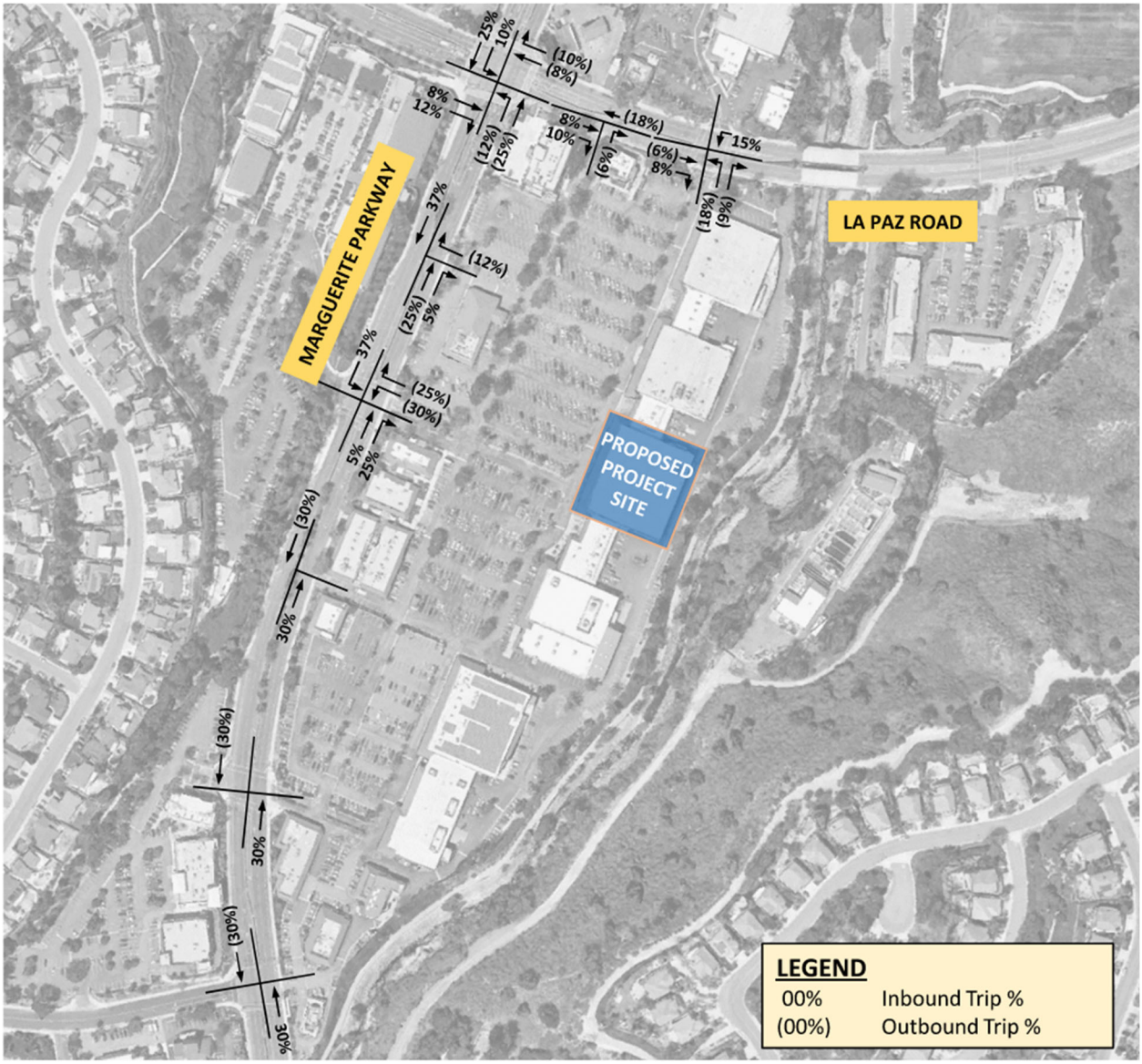
[7] The *Trip Generation Handbook, 3rd Edition* does not provide pass-by trip reduction factors of ITE Land Use Code 930. For purpose of this analysis, the pass-by trip reduction factor (i.e., 43% for PM peak hour) for ITE Land Use 932: High-Turnover Restaurant was used. No data was available for the Daily and AM peak hour. The daily and AM peak hour pass-by percentages are estimated to be 22% and 0%, respectively, based on engineering judgement.

[8] The *Trip Generation Handbook, 3rd Edition* does not provide pass-by trip reduction factors of ITE Land Use Code 876. For purpose of this analysis, the pass-by trip reduction factor (i.e., 34% for PM peak hour) for ITE Land Use 820: Shopping Center was used. No data was available for the Daily and AM peak hour. The daily and AM peak hour pass-by percentages are estimated to be 17% and 0%, respectively, based on engineering judgement.

3.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of assigning the directions from which traffic will access the project site. For the proposed project, the trip distribution was based upon the land use characteristics of the project, the local roadway network, and the general location of other land uses to which project trips would originate or terminate. **Figure 3.1** depicts the project trip distribution percentages used for this study.

FIGURE 3.1 – PROJECT TRIP DISTRIBUTION PERCENTAGES



3.3 PROJECT SITE CIRCULATION

Figure 3.2 shows the expected project site access and internal circulation within the proposed project.

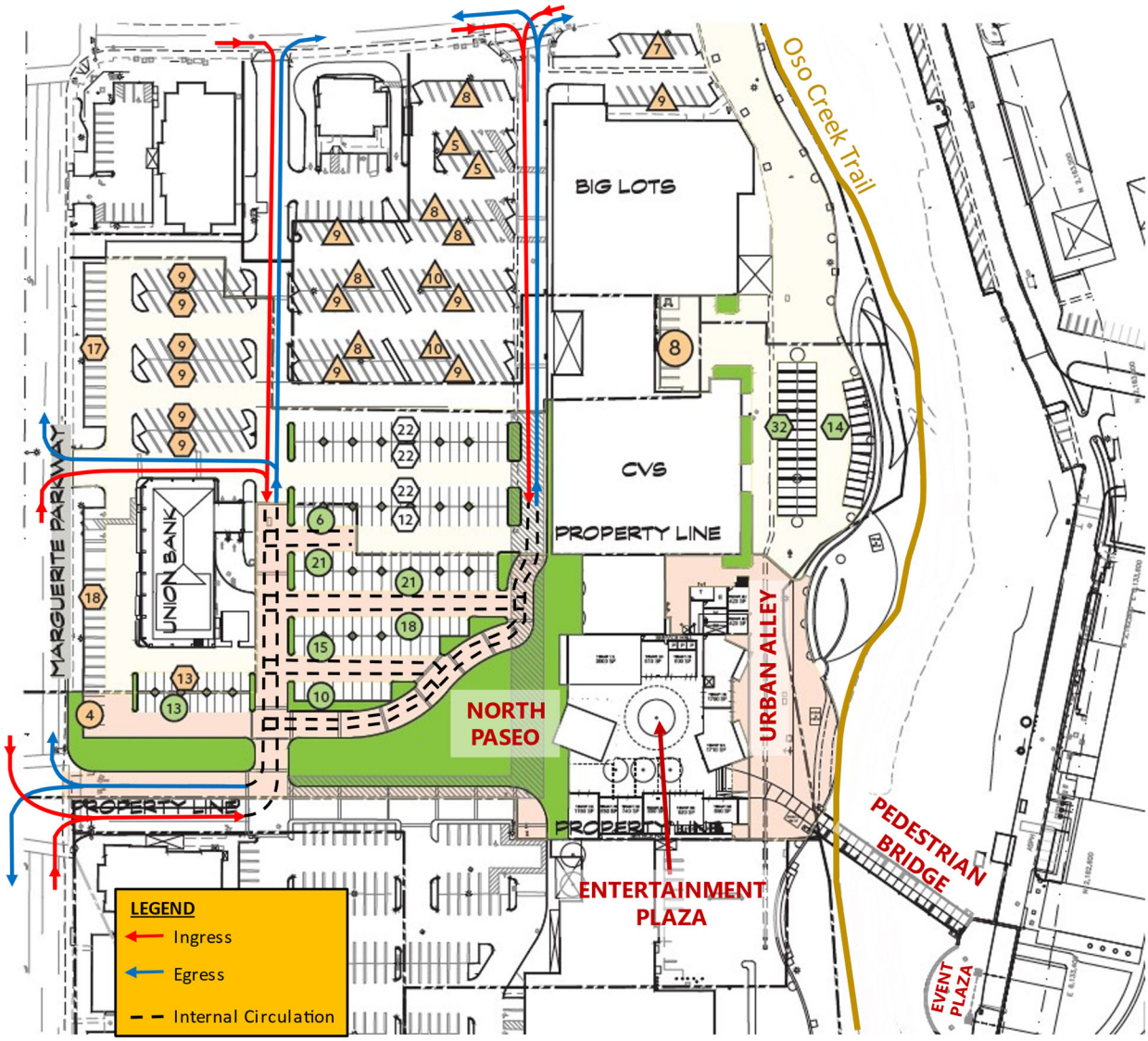
The proposed project will be situated near the center of the Village Center site. Due to the proposed project's location within the site, it is anticipated that vehicle trips associated with the proposed project would utilize the two site access points located at Intersections 4 and 5 along Marguerite Parkway and the two site access points located at Intersections 2 and 3 along La Paz Road.

Within the Village Center site, the proposed project will include a new 'paseo' that extends into the existing parking area, which will enhance the pedestrian and bicyclist connectivity from Marguerite Parkway to the west, connecting into the proposed project and surrounding existing land uses within the site, and then to the eastern portion of the Village Center where a direct connection to the Oso Creek Trail will be provided. The improved pedestrian and bicyclist accessibility is further discussed in **Section 11** of this report.

The new 'paseo' would also require the modification of the internal traffic circulation in the parking area. In particular, the 'paseo' would provide an unimpeded pedestrianized area immediately in front of the proposed project. This pedestrianized area would result in the closure of an existing north-south drive aisle located immediately west of the proposed project. The review of the internal traffic circulation is summarized in **Section 8** of this report.

With the provision of the new 'paseo', the parking layout particularly in the area immediately to the west of the proposed project site would be modified. A parking analysis has been prepared for the proposed project, which is summarized in **Section 9** of this report.

FIGURE 3.2 – PROJECT SITE ACCESS AND CIRCULATION



3.4 PROJECT TRIP ASSIGNMENT

Based on the trip generation and distribution assumptions described above, the proposed project traffic was assigned to the roadway system. As described previously, vehicle trips associated with the proposed project are anticipated to enter and exit the site via driveways at Intersections 2 and 3 along La Paz Road and at Intersections 4 and 5 along Marguerite Parkway as these access points along the two adjacent roadways are located closest to the proposed project site. **Figures 3.3 and 3.4** show the project traffic volumes for the AM and PM peak hours, respectively. It should be noted that the ingress and egress project traffic volumes at the site access points do not take into account the pass-by trip discount, while the traffic volumes that do not turn in and out of the site driveways take into account the pass-by trip discount.

FIGURE 3.3 – PROJECT ONLY TRAFFIC VOLUMES – AM PEAK HOUR

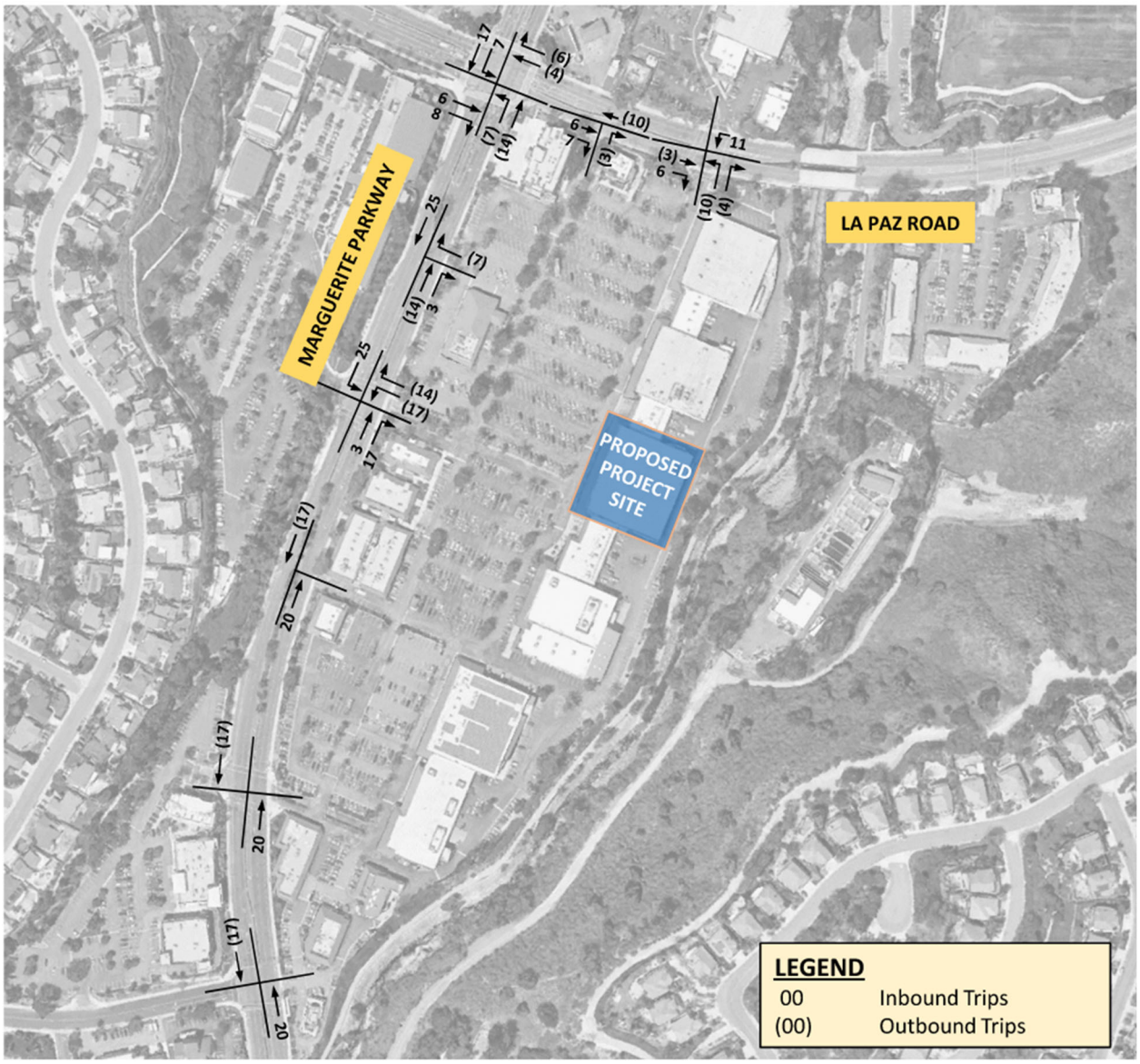
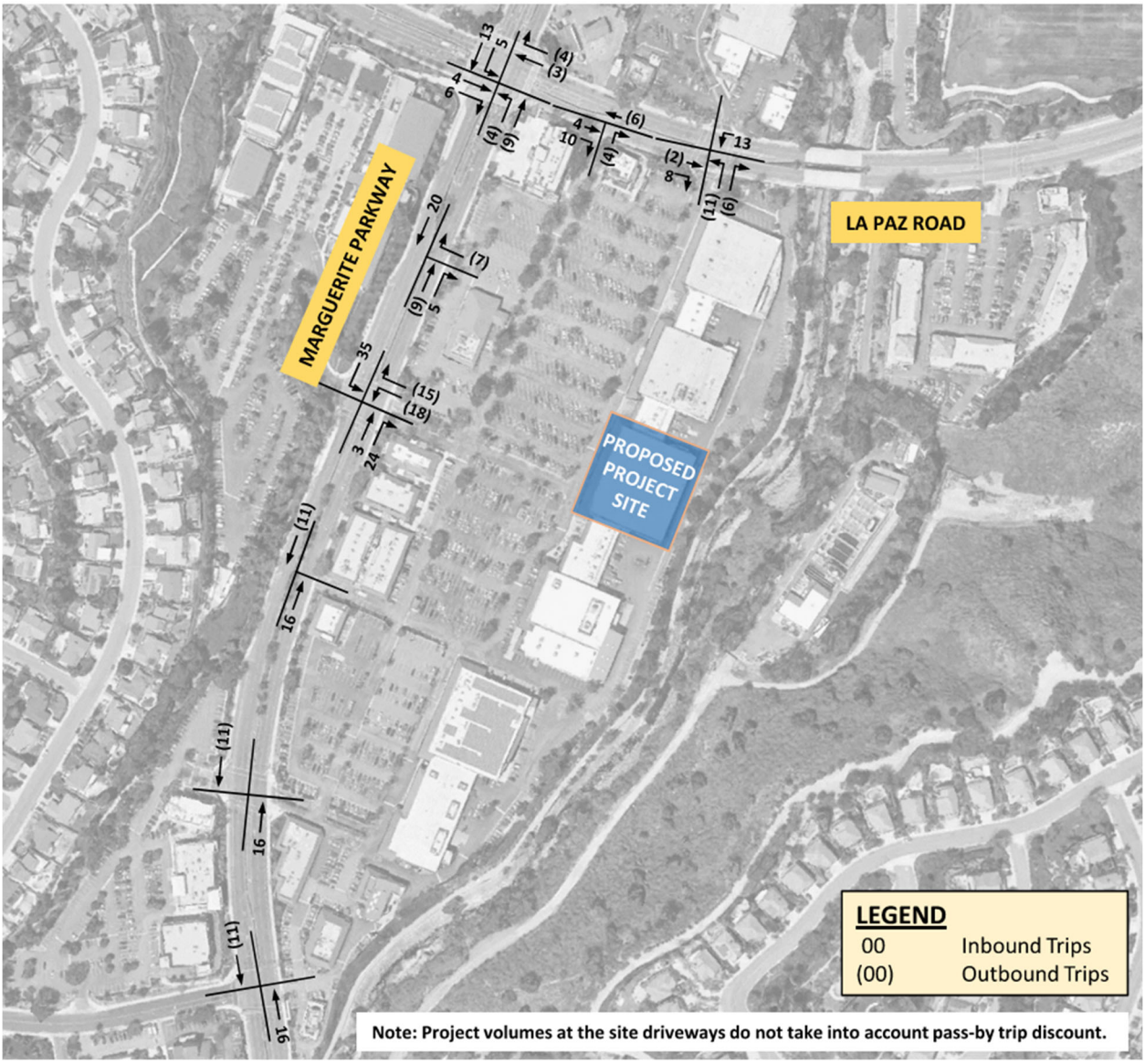


FIGURE 3.4 – PROJECT ONLY TRAFFIC VOLUMES – PM PEAK HOUR



4.0 EXISTING WITH-PROJECT CONDITIONS

This section documents the existing traffic conditions at the study intersections and roadway segments with the addition of project-generated traffic. Traffic volumes for these conditions were derived by adding the project traffic volumes to the existing traffic volumes.

4.1 EXISTING WITH-PROJECT INTERSECTION LEVELS OF SERVICE

The Existing With-Project traffic volumes for the weekday AM and PM peak hours are illustrated in **Figures 4.1 and 4.2**, respectively.

Table 4.1 summarizes the resulting V/C ratios, delays and LOS values at the study intersections for the Existing With-Project conditions. The analysis worksheets are provided in **Appendix C** of this report.

TABLE 4.1 – INTERSECTION PERFORMANCE - EXISTING WITH-PROJECT CONDITIONS

Study Intersection		AM Peak Hour		PM Peak Hour	
		V/C or Delay (Sec)	LOS	V/C or Delay (Sec)	LOS
1	La Paz Road & Marguerite Parkway	0.726	C	0.799	C
2	La Paz Road & Village Center (West Driveway)	12.6 Sec	B	14.1 Sec	B
3	La Paz Road & Village Center (East Driveway)	0.350	A	0.494	A
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	15.4 Sec	C	20.4 Sec	C
5	Marguerite Parkway & Civic Center/ Village Center N	0.554	A	0.792	C
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	15.4 Sec	C	18.4 Sec	C
7	Marguerite Parkway & Village Center S	0.525	A	0.679	B
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	0.737	C	0.799	C

V/C = Volume-to-Capacity Ratio
LOS = Level-of-Service
V/C values for signalized intersections and Delay in seconds for unsignalized intersections

As shown in **Table 4.1**, all of the study intersections are expected to operate at a good level-of-service (i.e., LOS C or better) during the weekday AM and PM peak hours.

FIGURE 4.1 – EXISTING WITH-PROJECT TRAFFIC VOLUMES - AM PEAK HOUR

FIGURE 4.2 – EXISTING WITH-PROJECT TRAFFIC VOLUMES - PM PEAK HOUR

4.2 EXISTING WITH-PROJECT ROADWAY SEGMENT LEVELS OF SERVICE

Table 4.2 summarizes the daily traffic volumes and corresponding V/C ratios at the four study roadway segments for the Existing With-Project conditions.

TABLE 4.2 – ROADWAY SEGMENT PERFORMANCE – EXISTING WITH-PROJECT CONDITIONS

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	Daily Volume (2-Way)	V/C Ratio	LOS
1	Marguerite Parkway between Jeronimo Road and La Paz Road	4D	Primary	37,500	33,724	0.899	D
2	La Paz Road between Marguerite Parkway and Spadra Lane	4D	Primary	37,500	22,408	0.598	A
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	4U	Secondary	25,000	17,165	0.687	B
4	Marguerite Parkway between La Paz Road and Estanciero Drive	4D	Primary	37,500	33,143	0.884	D

As shown in **Table 4.2**, all of the study roadway segments are expected to operate at LOS D or better under Existing With-Project conditions.

5.0 OPENING YEAR (2025) WITHOUT-PROJECT CONDITIONS

This section provides an analysis of opening year traffic conditions in the study area with background traffic growth added, but without the proposed project traffic. The year 2025 was selected for analysis of opening year conditions since the proposed project is anticipated to be completed by the end of 2025.

5.1 AMBIENT GROWTH

In order to acknowledge regional population and employment growth in the study area, an ambient/background traffic growth rate of one percent per year was applied to the existing traffic volumes, as agreed by the City. As there are three years until project opening, a growth factor of 1.03 was used for the opening year scenarios.

5.2 VACANT LAND USE TRAFFIC GROWTH

There are currently vacant storefront uses within the Village Center site. These vacant land uses were assumed to be re-occupied by Opening Year 2025. Therefore, the traffic related to the re-occupancy of the vacant uses were manually added to the existing plus ambient growth traffic volumes to estimate the Opening Year Without-Project traffic volumes. A description of the vacant land uses and the traffic associated with re-occupancy of these vacant spaces are provided in **Appendix D** of this report.

As previously noted, the baseline traffic volumes from 2017 included traffic from the previously occupied Stein Mart and Michael's buildings. The reoccupancy of these vacant land uses reflects a conservative approach.

5.3 OPENING YEAR (2025) WITHOUT-PROJECT INTERSECTION LEVELS OF SERVICE

The Opening Year (2025) Without-Project traffic volumes for the weekday AM and PM peak hour are illustrated in **Figures 5.1 and 5.2**, respectively. The traffic analysis worksheets for this scenario are provided in **Appendix E** of this report. **Table 5.1** summarizes the V/C ratio, average delay, and LOS values at the study intersections. As shown in this table, all of the study intersections are expected to operate at LOS D or better during the weekday AM and PM peak hours.

TABLE 5.1 – INTERSECTION PERFORMANCE- OPENING YEAR (2025) WITHOUT-PROJECT CONDITIONS

Study Intersection		AM Peak Hour		PM Peak Hour	
		V/C or Delay (Sec)	LOS	V/C or Delay (Sec)	LOS
1	La Paz Road & Marguerite Parkway	0.750	C	0.831	D
2	La Paz Road & Village Center (West Driveway)	12.7 Sec	B	14.3 Sec	B
3	La Paz Road & Village Center (East Driveway)	0.355	A	0.506	A
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	15.7 Sec	C	21.2 Sec	C
5	Marguerite Parkway & Civic Center/ Village Center N	0.573	A	0.840	D
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	16.5 Sec	C	21.7 Sec	C
7	Marguerite Parkway & Village Center S	0.542	A	0.709	C
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	0.758	C	0.824	D

V/C = Volume-to-Capacity Ratio
LOS = Level-of-Service
V/C values for signalized intersections and Delay in seconds for unsignalized intersections

FIGURE 5.1 – OPENING YEAR WITHOUT-PROJECT TRAFFIC VOLUMES - AM PEAK HOUR

FIGURE 5.2 – OPENING YEAR WITHOUT-PROJECT TRAFFIC VOLUMES - PM PEAK HOUR

5.4 OPENING YEAR (2025) WITHOUT-PROJECT ROADWAY SEGMENT LEVELS OF SERVICE

Table 5.2 summarizes the daily traffic volumes and corresponding V/C ratios at the four study roadway segments for the Opening Year (2025) Without-Project conditions.

Table 5.2 – Roadway Segment Performance - Opening Year (2025) Without-Project Conditions

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	Daily Volume (2-Way)	V/C Ratio	LOS
1	Marguerite Parkway between Jeronimo Road and La Paz Road	4D	Primary	37,500	34,574	**0.922**	**E**
2	La Paz Road between Marguerite Parkway and Spadra Lane	4D	Primary	37,500	22,988	0.613	C
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	4U	Secondary	25,000	17,610	0.704	C
4	Marguerite Parkway between La Paz Road and Estanciero Drive	4D	Primary	37,500	33,999	**0.907**	**E**

Note: Bold V/C ratios and LOS values indicate unacceptable service levels

The table shows that the two study roadway segments located on La Paz Road are expected to operate at LOS C while the remaining two study roadway segments located on Marguerite Parkway are expected to operate at LOS E under Opening Year (2025) Without-Project conditions.

6.0 OPENING YEAR (2025) WITH-PROJECT CONDITIONS

This section documents Opening Year (2025) traffic conditions at the study intersections and study roadway segments with the addition of project-generated traffic. The traffic volumes for this scenario were derived by adding the proposed project traffic to the Opening Year Without-Project traffic volumes.

6.1 OPENING YEAR (2025) WITH-PROJECT INTERSECTION LEVELS OF SERVICE

The Opening Year With-Project traffic volumes are illustrated in **Figures 6.1 and 6.2** for the weekday AM and PM peak hours, respectively. The traffic analysis worksheets are provided in **Appendix F** of this report.

Table 6.1 summarizes the resulting V/C ratio, average delay, and LOS values at the study intersections for the Opening Year With-Project conditions.

TABLE 6.1 – INTERSECTION PERFORMANCE - OPENING YEAR (2025) WITH-PROJECT CONDITIONS

Study Intersection		AM Peak Hour		PM Peak Hour	
		V/C or Delay (Sec)	LOS	V/C or Delay (Sec)	LOS
1	La Paz Road & Marguerite Parkway	0.760	C	0.839	D
2	La Paz Road & Village Center (West Driveway)	12.8 Sec	B	14.5 Sec	B
3	La Paz Road & Village Center (East Driveway)	0.359	A	0.521	A
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	16.1 Sec	C	22.0 Sec	C
5	Marguerite Parkway & Civic Center/ Village Center N	0.605	B	0.879	D
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	16.7 Sec	C	22.0 Sec	C
7	Marguerite Parkway & Village Center S	0.547	A	0.714	C
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	0.763	C	0.827	D

V/C = Volume-to-Capacity Ratio
LOS = Level-of-Service
V/C values for signalized intersections and Delay in seconds for unsignalized intersections

The table shows that all of the study intersections are expected to operate at LOS D or better during the weekday AM and PM peak hours under Opening Year With-Project conditions. A discussion of project traffic impacts under this scenario is provided in **Section 7** of this report.

FIGURE 6.1 – OPENING YEAR WITH-PROJECT TRAFFIC VOLUMES - AM PEAK HOUR

FIGURE 6.2 – OPENING YEAR WITH-PROJECT TRAFFIC VOLUMES - PM PEAK HOUR

6.2 OPENING YEAR (2025) WITH-PROJECT ROADWAY SEGMENTS LEVELS OF SERVICE

Table 6.2 summarizes the daily traffic volumes and corresponding V/C ratios at the four study roadway segments for the Opening Year (2025) With-Project conditions.

TABLE 6.2 – ROADWAY SEGMENT PERFORMANCE - OPENING YEAR (2025) WITH-PROJECT CONDITIONS

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	Daily Volume (2-Way)	V/C Ratio	LOS
1	Marguerite Parkway between Jeronimo Road and La Paz Road	4D	Primary	37,500	35,056	0.935	E
2	La Paz Road between Marguerite Parkway and Spadra Lane	4D	Primary	37,500	23,264	0.620	C
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	4U	Secondary	25,000	17,817	0.713	C
4	Marguerite Parkway between La Paz Road and Estanciero Drive	4D	Primary	37,500	34,412	0.918	E

As shown in **Table 6.2**, the two study roadway segments located on La Paz Road are expected to operate at LOS C, while the two study roadway segments located on Marguerite Parkway are expected to operate at LOS E under Opening Year (2025) With-Project conditions. A discussion of project traffic impacts under this scenario is provided in **Section 7** of this report.

7.0 PROJECT TRAFFIC IMPACTS

7.1 DETERMINATION OF TRAFFIC IMPACTS

As described previously in **Section 1.4**, a project is considered to have a significant traffic impact under the following conditions:

Intersection

For signalized intersections, a project is considered to have a significant traffic impact if the project increases the traffic demand at the study intersection by one percent of capacity (ICU increase ≥ 0.010), causing or worsening LOS E or LOS F (ICU > 0.900).

For unsignalized intersections, the project's traffic impact is deemed significant if an intersection operating at a LOS D or better is downgraded to LOS E or LOS F, and the traffic signal warrant analysis determines that a traffic signal is justified.

Roadway Segment

At roadway segments, a significant traffic impact is deemed to occur when the project traffic results in an increase in the V/C ratio by 0.010 (1%), causing or worsening the operations to LOS E or F.

7.2 PROJECT TRAFFIC IMPACTS – EXISTING WITH-PROJECT CONDITIONS

Traffic impacts created by the proposed project were determined by comparing the Existing Conditions to the Existing With-Project conditions.

Study Intersections

Table 7.1 provides a summary of the project impacts at the study intersections under existing conditions. As shown in this table, the proposed project would not create a significant traffic impact at any study intersections under Existing With-Project conditions.

TABLE 7.1 – DETERMINATION OF PROJECT IMPACTS AT STUDY INTERSECTIONS - EXISTING WITH-PROJECT CONDITIONS

Study Intersection		Peak Hour	Existing		Existing Plus Project		Change in V/C	Significant Impact
			V/C or Delay (Sec)	LOS	V/C or Delay (Sec)	LOS		
1	La Paz Road & Marguerite Parkway	AM	0.716	C	0.726	C	0.010	No
		PM	0.791	C	0.799	C	0.008	No
2	La Paz Road & Village Center (West Driveway)	AM	12.5 Sec	B	12.6 Sec	B	0.1 Sec	No
		PM	13.8 Sec	B	14.1 Sec	B	0.3 Sec	No
3	La Paz Road & Village Center (East Driveway)	AM	0.345	A	0.350	A	0.005	No
		PM	0.479	A	0.494	A	0.015	No
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	AM	15.0 Sec	C	15.4 Sec	C	0.4 Sec	No
		PM	19.7 Sec	C	20.4 Sec	C	0.7 Sec	No
5	Marguerite Parkway & Civic Center/Village Center N	AM	0.543	A	0.554	A	0.011	No
		PM	0.752	C	0.792	C	0.040	No
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	AM	15.3 Sec	C	15.4 Sec	C	0.1 Sec	No
		PM	18.2 Sec	C	18.4 Sec	C	0.2 Sec	No
7	Marguerite Parkway & Village Center S	AM	0.520	A	0.525	A	0.005	No
		PM	0.674	B	0.679	B	0.005	No
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	AM	0.732	C	0.737	C	0.005	No
		PM	0.795	C	0.799	C	0.004	No

V/C = Volume-to-Capacity Ratio
LOS = Level-of-Service
V/C values for signalized intersections and Delay in seconds for unsignalized intersections

Study Roadway Segments

Table 7.2 provides a summary of the project impacts at the study roadway segments under Existing With-Project conditions. As shown in this table, the proposed project is anticipated to result in no significant traffic impacts at any of the study roadway segments under this scenario.

TABLE 7.2 – DETERMINATION OF PROJECT IMPACTS AT STUDY ROADWAY SEGMENTS - EXISTING WITH-PROJECT CONDITIONS

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	Existing			Existing With Project				Significant (Yes/No)
					Daily Volume (2-Way)	V/C Ratio	LOS	Daily Volume (2-Way)	V/C Ratio	LOS	V/C Increase	
1	Marguerite Parkway between Jeronimo Road and La Paz Road	4D	Primary	37,500	33,242	0.886	D	33,724	0.899	D	0.013	No
2	La Paz Road between Marguerite Parkway and Spadra Lane	4D	Primary	37,500	22,133	0.590	A	22,408	0.598	A	0.007	No
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	4U	Secondary	25,000	16,958	0.678	B	17,165	0.687	B	0.008	No
4	Marguerite Parkway between La Paz Road and Estanciero Drive	4D	Primary	37,500	32,730	0.873	D	33,143	0.884	D	0.011	No

7.3 PROJECT TRAFFIC IMPACTS – OPENING YEAR WITH-PROJECT CONDITIONS

Traffic impacts created by the proposed project were also determined by comparing the Opening Year Without-Project conditions to the Opening Year With-Project conditions.

Study Intersections

Table 7.3 provides a summary of the project impacts at the study intersections under Opening Year With-Project conditions. The table shows that the proposed project would not create a significant traffic impact at any of the study intersections under this scenario.

TABLE 7.3 – DETERMINATION OF PROJECT IMPACTS AT STUDY INTERSECTIONS - OPENING YEAR WITH-PROJECT CONDITIONS

Study Intersection		Peak Hour	Opening Year Without Project		Opening Year With Project			Significant Impact
			V/C or Delay (Sec)	LOS	V/C or Delay (Sec)	LOS	V/C Increase (Sec)	
1	La Paz Road & Marguerite Parkway	AM	0.750	C	0.760	C	0.010	No
		PM	0.831	D	0.839	D	0.008	No
2	La Paz Road & Village Center (West Driveway)	AM	12.7	B	12.8	B	0.1	No
		PM	14.3	B	14.5	B	0.2	No
3	La Paz Road & Village Center (East Driveway)	AM	0.355	A	0.359	A	0.004	No
		PM	0.506	A	0.521	A	0.015	No
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	AM	15.7	C	16.1	C	0.4	No
		PM	21.2	C	22.0	C	0.8	No
5	Marguerite Parkway & Civic Center/Village Center N	AM	0.573	A	0.605	B	0.032	No
		PM	0.840	D	0.879	D	0.039	No
6	Marguerite Parkway & Village Center Driveway (near Tikka Indian Kitchen)	AM	16.5	C	16.7	C	0.2	No
		PM	21.7	C	22.0	C	0.3	No
7	Marguerite Parkway & Village Center S	AM	0.542	A	0.547	A	0.005	No
		PM	0.709	C	0.714	C	0.005	No
8	Marguerite Parkway & Estanciero Drive/Village Center Driveway	AM	0.758	C	0.763	C	0.005	No
		PM	0.824	D	0.827	D	0.003	No

V/C = Volume-to-Capacity Ratio
LOS = Level-of-Service
V/C values for signalized intersections and Delay in seconds for unsignalized intersections

Study Roadway Segments

Table 7.4 provides a summary of the project impacts at the study roadway segments under Opening Year With-Project conditions. As shown in this table, the proposed project is anticipated to result in a significant traffic impact at the two study roadway segments listed below.

- Marguerite Parkway between Jeronimo Road & La Paz Road
- Marguerite Parkway between La Paz Road & Estanciero Drive

The intersection peak hour review is an operational analysis, whereas the roadway segment review is a

planning-level analysis. This analysis differs from the operational traffic analysis, which analyzes the peak hour traffic and as such is considered much more accurate than the planning-level analysis. The planning level analysis studies traffic over a 24-hour period and is considered less accurate and is typically used only as a general planning tool to assess long term general trends. Per OCTA's *Master Plan of Arterial Highway Guidelines*, "the level of precision inherent in planning analyses is typically lower than for operational analyses" and may not reflect actual roadway conditions. For example, the roadway analysis assumes a 4-lane facility for 24-hour traffic; however, the actual conditions have a higher capacity and reflect 4 through lanes, dual left-turn lanes, and dedicated right-turns at most of the signalized intersections along Marguerite Parkway. As shown in this report, all study area intersections operate at an acceptable LOS during both the AM and PM peak periods – the most critical traffic periods of the day.

In addition, a roadway segment analysis to determine the weekday AM and PM peak hour level of service at Roadway Segment #1 and #4 was also conducted based on the peak hour V/C ratio method of analysis and LOS standards and significant impact criteria described previously in this report. As summarized in **Table 7.5**, the proposed project is not anticipated to result in a significant traffic impact at both Roadway Segments #1 and #4 for the Opening Year With-Project conditions based on the peak hour V/C method of analysis and the City's significant impact criteria. The two roadway segments are forecast to operate at the minimum LOS performance standard (i.e., LOS D) for the Opening Year With-Project conditions during both weekday AM and PM peak hours, except at Roadway Segment #1 where it is projected to operate at LOS E during the PM peak hour with or without the proposed project.

The City of Mission Viejo guidelines indicate various transportation strategies should be considered to mitigate traffic impacts. As the traffic impacts are minimal, it is expected that a traffic management approach will ease the flow of traffic along these segments, addressing any capacity issues. To mitigate traffic impacts to these roadway segments of Marguerite Parkway "(Segment #1 (Marguerite Parkway between Jeronimo Road and La Paz Road) and Segment #4 (Marguerite Parkway between La Paz Road and Estanciero Drive)", the City can implement the following:

- The City of Mission Viejo participates in the Orange County Traffic Signal Synchronization Plan (Project P), which increases the throughput capacity along arterial roadways like Marguerite Parkway. The Marguerite Parkway arterial corridor has twice been awarded Project P funds (2011 and 2016) and has several time-of-day coordination patterns, including weekdays and weekends. The City was recently awarded funds to update Marguerite Parkway once again. The project would begin at the beginning of 2024 and the Operations and Maintenance (O&M) phase would run in 2025 and 2026. With an overlap between the Village Center Project Opening Year (2025) and the potential Marguerite Parkway O&M phase (2025-2026), the City can closely monitor any signal timing adjustments needed to improve operations along an impacted project area roadway segment.

- Developing Transportation Demand Management (TDM) strategies, including bus programs (such as the MV Shuttle) and active transportation programs (additional pedestrian/bicyclist infrastructure) with the intent of reducing single-occupancy vehicles on the roadway.

- The Village Center project location provides direct access to the Oso Creek Trail, which can assist with reducing the number of vehicle trips impacting the surrounding roadways.

TABLE 7.4 – DETERMINATION OF PROJECT IMPACTS AT STUDY ROADWAY SEGMENTS – OPENING YEAR WITH-PROJECT CONDITIONS (DAILY)

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	Opening Year Without Project			Opening Year With Project				Significant (Yes/No)
					Daily Volume (2-Way)	V/C Ratio	LOS	Daily Volume (2-Way)	V/C Ratio	LOS	V/C Increase	
1	Marguerite Parkway between Jeronimo Road and La Paz Road	4D	Primary	37,500	34,667	0.924	E	35,149	0.937	E	0.013	**Yes**
2	La Paz Road between Marguerite Parkway and Spadra Lane	4D	Primary	37,500	23,041	0.614	C	23,317	0.622	C	0.007	No
3	La Paz Road between Marguerite Parkway and Pacific Hills Drive	4U	Secondary	25,000	17,650	0.706	C	17,857	0.714	C	0.008	No
4	Marguerite Parkway between La Paz Road and Estanciero Drive	4D	Primary	37,500	34,079	0.909	E	34,492	0.920	E	0.011	**Yes**

TABLE 7.5 – DETERMINATION OF PROJECT IMPACTS AT STUDY ROADWAY SEGMENTS – OPENING YEAR WITH-PROJECT CONDITIONS (PEAK HOUR)

No.	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (Veh/Hr)*	Time Period	Opening Year Without Project			Opening Year With Project			V/C Increase	Significant (Yes/No)
						Peak Hour Volume	V/C Ratio	LOS	Peak Hour Volume	V/C Ratio	LOS		
1	Marguerite Parkway between Jeronimo Road & La Paz Road	4D	Primary	3,750	AM	3,166	0.844	D	3,210	0.856	D	0.012	No
					PM	3,436	0.916	E	3,467	0.925	E	0.009	No
4	Marguerite Parkway between La Paz Road & Estanciero Drive	4D	Primary	3,750	AM	2,997	0.799	C	3,034	0.809	D	0.010	No
					PM	3,263	0.870	D	3308	0.882	D	0.012	No

* The roadway segment LOS capacity during the peak hour is based on 10% of the daily LOS capacity based on *Guidance for Administration of the Orange County Master Plan of Arterial Highways, dated November 1995 and Amended April 1998.*

8.0 SITE ACCESS AND INTERNAL TRAFFIC CIRCULATION

8.1 VEHICLE QUEUING ANALYSIS AT PROJECT DRIVEWAYS

A vehicle queuing analysis was conducted at four site driveway intersections including two driveway locations on La Paz Road (i.e., Intersections #2 and #3) and two driveway locations on Marguerite Parkway (i.e., Intersections #4 and #5) that are anticipated to provide direct access to and from the proposed project. The purpose of this analysis is to determine whether the vehicular queuing for all key turning movements in and out of the site driveways serving the proposed project would significantly impact the traffic operations within the Village Center as well as on Marguerite Parkway and La Paz Road. Specifically, the queues for the turning movements exiting the four driveways were evaluated to determine if vehicles would cause extensive queuing within the site parking lot that would hinder the safe and efficient operation of the parking areas. In addition, the queues for the left-turn inbound movements at the four site driveway intersections, where provided, were evaluated to determine if vehicles would cause extensive queuing and blockage on the public roadways.

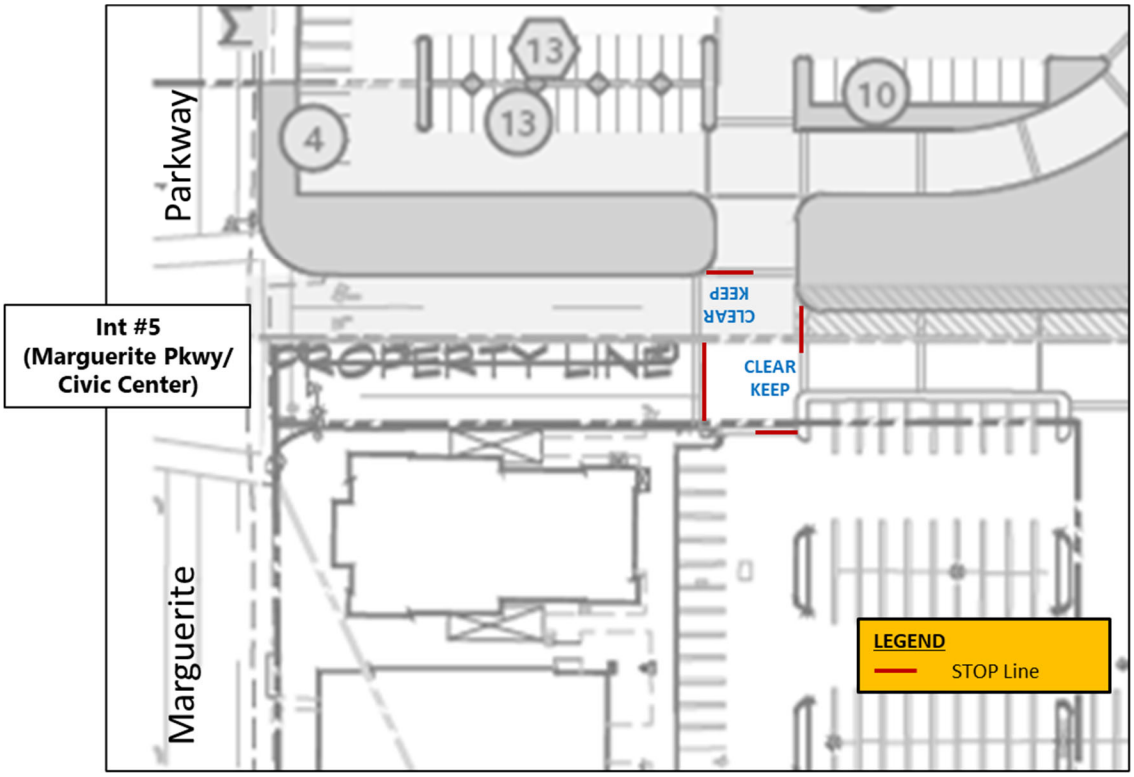
The vehicle queuing analysis was based on the traffic volumes for the Opening Year With-Project scenario for both the AM and PM peak hours. This scenario was selected because it has the highest traffic volumes of all the scenarios studied. The vehicle queuing analysis worksheets are provided in **Appendix G**.

Table 8.1 summarizes the vehicle queuing analysis results. The vehicle queues are based on the 95th percentile queues. The table shows that the 95th percentile vehicle queues for all key turning movements at the proposed project site access points would be shorter than the vehicle queuing capacities at those locations, except for the westbound left-turn outbound movement at Intersection #5 during the PM peak hour. It should be noted this outbound traffic movement would not result in vehicle queues outside of the Village Center site and therefore would not cause adverse traffic impact to Marguerite Parkway. Within the site, the installation of "Keep Clear" road markings at the internal intersection located immediately to the east of Intersection #5 as shown in **Figure 8.1** is recommended in order to prevent vehicle blockage within the site.

TABLE 8.1 – VEHICLE QUEUING ANALYSIS AT PROJECT DRIVEWAYS

Study Intersection		Turning Movement	AM Peak Hour		PM Peak Hour	
			95th Percentile Vehicle Queue (ft)	Queuing Capacity (ft)	95th Percentile Vehicle Queue (ft)	Queuing Capacity (ft)
2	La Paz Road & Village Center (West Driveway)	NB Right Out	<10	100	<10	100
3	La Paz Road & Village Center (East Driveway)	WB Left In	61	95	93	95
		NB Left Out	20	50	27	50
		NB Right Out	16	50	32	50
4	Marguerite Parkway & Village Center Driveway (near Union Bank)	WB Right Out	<10	170	18	170
5	Marguerite Parkway & Civic Center/Village Center N	SB Left In	143	330	306	330
		WB Left Out	110	170	215	170
		WB Right Out	48	170	97	170

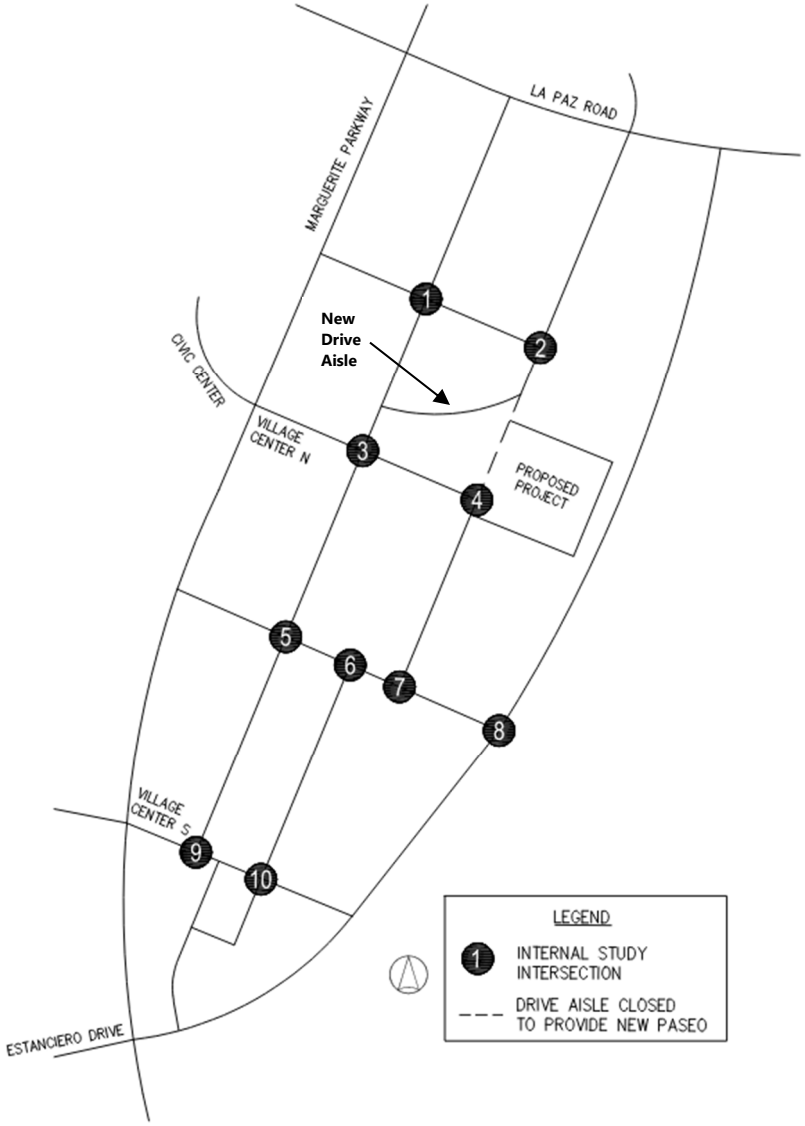
FIGURE 8.1 – RECOMMENDATION AT INTERNAL INTERSECTION



8.2 INTERNAL INTERSECTION ANALYSIS

As requested by City staff, the internal traffic circulation of the Village Center was evaluated for the weekday AM and PM peak hours to determine if the proposed project traffic and with the reconfiguration of the parking lot circulation due to the addition of the new paseo would cause adverse impacts to the traffic operations within the site. It should be noted that due to the new paseo, the north-south drive aisle located immediately west of the proposed development would be closed and a new reconfigured drive aisle would be provided that would divert traffic within the site's parking area. Ten key internal study intersections were selected for evaluation. The 10 intersections and the new and closed drive aisles are depicted in **Figure 8.2**.

FIGURE 8.2 – INTERNAL INTERSECTION LOCATIONS



The existing traffic volumes at the internal study intersections were based on traffic counts collected during the AM and PM peak periods on Thursday, September 29, 2022, except at internal intersections #3, #5, and #9 where traffic volumes were taken from the *Traffic Impact Analysis (TIA) Report for Village Center Chick-Fil-A, January 14, 2022*. The traffic count sheets are provided in **Appendix A**. The existing traffic volumes for the weekday AM and PM peak hours are shown in **Figures 8.3 and 8.4**, respectively. The lane configurations and traffic control types for existing conditions are depicted in **Figure 8.5**.

The internal intersections were evaluated for the existing conditions based on the HCM methodology using the Synchro program. The calculation worksheets are provided in **Appendix H** of this report.

FIGURE 8.3 – EXISTING WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES AT INTERNAL INTERSECTIONS

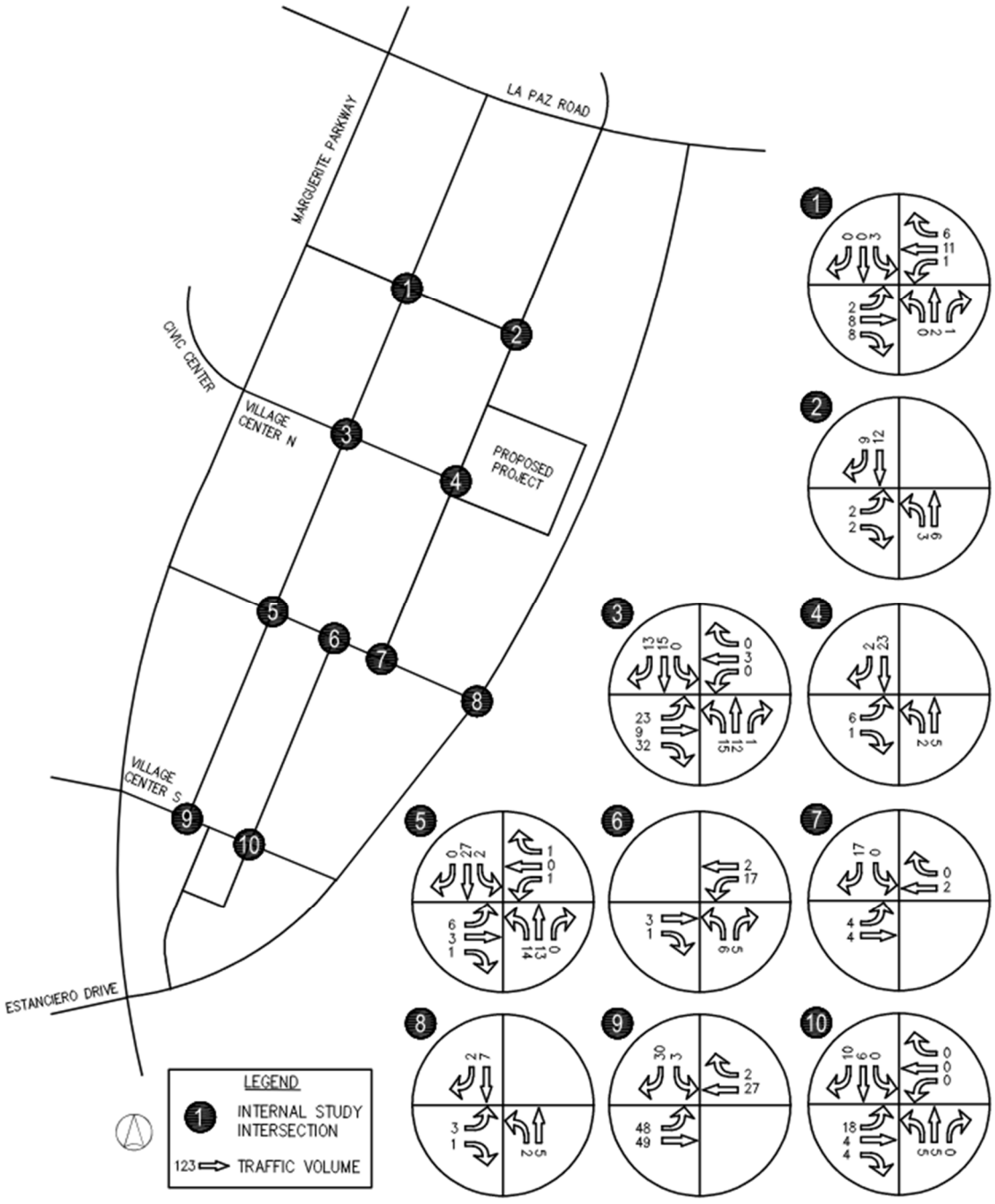


FIGURE 8.4 – EXISTING WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES AT INTERNAL INTERSECTIONS

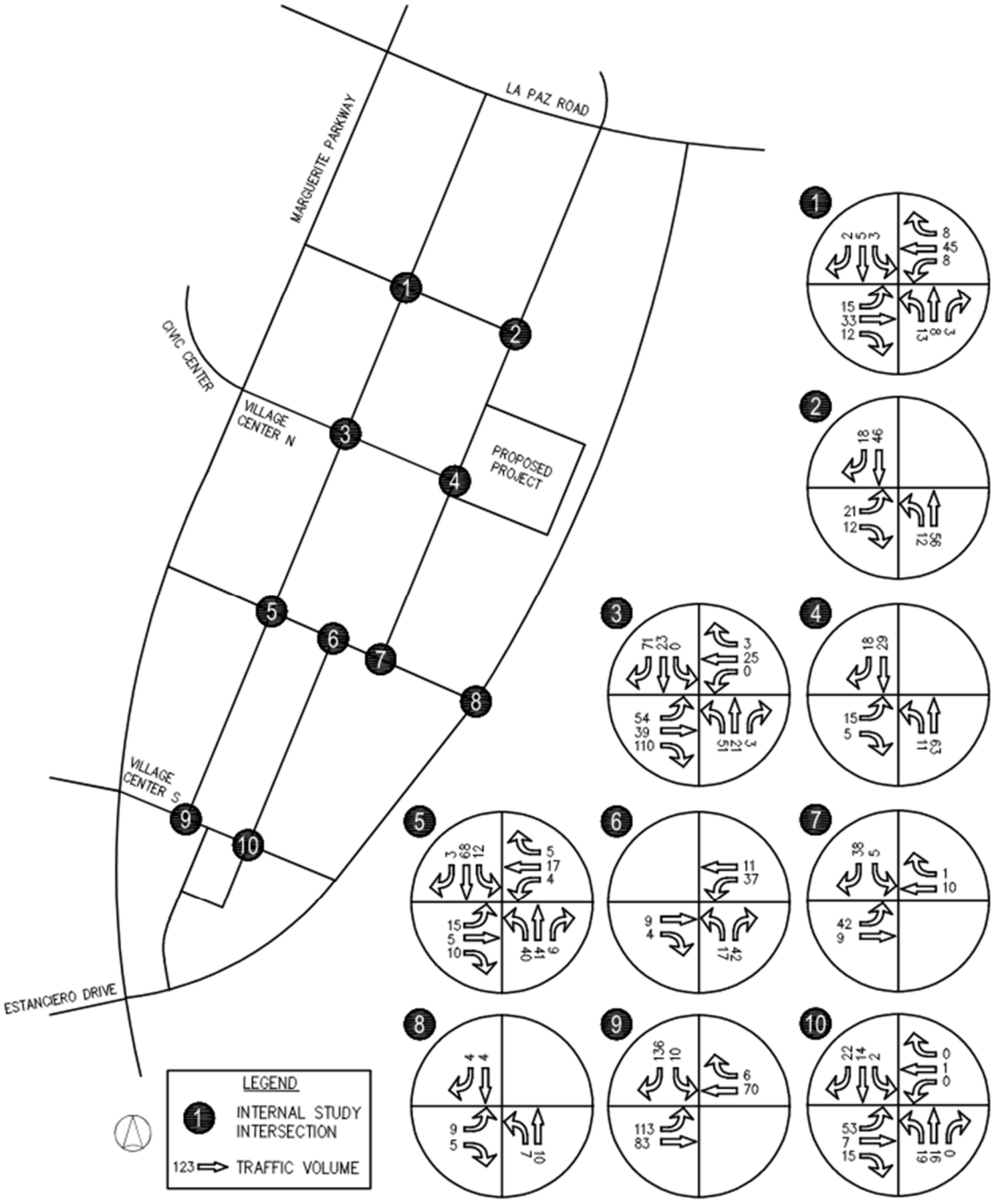
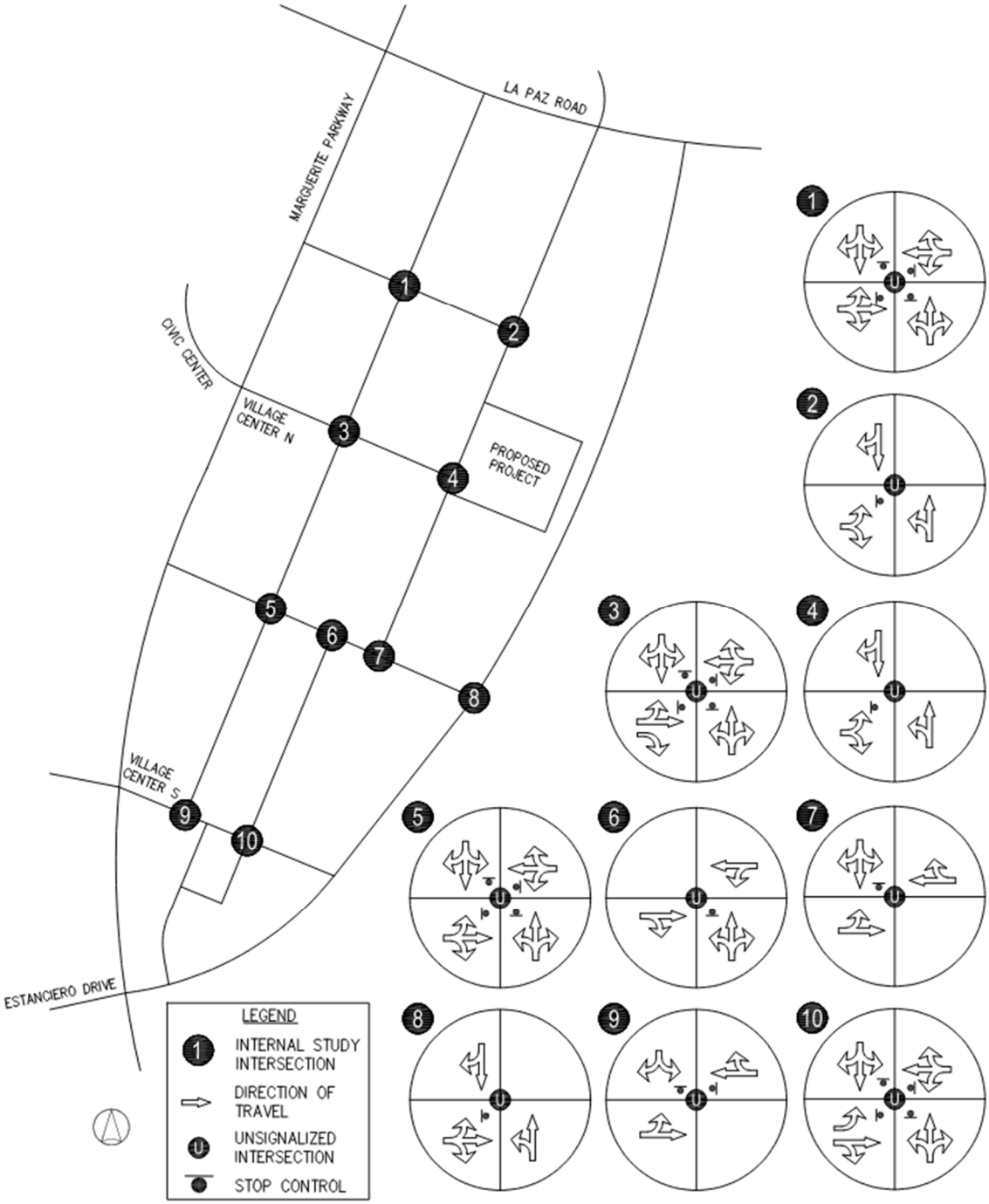


FIGURE 8.5 – EXISTING INTERNAL INTERSECTION GEOMETRY



In addition, the internal intersections were evaluated for the Opening Year With-Project conditions. The traffic volumes for this scenario were determined by adding the trips related to the re-occupation of the vacant land uses as described in Section 5.2 and the proposed project traffic including any traffic diversions associated with the new paseo within the site to the existing traffic volumes. The traffic volumes at the internal intersections associated with the vacant land uses and the traffic diversions are provided in **Appendix I and J** of this report, respectively. The project trip distributions are shown in **Figure 8.6**. The project traffic volumes at the internal intersections are shown in **Figures 8.7 and 8.8** for the weekday AM and PM peak hours, respectively. The internal intersection lane geometries for the Opening Year With Project scenario, which includes reconfiguration of drive aisles with the addition of the new paseo, are shown in **Figure 8.9**.

The Opening Year With-Project traffic volumes at the internal intersections for the weekday AM and PM peak hours are shown in **Figures 8.10 and 8.11**, respectively. The calculation worksheets are provided in **Appendix K** of this report.

FIGURE 8.6 – PROJECT TRIP DISTRIBUTION PERCENTAGES AT INTERNAL INTERSECTIONS

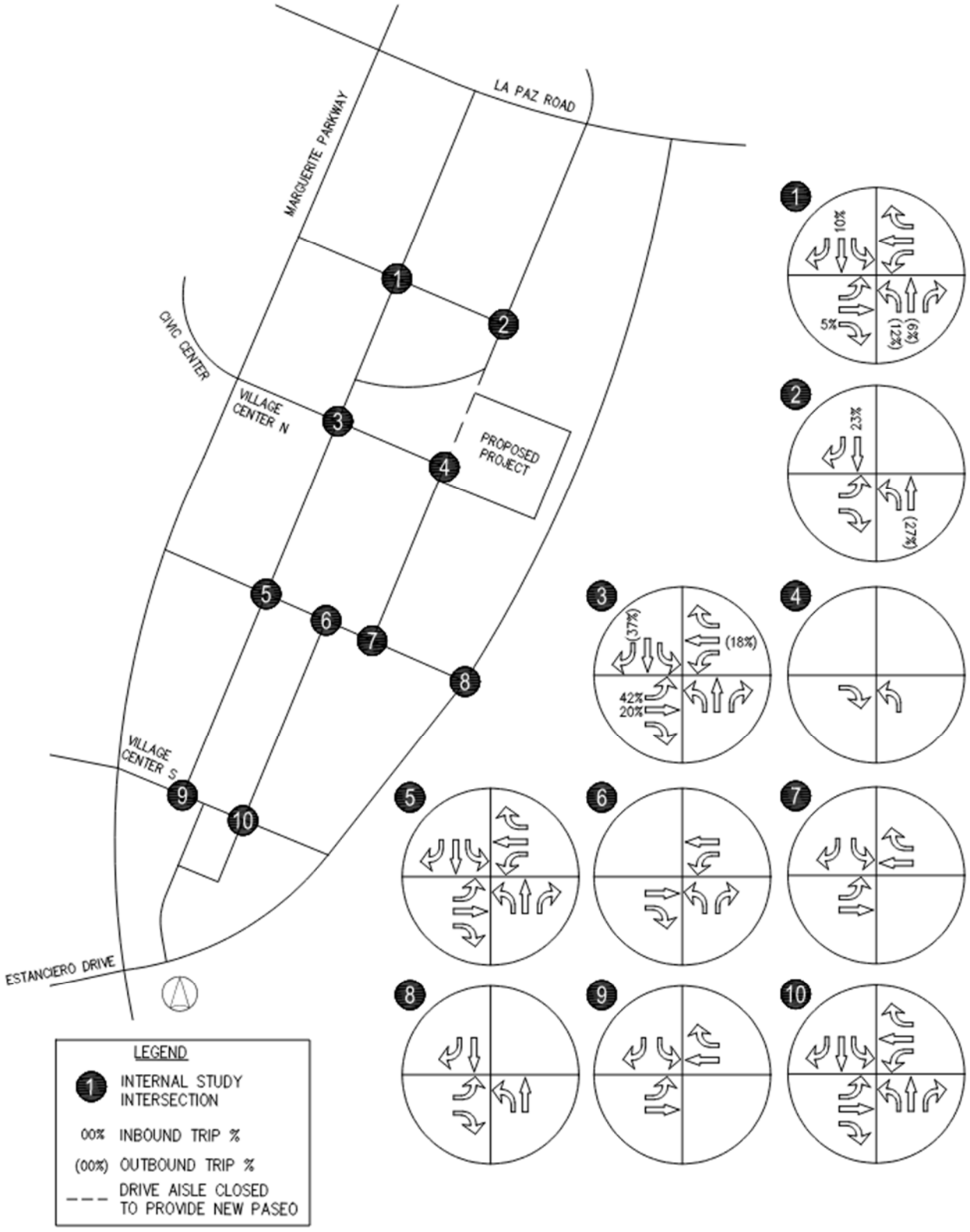


FIGURE 8.7 – PROJECT ONLY TRAFFIC VOLUMES AT INTERNAL INTERSECTIONS – AM PEAK HOUR

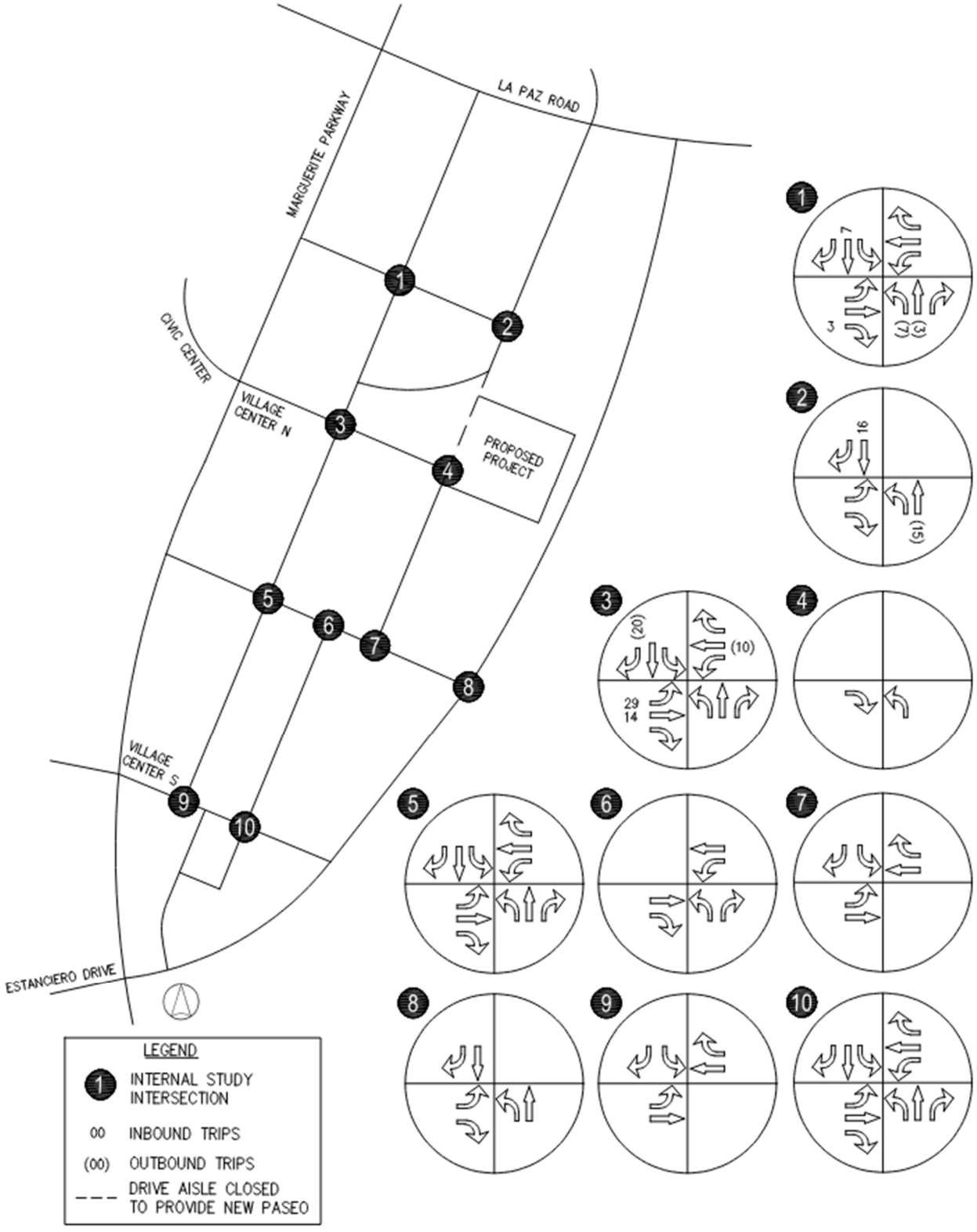


FIGURE 8.8 – PROJECT ONLY TRAFFIC VOLUMES AT INTERNAL INTERSECTIONS – PM PEAK HOUR

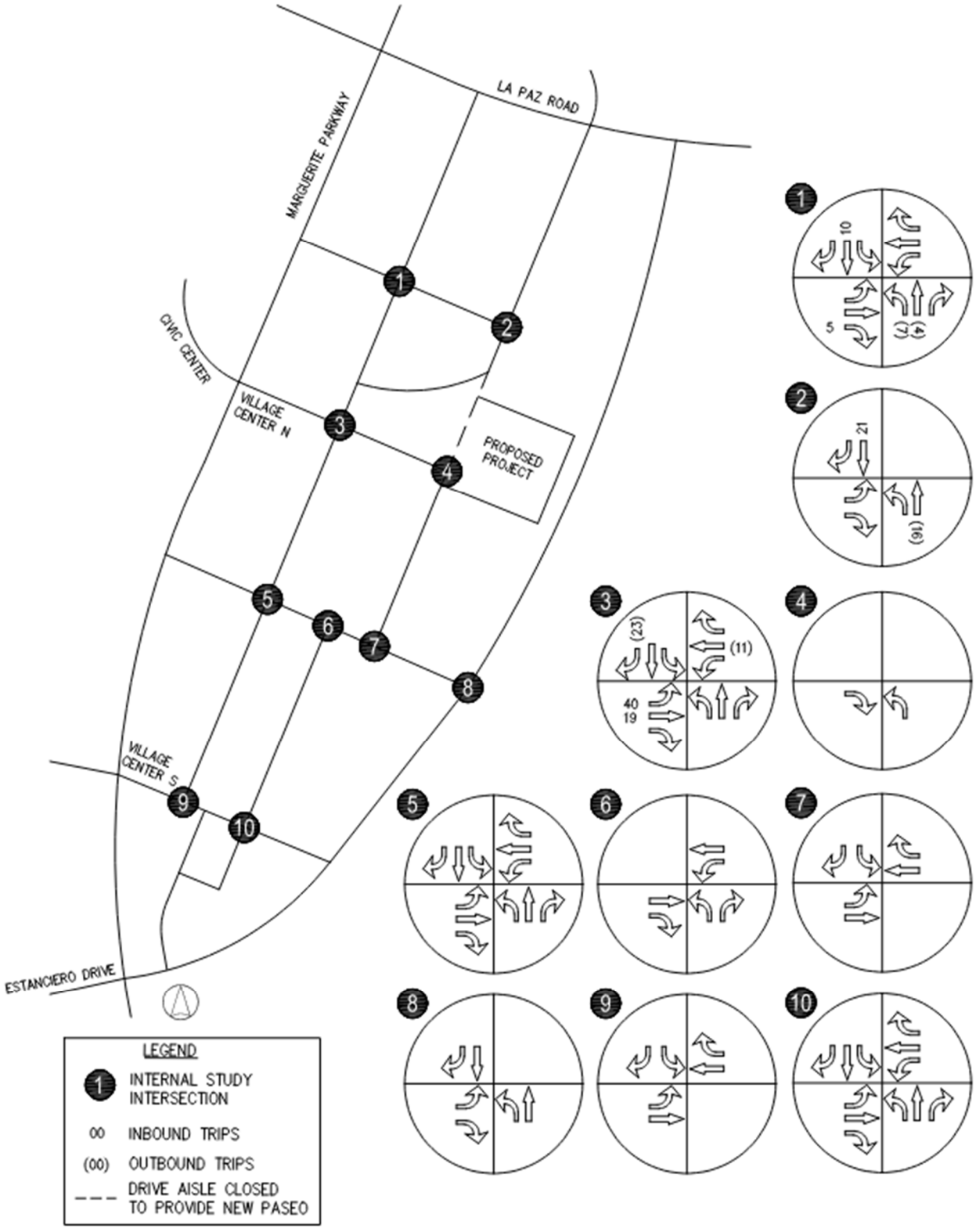


FIGURE 8.9 – OPENING YEAR WITH PROJECT INTERNAL INTERSECTION GEOMETRY

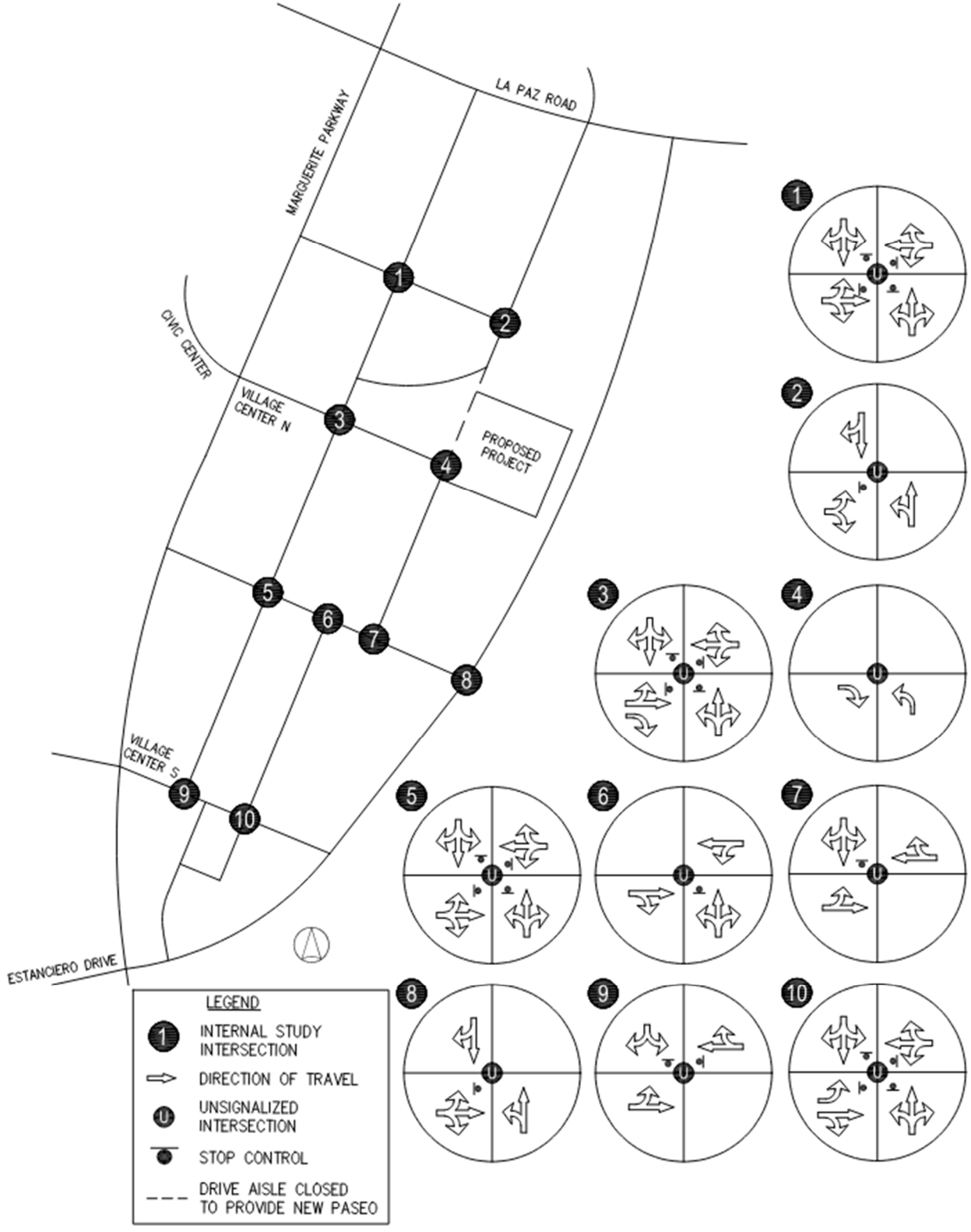


FIGURE 8.10 – OPENING YEAR WITH-PROJECT TRAFFIC VOLUMES AT INTERNAL INTERSECTIONS – AM PEAK HOUR

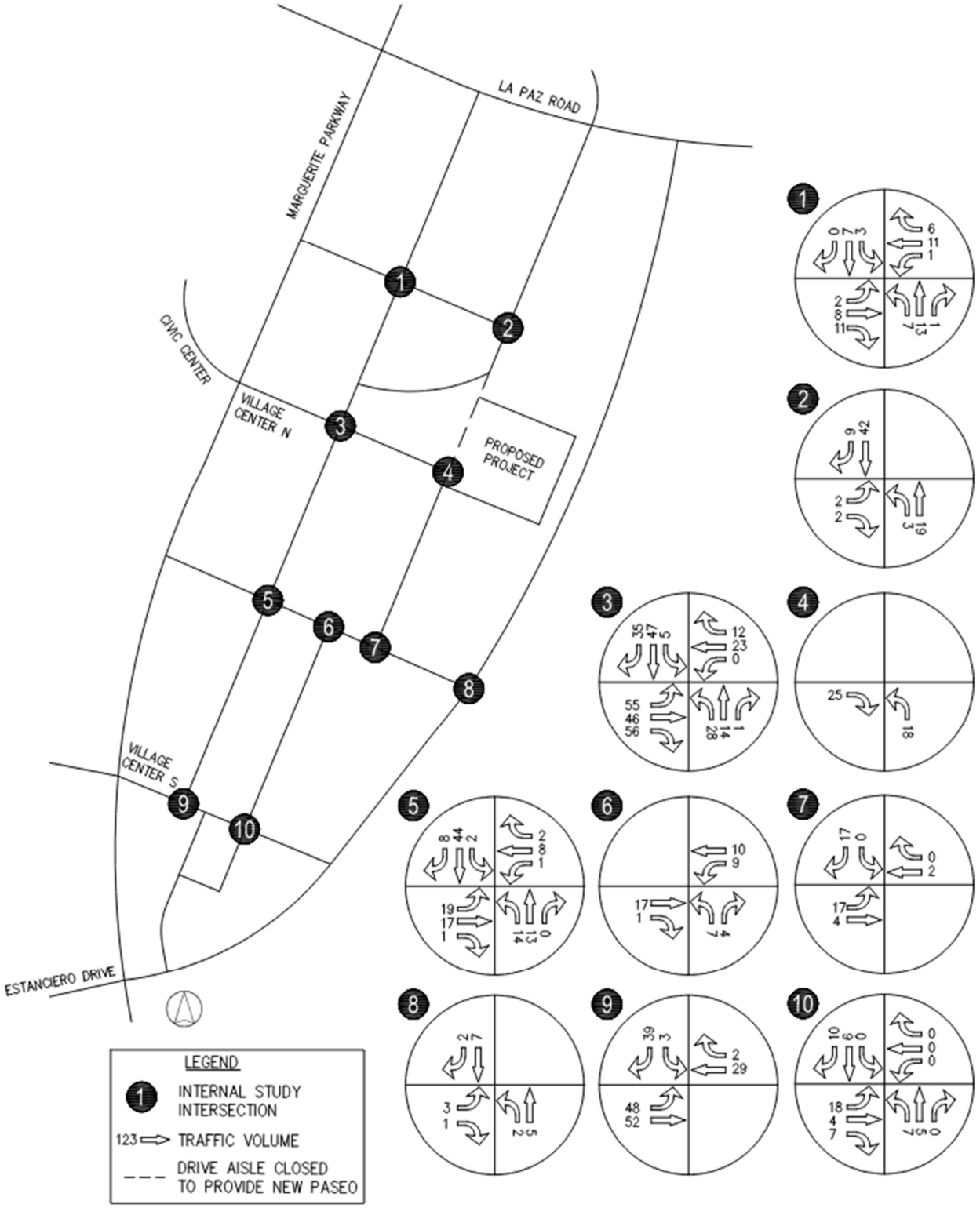


FIGURE 8.11 – OPENING YEAR WITH-PROJECT TRAFFIC VOLUMES AT INTERNAL INTERSECTIONS – PM PEAK HOUR

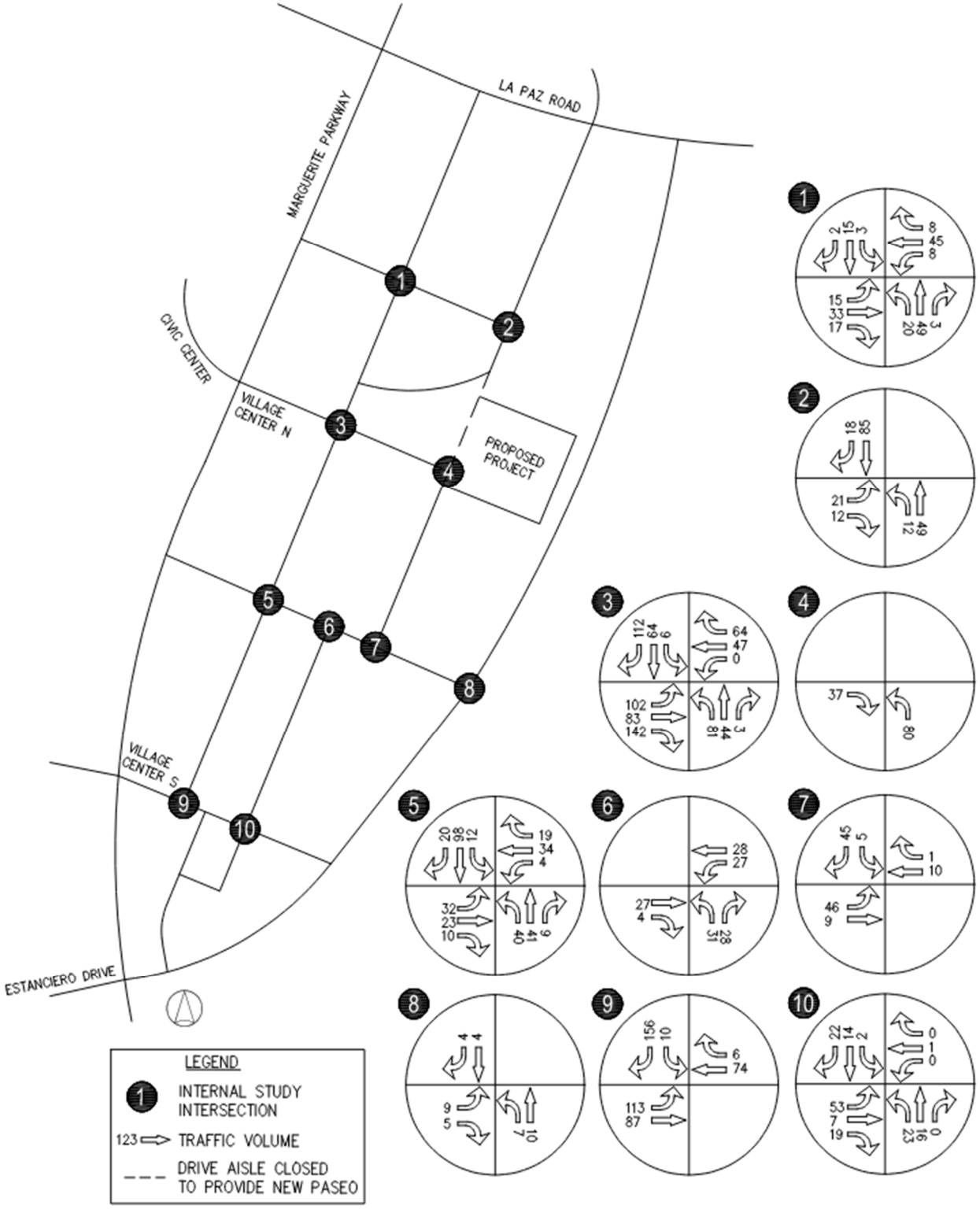


Table 8.2 summarizes the average delay and level of service results at the 10 internal study intersections. As shown in this table, all of the internal study intersections are currently operating at and are anticipated to continue to operate at an acceptable level of service based on the City's traffic impact criteria.

TABLE 8.2 – INTERNAL INTERSECTION LOS PERFORMANCE

Internal Intersection	Peak Hour	Existing		Opening Year (2025) With-Project	
		Delay (Sec)	LOS	Delay (Sec)	LOS
1	AM	6.9	A	7.0	A
	PM	7.3	A	7.6	A
2	AM	1.6	A	0.7	A
	PM	2.4	A	2.0	A
3	AM	7.3	A	7.9	A
	PM	8.1	A	10.0	A
4	AM	7.0	A	-	-
	PM	7.3	A	-	-
5	AM	7.1	A	7.3	A
	PM	7.6	A	8.0	A
6	AM	6.4	A	3.3	A
	PM	6.6	A	5.1	A
7	AM	6.5	A	6.7	A
	PM	6.4	A	6.6	A
8	AM	2.5	A	2.5	A
	PM	4.4	A	4.4	A
9	AM	7.4	A	7.4	A
	PM	8.5	A	8.7	A
10	AM	7.3	A	7.3	A
	PM	7.7	A	7.6	A

LOS = Level-of-Service
For the Opening Year With-Project conditions, Intersection #4 will not have any conflicting traffic movements. Therefore, no delay is reported.

In addition, the storage capacities at all approaches of the 10 internal intersections were also reviewed to determine if there is adequate storage within the internal roadway system. **Table 8.3** summarizes the 95th percentile vehicle queuing compared to the storage capacities at all approaches at the 10 internal intersections during the weekday AM and PM peak hours. Based on the analysis results, there is adequate storage length at all approaches at the 10 internal intersections. Therefore, no adverse vehicle queuing within the site is anticipated to occur with the proposed development.

TABLE 8.3 – INTERNAL INTERSECTION QUEUING ANALYSIS

Internal Intersection		Estimated Storage Capacity (Feet)	Existing				Opening Year (2025) With-Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			95th-Percentile Vehicle Queue (Feet)	Adequate Storage	95th-Percentile Vehicle Queue (Feet)	Adequate Storage	95th-Percentile Vehicle Queue (Feet)	Adequate Storage	95th-Percentile Vehicle Queue (Feet)	Adequate Storage
1	NB	250	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	SB	350	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	EB	170	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	WB	230	<10	Yes	<10	Yes	<10	Yes	<10	Yes
2	NB	270	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	SB	370	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	EB	220	<10	Yes	<10	Yes	<10	Yes	<10	Yes
3	NB	330	<10	Yes	<10	Yes	<10	Yes	16	Yes
	SB	250	<10	Yes	<10	Yes	<10	Yes	22	Yes
	EB LT/Thr	170	<10	Yes	<10	Yes	<10	Yes	28	Yes
	EB RT	170	<10	Yes	<10	Yes	<10	Yes	16	Yes
	WB	250	<10	Yes	<10	Yes	<10	Yes	12	Yes
4	NB	340	<10	Yes	<10	Yes	-	-	-	-
	SB	270	<10	Yes	<10	Yes	-	-	-	-
	EB	240	<10	Yes	<10	Yes	-	-	-	-
5	NB	410	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	SB	330	<10	Yes	<10	Yes	<10	Yes	12	Yes
	EB	180	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	WB	410	<10	Yes	<10	Yes	<10	Yes	<10	Yes
6	NB	400	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	EB	100	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	WB	310	<10	Yes	<10	Yes	<10	Yes	<10	Yes
7	SB	340	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	EB	180	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	WB	240	<10	Yes	<10	Yes	<10	Yes	<10	Yes
8	NB	510	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	SB	1130	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	EB	400	<10	Yes	<10	Yes	<10	Yes	<10	Yes
9	SB	410	<10	Yes	<10	Yes	<10	Yes	16	Yes
	EB	70	<10	Yes	22	Yes	<10	Yes	22	Yes
	WB	100	<10	Yes	<10	Yes	<10	Yes	<10	Yes
10	NB	90	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	SB	410	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	EB	190	<10	Yes	<10	Yes	<10	Yes	<10	Yes
	WB	90	<10	Yes	<10	Yes	<10	Yes	<10	Yes

Notes:
NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
Max. queue is based on 95th percentile vehicle queue per lane. The queue in vehicles reported in the Synchro program was multiplied by 20 feet per vehicle to estimate the queue in feet.
For the Opening Year With-Project conditions, Intersection #4 will not have any conflicting traffic movements. Therefore, no queue is reported.

9.0 PARKING ANALYSIS

9.1 PARKING ANALYSIS OVERVIEW

As requested, a parking demand analysis was conducted in relation with the proposed site and building improvements at the Village Center. The parking study has been prepared to establish the baseline parking requirement of the Project and assesses the parking implications associated with the proposed mix of uses for existing vacant suites as the tenancy at the retail center continues to evolve. Pursuant to the City of Mission Viejo requirements and consistent with prior parking studies prepared for similar commercial centers, a parking study has been prepared as a part of the future occupation of 17,470 SF of floor area with a various mix of retail and restaurant tenants. The parking analysis evaluates the commercial center's parking requirements in a four (4) step process, as listed below:

- Calculates the Code-based parking requirements for the Village Center based on the application of City Code parking ratios.
- Utilizes previously collected actual field-study parking demands at the Village Center during the weekday (Thursday and Friday) and weekend (Saturday) as the basis of the analysis to establish the Project's actual parking demand.
- Estimates the Village Center's future parking demand of future tenants (if any) and the proposed Project through the application of the Shared Parking concept, as outlined in the City of Mission Viejo Municipal Code.
- Establishes a Parking Management Plan to mitigate potential on-site impacts.

Existing and Future Development

Table 9.1 summarizes the existing/vacant/proposed land uses and associated floor areas at the Village Center. The table is divided into two (2) sections, the existing occupied tenants and the vacant & Project-related tenant spaces. As shown, there is a current occupied floor area of 189,282 SF, which is comprised of a complimentary mix of land uses consisting of retail use, restaurant use, medical/dental office use, barber shop use, health club/gym use, banking use, and bowling alley use. **Table 9.1** indicates that the four (4) vacant suites have a total 33,025 SF and the Project proposes to construct a total of 16,770 SF of restaurant use and 700 SF of retail use. With the re-occupancy of the vacant suites and the construction of the Project, the Village Center will comprise of a total of 239,777 SF, which is 15,555 SF less than the original construction of the center.

Parking Supply

Based on a field assessment, the commercial center provides a total of 1,147 parking spaces (1,108 standard spaces, 39 accessible spaces). For detailed study purposes, the commercial center parking lot was divided into eight (8) zones as illustrated on **Figure 9.1**. **Tables 9.2 and 9.3** provide a breakdown of the existing and proposed parking supply within each zone, which are identified as Zone 1 through 8. The construction of the Project will result in a loss of 47 parking spaces, providing a future supply of 1,100 parking spaces (1,061 standard spaces, 39 ADA spaces), as shown on Table 9.2.

TABLE 9.1 – EXISTING AND PROPOSED LAND USE SUMMARY

Address	Suite	Tenant Name	Land Use	Total Building Sq Ft Per 2015
27092	-	Carl's Jr.	Restaurant	**2,983**
27142	-	Big Lots	Retail Commercial	17,000
27142	-	Big Lots	Storage	8,966
				25,966
25270	A	Just Fur Paws	Retail Commercial	890
25270	B	Top Care Hair and Nail	Barber Shop	750
25270	C	Vida Dentistry HADA Family Dental	Medical / Dental Office	1186
25270	D	Vision Care	Medical / Dental Office	890
25270	E	The Shirt Cannery	Retail Commercial	1513
				5229
25272	-	CVS Pharmacy 24Hrs	Retail Commercial	17500
25272	-	CVS Pharmacy	Storage	13,052
				30,552
25280	A	MK Nails	Service	1440
25280	B1	Poke Wave	Restaurant	1021
25280	B2	Menchie's Frozen Yogurt	Restaurant	1020
25280	C	Jersey Mike's Subs	Restaurant	1785
				5266
25290	C / D	Round Table Pizza	Restaurant	3247
25290	E	Skimmer's Panini Grill	Restaurant	2050
25290	F-1	Mitchell Anthony	Barber Shop	1350
25290	F-2	Grumpy's Barbers	Barber Shop	700
				7347
25402	-	Saddleback Lanes	Bowling Alley	31300
25402	-	New Outdoor seating area	Bowling Alley	1800
				33100
25410	-	Party City	Retail Commercial	11000
25410	-	Trader Joe's	Retail Commercial	12330
25410				**23330**
25502	-	Pets Plus	Retail Commercial	4800
				4800
25522	100	Mission Viejo Dental Associates	Medical / Dental Office	3000
25522	102	High Ground Coffee House	Restaurant	1800
25522				**4800**
25542	-	Del Taco	Restaurant	**1,892**
24582	101	Marque Urgent Care	Medical / Dental Office	2535
24582	102	Eat Thai Cuisine	Restaurant	2023
24582	103	Halo Cuts & Style	Barber Shop	1246
24582	104	Rubio's Coastal Grill	Restaurant	2000
24582				**7804**

TABLE 9.1 – EXISTING AND PROPOSED LAND USE SUMMARY (CONT.)

Address	Suite	Tenant Name	Land Use	Total Building Sq Ft Per 2015
25390	-	Moore's Sewing	Retail Commercial	**4000**
25380	A	Acai Bowl Co.	Restaurant	1380
		Savour Bakery	Restaurant	900
25380	B/C/D	Delizie	Restaurant	3100
25380	E	T-Mobile	Retail Commercial	1000
25380	F	Tikka Wrap	Restaurant	1262
25380	G	Benchmark Funding	Office	1000
25380	H	Sugared Hair Removal & Skincare	Retail Commercial	675
25380	I	Kumon	Retail Commercial	900
25380	J	Diversity Hair Studio	Barber Shop	725
25380	K/L	Harmony Tea Bar	Retail Commercial	1750
25380				**12692**
25350	A	Dansk Dental Clinic (Dr. Hansen)	Medical / Dental Office	1420
25350	B	The Nail Medic	Service	1547
25350	C	Soul Movement Yoga	Health Club	1546
25350	D	CAllie Girl Boutique	Retail Commercial	980
25350				**5493**
25330	A	Kwik Kopy Printing	Retail Commercial	1050
25330	B	Citibank	Bank	4490
25330				**5540**
25276	101	Union Bank	Bank	5490
25276	102	Flame Broiler	Restaurant	998
25276	103/104	Panda Express	Restaurant	2000
25276				**8488**
EXISTING SUBTOTAL SQUARE FOOTAGE				**189,282**
25282	-	Proposed Project - Retail	Retail Commercial	700
25282	-	Proposed Project - Restaurant	Restaurant	16770
				17,470
25290	A	VACANT/ formerly PKSA Karate	Health Club	1586
25290	B	VACANT/formerly Shoe Repair	Retail Commercial	915
				2,501
25310	-	VACANT/formerly Michael's	Retail Commercial	29172
				29,172
25522	101	VACANT/ Formerly Z-Pizza	Restaurant	1152
25522	101	VACANT OUTDOOR SEATING AREA	Restaurant	200
				1,352
PROPOSED/VACANT SUBTOTAL SQUARE FOOTAGE				**50,495**
GRAND TOTAL SQUARE FOOTAGE				**239,777**

FIGURE 9.1 – PARKING ZONE MAP

TABLE 9.2 – EXISTING PARKING SUPPLY SUMMARY

Zone	Standard	Accessible	Total
1	111	2	113
2	110	5	115
3	10	2	12
4	66	0	66
5	59	6	65
6	223	9	232
7	424	15	439
8	105	0	105
Total Inventory	1,108	39	1,147

TABLE 9.3 – PROPOSED PARKING SUPPLY SUMMARY

Zone	Standard	Accessible	Total
1	111	2	113
2	110	5	115
3	10	2	12
4	66	0	66
5	59	6	65
6	223	9	232
7	377	15	392
8	105	0	105
Total Inventory	1,061	39	1,100

9.2 CITY CODE PARKING REQUIREMENTS

The City-code parking calculation for the Project is based on the City's requirements as outlined in the Mission Viejo Municipal Code; Chapter 9-25; *Off-Street Parking Standards*. For the Project land uses, City-code specifies the following:

- Per Section 9.25.020 – Number of Parking Spaces Required:
    - *Restaurants, cafes, bars and other eating and drinking establishments (GFA includes outdoor seating/eating area): 1 space for each 100 SF of public seating area, up to 4,000 GFA, plus 1 space for each 80 SF over 4,000 GFA, with a minimum of 10 spaces.*
    - *Retail Commercial: 1 space for each 200 SF of GFA.*

Table 9.4 presents the City-code parking requirements for the Village Center plus the Project. Based on the above parking ratios and proposed Project land uses, the Project would require 112 parking spaces. While parking is shared globally amongst tenants, it should be noted that the Village Center is comprised of various parcel owners, including the City of Mission Viejo. The City-owned parcel is located within parking Zone 7, which would supply 108 out of the 392 Zone 7 parking spaces. With a parking requirement of 112 parking spaces for the Project, the City-owned parcel would have a parking deficiency of four (4) parking spaces.

As demonstrated in **Table 9.4**, four (4) suites totaling 33,025 SF are currently vacant. As envisioned, the four (4) vacant suites are anticipated to be re-occupied with the following tenant mix:

- 1,586 SF of health club/gym use in Suite 25290A,

- 915 SF of retail use in Suite 25290B,
- 29,172 SF of retail use in Suite 25310,
- 1,352 SF of restaurant use in Suite 25522.

As shown in **Table 9.4**, assuming a 100% tenant occupancy scenario plus the Project and direct application of the City parking codes, the Village Center requires a total of 1,169 spaces. With a proposed parking supply of 1,100 parking spaces for future conditions, a theoretical code parking deficiency of 69 parking spaces is forecast for the entire center.

In addition, the adequacy of the number of accessible parking spaces currently provided were based on the City-code requirements, which specifies as follows:

- Per Section 9.25.025 – Accessible Parking Requirements:
    - *Over 1,001 parking spaces provided: 20, +1 for each 1-100 over 1000*

The Village Center proposes a total of 1,100 parking spaces. Based on City code, a total of 21 accessible parking spaces are required. As previously mentioned, the center will provide a total of 39 accessible parking spaces (18 more than minimum requirement). Therefore, the accessibility parking requirement is met per City code.

As previously discussed, the proposed project also includes an 'Event Barn' that is a proposed amenity for community-based gatherings. The barn will include an assembly consisting of approximately 240 assembly seats or 120 tabled seats with additional space for expanded uses. Approximately 43 parking spaces will be available for this land use within the parking lot adjacent to the trail leading to the facility on the east side of the creek. The parking lot is accessible via La Paz Road and will be shared with the future Santa Margarita Water District Water Treatment Plant. Based on the City Parking Code, 1 space for each 3 fixed seats is required, therefore, the parking supply will accommodate the proposed event space for up to 129 guests. However, it can be anticipated that events greater than 100 guests may be subject to issuance of a "special events" permit. Due to the limited parking supply associated with the barn, the host will be required to draft a parking management plan, outlining how parking will be managed on and/or off-site. Parking management strategies may include valet services, overflow parking areas (i.e. City Hall Lot, World Cup Soccer Field Lot, Norman P. Murray Community Center Lot), and shuttling. An expanded discussion on parking management strategies is provided in **Section 9.5, Parking Management Plan**. It should be noted that the City anticipates that parking will have to be regulated during special events by a security guard (or similar entity) and adequate signage will be required in order to limit guests from parking within the Village Center parking lot and accessing the event space. The Core Area parking lot will not be designated for 'Event Barn' guests.

TABLE 9.4 – CITY CODE PARKING REQUIREMENT

Address	Suite	Tenant Name	Vacant	Land Use	Land Use Category (ULI)	Total Building Sq Ft Per 2015	Parking Rate ## Sq Ft	Total Spaces Required
27092	-	Carl's Jr.		Restaurant	Restaurant	**2,983**	1/100 sq.ft. of public seating area	14.9
27142	-	Big Lots		Retail Commercial	Retail	17,000	200	85.0
27142	-	Big Lots		Storage	Retail	8,966	1000	9.0
						25,966		
25270	A	Just Fur Paws		Retail Commercial	Retail	890	200	4.5
25270	B	Top Care Hair and Nail		Barber Shop	Retail	750	200	3.8
25270	C	Vida Dentistry HADA Family Dental		Medical / Dental Office	Medical/dental office	1186	150	7.9
25270	D	Vision Care		Medical / Dental Office	Medical/dental office	890	150	5.9
25270	E	The Shirt Cannery		Retail Commercial	Retail	1513	200	7.6
						5229		
25272	-	CVS Pharmacy 24Hrs		Retail Commercial	Retail	17500	200	87.5
25272	-	CVS Pharmacy		Storage	Retail	13,052	1,000	13.1
						30,552		
25280	A	MK Nails		Service	Retail	1440	200	7.2
25280	B1	Poke Wave		Restaurant	Restaurant	1021	1/100 sq.ft. of public seating area	5.1
25280	B2	Menchie's Frozen Yogurt		Restaurant	Restaurant	1020	1/100 sq.ft. of public seating area	5.1
25280	C	Jersey Mike's Subs		Restaurant	Restaurant	1785	1/100 sq.ft. of public seating area	8.9
						5266		
25282	-	Proposed Project - Retail	Vacant	Retail Commercial	Retail	700	200	3.5
25282	-	Proposed Project - Restaurant	Vacant	Restaurant	Restaurant	16770	1/100 sq.ft. of public seating area	108.1
						17470		
25290	A	VACANT/ formerly PKSA Karate	Vacant	Health Club	Health club	1586	150	10.6
25290	B	VACANT/formerly Shoe Repair	Vacant	Retail Commercial	Retail	915	200	4.6
25290	C / D	Round Table Pizza		Restaurant	Restaurant	3247	200	16.2
25290	E	Skimmer's Panini Grill		Restaurant	Restaurant	2050	200	10.3
25290	F-1	Mitchell Anthony		Barber Shop	Retail	1350	200	6.8
25290	F-2	Grumpy's Barbers		Barber Shop	Retail	700	200	3.5
						9848		
25310	-	VACANT/formerly Michael's	Vacant	Retail Commercial	Retail	**29172**	200	145.9
25402	-	Saddleback Lanes		Bowling Alley	Adult active entertainment	31300	32 x 5	160.0
25402	-	New Outdoor seating area		Bowling Alley	Adult active entertainment	1800	100	18.0
						33100		
25410	-	Party City		Retail Commercial	Retail	11000	200	55.0
25410	-	Trader Joe's		Retail Commercial	Retail	12330	200	61.7
25410						**23330**		
25502	-	Pets Plus		Retail Commercial	Retail	4800	200	24.0
						4800		
25522	100	Mission Viejo Dental Associates		Medical / Dental Office	Medical/dental office	3000	150	20.0
25522	101	VACANT/ Formerly Z-Pizza	Vacant	Restaurant	Restaurant	1152	1/100 sq.ft. of public seating area	5.8
25522	101	VACANT OUTDOOR SEATING AREA	Vacant	Restaurant	Restaurant	200	1/100 sq.ft. of public seating area	2.0
25522	102	High Ground Coffee House		Restaurant	Restaurant	1800	1/100 sq.ft. of public seating area	9.0
25522						**6152**		
25542	-	Del Taco		Restaurant	Restaurant	**1,892**	1/100 sq.ft. of public seating area	9.5
24582	101	Marque Urgent Care		Medical / Dental Office	Medical/dental office	2535	150	16.9
24582	102	Eat Thai Cuisine		Restaurant	Restaurant	2023	200	10.1
24582	103	Halo Cuts & Style		Barber Shop	Retail	1246	200	6.2
24582	104	Rubio's Coastal Grill		Restaurant	Restaurant	2000	1/100 sq.ft. of public seating area	10.0
24582						**7804**		
25390	-	Moore's Sewing		Retail Commercial	Retail	**4000**	200	20.0
25380	A	Acai Bowl Co.		Restaurant	Restaurant	1380	1/100 sq.ft. of public seating area	6.9
		Savour Bakery		Restaurant	Restaurant	900	1/100 sq.ft. of public seating area	4.5
25380	B/C/D	Delizie		Restaurant	Restaurant	3100	1/100 sq.ft. of public seating area	15.5
25380	E	T-Mobile		Retail Commercial	Retail	1000	200	5.0
25380	F	Tikka Wrap		Restaurant	Restaurant	1262	1/100 sq.ft. of public seating area	6.3
25380	G	Benchmark Funding		Office	Office	1000	200	5.0
25380	H	Sugared Hair Removal & Skincare		Retail Commercial	Retail	675	200	3.4
25380	I	Kumon		Retail Commercial	Retail	900	200	4.5
25380	J	Diversity Hair Studio		Barber Shop	Retail	725	200	3.6
25380	K/L	Harmony Tea Bar		Retail Commercial	Retail	1750	200	8.8
25380						**12692**		
25350	A	Dansk Dental Clinic (Dr. Hansen)		Medical / Dental Office	Medical/dental office	1420	150	9.5
25350	B	The Nail Medic		Service	Retail	1547	200	7.7
25350	C	Soul Movement Yoga		Health Club	Health Club	1546	150	10.3
25350	D	CAllie Girl Boutique		Retail Commercial	Retail	980	200	4.9
25350						**5493**		
25330	A	Kwik Kopy Printing		Retail Commercial	Retail	1050	200	5.3
25330	B	Citibank		Bank	Bank	4490	200	22.5
25330						**5540**		
25276	101	Union Bank		Bank	Bank	5490	200	27.5
25276	102	Flame Broiler		Restaurant	Restaurant	998	1/100 sq.ft. of public seating area	5.0
25276	103/104	Panda Express		Restaurant	Restaurant	2000	1/100 sq.ft. of public seating area	10.0
25276						**8488**		
							Parking Ratio	
						239,777		

Note: 50% of Restaurant square footage used as public dining area for parking requirement calculations. Except for proposed project, where specific seating area sq ft was used in calculation (10,814.5 sq ft of seating area).

Total Pkg Required:	**1169**
Total Pkg Proposed:	1100
Surplus Stalls:	**-69**

Mission Viejo Property:	
Existing Supply:	155
Proposed Supply:	108
Parking Requirement (Proposed Project):	112
Surplus Stalls:	**-4**

9.3 OBSERVED PARKING DEMAND

In order to determine the existing (baseline) parking demand of the existing land uses at the Village Center, observed parking surveys were conducted. When compared to the parking demand calculated through the City's Code, the observed parking counts are expected to provide a more accurate and realistic expectation of the site's parking demand and dynamics of the site. These surveys were collected by Transportation Studies, Inc. (TSI) on an hourly basis during the following:

- Thursday, December 2, 2021 from 8:00 AM to 10:00 PM
- Friday, December 3, 2021 from 8:00 AM to 10:00 PM
- Saturday, December 4, 2021 from 8:00 AM to 10:00 PM

The parking surveys were conducted during peak December weekday and weekend commercial center operations and during typical (non-rain) weather conditions.

As previously illustrated in Figure 9.1, the Village Center was divided into eight (8) parking zones. All parked vehicles during each hourly survey round were counted and recorded. It should be noted that following locations were vacant during the parking surveys:

- 25276 Marguerite Pwky. – Panda Express Under Construction during Survey (2,000 SF)
- 25282 Marguerite Pwky. – Previously Stein Mart Building (37,170 SF)
- 25290 Marguerite Pwky. – Previously Health Club/Gym (1,586 SF) and Retail (915 SF)
- 25310 Marguerite Pwky. – Previously Michael's Building (29,172 SF)
- 25380 Marguerite Pwky., Suite J – Previously Hair Studio (725 SF)

A summary of the results of the parking surveys that were performed on a Thursday, Friday, and Saturday are summarized in **Tables 9.5, 9.6, and 9.7**, respectively. As shown in Table X, the study site experienced a weekday (Thursday) peak parking demand of 498 vehicles (43.4% utilization) within the entire site at 1:00 PM. In addition, as shown in Table X, the study site experienced a weekday (Friday) peak parking demand of 551 vehicles (48.0% utilization) within the entire site at 12:00 PM. Lastly, as shown in Table X, the study site experienced a weekend (Saturday) peak parking demand of 517 vehicles (45.1% utilization) within the entire site at 12:00 PM. Given these results, there is adequate parking on site to accommodate the existing occupied land uses.

It should be noted that based on City code, the existing occupied uses (during the date of the survey collection) would require 882 parking spaces, whereas the existing observed peak demand for the current tenant mix totaled 551 spaces (38% less than code).

TABLE 9.5 – PARKING UTILIZATION SUMMARY – THURSDAY, DECEMBER 2, 2021

Parking Utilization Summary – Thursday December 2, 2021 [1]

Time of Day	ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5		ZONE 6		ZONE 7		ZONE 8		TOTAL	
	Number of Parked Cars	Percent Utilization [2]	Number of Parked Cars	Percent Utilization [3]	Number of Parked Cars	Percent Utilization [4]	Number of Parked Cars	Percent Utilization [5]	Number of Parked Cars	Percent Utilization [6]	Number of Parked Cars	Percent Utilization [7]	Number of Parked Cars	Percent Utilization [8]	Number of Parked Cars	Percent Utilization [9]	Number of Parked Cars	Percent Utilization [10]
8:00 AM	20	17.7%	42	36.5%	0	0.0%	14	21.2%	24	36.9%	12	5.2%	28	6.4%	8	7.6%	148	12.9%
9:00 AM	24	21.2%	30	26.1%	1	8.3%	13	19.7%	39	60.0%	24	10.3%	64	14.6%	12	11.4%	207	18.0%
10:00 AM	25	22.1%	41	35.7%	2	16.7%	19	28.8%	43	66.2%	45	19.4%	97	22.1%	18	17.1%	290	25.3%
11:00 AM	37	32.7%	61	53.0%	1	8.3%	22	33.3%	51	78.5%	66	28.4%	136	31.0%	28	26.7%	402	35.0%
12:00 PM	35	31.0%	61	53.0%	1	8.3%	22	33.3%	56	86.2%	78	33.6%	168	38.3%	29	27.6%	450	39.2%
1:00 PM	33	29.2%	74	64.3%	3	25.0%	22	33.3%	**65**	**100.0%**	83	35.8%	**188**	**42.8%**	30	28.6%	**498**	**43.4%**
2:00 PM	42	37.2%	80	69.6%	3	25.0%	**25**	**37.9%**	50	76.9%	81	34.9%	132	30.1%	**34**	**32.4%**	447	39.0%
3:00 PM	40	35.4%	78	67.8%	3	25.0%	20	30.3%	46	70.8%	86	37.1%	127	28.9%	32	30.5%	432	37.7%
4:00 PM	**43**	**38.1%**	71	61.7%	2	16.7%	21	31.8%	49	75.4%	82	35.3%	120	27.3%	26	24.8%	414	36.1%
5:00 PM	39	34.5%	79	68.7%	2	16.7%	19	28.8%	49	75.4%	89	38.4%	113	25.7%	23	21.9%	413	36.0%
6:00 PM	35	31.0%	102	88.7%	**7**	**58.3%**	19	28.8%	38	58.5%	126	54.3%	101	23.0%	17	16.2%	445	38.8%
7:00 PM	33	29.2%	**110**	**95.7%**	**7**	**58.3%**	19	28.8%	35	53.8%	**130**	**56.0%**	98	22.3%	17	16.2%	449	39.1%
8:00 PM	20	17.7%	79	68.7%	**7**	**58.3%**	15	22.7%	18	27.7%	105	45.3%	42	9.6%	7	6.7%	293	25.5%
9:00 PM	10	8.8%	30	26.1%	4	33.3%	13	19.7%	13	20.0%	47	20.3%	21	4.8%	5	4.8%	143	12.5%
10:00 PM	5	4.4%	21	18.3%	3	25.0%	11	16.7%	8	12.3%	31	13.4%	20	4.6%	3	2.9%	102	8.9%

Notes:

[1] On-site parking surveys conducted by Transportation Studies, Inc. (TSI).
[2] Parking utilization percentages calculated based on an existing on-site parking availability of 113 spaces in Zone 1.
[3] Parking utilization percentages calculated based on an existing on-site parking availability of 115 spaces in Zone 2.
[4] Parking utilization percentages calculated based on an existing on-site parking availability of 12 spaces in Zone 3.
[5] Parking utilization percentages calculated based on an existing on-site parking availability of 66 spaces in Zone 4.
[6] Parking utilization percentages calculated based on an existing on-site parking availability of 65 spaces in Zone 5.
[7] Parking utilization percentages calculated based on an existing on-site parking availability of 232 spaces in Zone 6.
[8] Parking utilization percentages calculated based on an existing on-site parking availability of 439 spaces in Zone 7.
[9] Parking utilization percentages calculated based on an existing on-site parking availability of 105 spaces in Zone 8.
[10] Parking utilization percentages calculated based on an existing on-site parking availability of 1,147 spaces in Zones 1 through 8.
Bold, highlighted cells represent peak observed parking demands.

TABLE 9.6 – PARKING UTILIZATION SUMMARY – FRIDAY, DECEMBER 3, 2021

Parking Utilization Summary – Friday December 3, 2021 [1]

Time of Day	ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5		ZONE 6		ZONE 7		ZONE 8		TOTAL	
	Number of Parked Cars	Percent Utilization [2]	Number of Parked Cars	Percent Utilization [3]	Number of Parked Cars	Percent Utilization [4]	Number of Parked Cars	Percent Utilization [5]	Number of Parked Cars	Percent Utilization [6]	Number of Parked Cars	Percent Utilization [7]	Number of Parked Cars	Percent Utilization [8]	Number of Parked Cars	Percent Utilization [9]	Number of Parked Cars	Percent Utilization [10]
8:00 AM	7	6.2%	28	24.3%	0	0.0%	14	21.2%	18	27.7%	18	7.8%	40	9.1%	8	7.6%	133	11.6%
9:00 AM	14	12.4%	38	33.0%	2	16.7%	16	24.2%	32	49.2%	35	15.1%	58	13.2%	11	10.5%	206	18.0%
10:00 AM	25	22.1%	38	33.0%	1	8.3%	18	27.3%	44	67.7%	66	28.4%	129	29.4%	22	21.0%	343	29.9%
11:00 AM	40	35.4%	50	43.5%	1	8.3%	24	36.4%	56	86.2%	64	27.6%	146	33.3%	24	22.9%	405	35.3%
12:00 PM	47	41.6%	110	95.7%	1	8.3%	25	37.9%	**63**	**96.9%**	80	34.5%	**195**	**44.4%**	**30**	**28.6%**	**551**	**48.0%**
1:00 PM	30	26.5%	80	69.6%	1	8.3%	26	39.4%	55	84.6%	77	33.2%	181	41.2%	**30**	**28.6%**	480	41.8%
2:00 PM	40	35.4%	82	71.3%	1	8.3%	24	36.4%	53	81.5%	86	37.1%	144	32.8%	27	25.7%	457	39.8%
3:00 PM	39	34.5%	80	69.6%	1	8.3%	23	34.8%	41	63.1%	85	36.6%	174	39.6%	27	25.7%	470	41.0%
4:00 PM	41	36.3%	77	67.0%	1	8.3%	19	28.8%	37	56.9%	81	34.9%	131	29.8%	25	23.8%	412	35.9%
5:00 PM	**56**	**49.6%**	**115**	**100.0%**	2	16.7%	23	34.8%	41	63.1%	97	41.8%	124	28.2%	27	25.7%	485	42.3%
6:00 PM	41	36.3%	86	74.8%	4	33.3%	20	30.3%	41	63.1%	100	43.1%	109	24.8%	20	19.0%	421	36.7%
7:00 PM	31	27.4%	85	73.9%	**5**	**41.7%**	20	30.3%	37	56.9%	**121**	**52.2%**	70	15.9%	16	15.2%	385	33.6%
8:00 PM	41	36.3%	85	73.9%	**5**	**41.7%**	17	25.8%	27	41.5%	96	41.4%	34	7.7%	14	13.3%	319	27.8%
9:00 PM	25	22.1%	73	63.5%	**5**	**41.7%**	17	25.8%	24	36.9%	86	37.1%	26	5.9%	9	8.6%	265	23.1%
10:00 PM	7	6.2%	45	39.1%	**5**	**41.7%**	10	15.2%	14	21.5%	52	22.4%	16	3.6%	3	2.9%	152	13.3%

Notes:

[1] On-site parking surveys conducted by Transportation Studies, Inc. (TSI).

[2] Parking utilization percentages calculated based on an existing on-site parking availability of 113 spaces in Zone 1.

[3] Parking utilization percentages calculated based on an existing on-site parking availability of 115 spaces in Zone 2.

[4] Parking utilization percentages calculated based on an existing on-site parking availability of 12 spaces in Zone 3.

[5] Parking utilization percentages calculated based on an existing on-site parking availability of 66 spaces in Zone 4.

[6] Parking utilization percentages calculated based on an existing on-site parking availability of 65 spaces in Zone 5.

[7] Parking utilization percentages calculated based on an existing on-site parking availability of 232 spaces in Zone 6.

[8] Parking utilization percentages calculated based on an existing on-site parking availability of 439 spaces in Zone 7.

[9] Parking utilization percentages calculated based on an existing on-site parking availability of 105 spaces in Zone 8.

[10] Parking utilization percentages calculated based on an existing on-site parking availability of 1,147 spaces in Zones 1 through 8.

Bold, highlighted cells represent peak observed parking demands.

TABLE 9.7 – PARKING UTILIZATION SUMMARY – SATURDAY, DECEMBER 4, 2021

Parking Utilization Summary – Saturday December 4, 2021 [1]

Time of Day	ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5		ZONE 6		ZONE 7		ZONE 8		TOTAL	
	Number of Parked Cars	Percent Utilization [2]	Number of Parked Cars	Percent Utilization [3]	Number of Parked Cars	Percent Utilization [4]	Number of Parked Cars	Percent Utilization [5]	Number of Parked Cars	Percent Utilization [6]	Number of Parked Cars	Percent Utilization [7]	Number of Parked Cars	Percent Utilization [8]	Number of Parked Cars	Percent Utilization [9]	Number of Parked Cars	Percent Utilization [10]
8:00 AM	18	15.9%	31	27.0%	1	8.3%	18	27.3%	25	38.5%	13	5.6%	21	4.8%	8	7.6%	135	11.8%
9:00 AM	26	23.0%	99	86.1%	2	16.7%	15	22.7%	51	78.5%	37	15.9%	42	9.6%	6	5.7%	278	24.2%
10:00 AM	48	42.5%	**110**	**95.7%**	2	16.7%	15	22.7%	**61**	**93.8%**	82	35.3%	87	19.8%	14	13.3%	419	36.5%
11:00 AM	56	49.6%	98	85.2%	**5**	**41.7%**	17	25.8%	51	78.5%	105	45.3%	107	24.4%	20	19.0%	459	40.0%
12:00 PM	**67**	**59.3%**	104	90.4%	**5**	**41.7%**	17	25.8%	57	87.7%	105	45.3%	132	30.1%	22	21.0%	509	44.4%
1:00 PM	56	49.6%	103	89.6%	4	33.3%	17	25.8%	48	73.8%	**110**	**47.4%**	**156**	**35.5%**	**23**	**21.9%**	**517**	**45.1%**
2:00 PM	59	52.2%	90	78.3%	3	25.0%	**25**	**37.9%**	46	70.8%	96	41.4%	150	34.2%	20	19.0%	489	42.6%
3:00 PM	51	45.1%	97	84.3%	2	16.7%	**25**	**37.9%**	29	44.6%	68	29.3%	148	33.7%	20	19.0%	440	38.4%
4:00 PM	56	49.6%	102	88.7%	3	25.0%	19	28.8%	30	46.2%	61	26.3%	115	26.2%	19	18.1%	405	35.3%
5:00 PM	36	31.9%	103	89.6%	2	16.7%	18	27.3%	20	30.8%	69	29.7%	93	21.2%	19	18.1%	360	31.4%
6:00 PM	33	29.2%	92	80.0%	2	16.7%	19	28.8%	23	35.4%	107	46.1%	78	17.8%	15	14.3%	369	32.2%
7:00 PM	37	32.7%	86	74.8%	2	16.7%	17	25.8%	10	15.4%	96	41.4%	57	13.0%	11	10.5%	316	27.6%
8:00 PM	19	16.8%	71	61.7%	3	25.0%	17	25.8%	12	18.5%	77	33.2%	32	7.3%	12	11.4%	243	21.2%
9:00 PM	10	8.8%	59	51.3%	3	25.0%	16	24.2%	8	12.3%	55	23.7%	26	5.9%	7	6.7%	184	16.0%
10:00 PM	1	0.9%	39	33.9%	2	16.7%	14	21.2%	3	4.6%	44	19.0%	19	4.3%	3	2.9%	125	10.9%

Notes:

[1] On-site parking surveys conducted by Transportation Studies, Inc. (TSI).

[2] Parking utilization percentages calculated based on an existing on-site parking availability of 113 spaces in Zone 1.

[3] Parking utilization percentages calculated based on an existing on-site parking availability of 115 spaces in Zone 2.

[4] Parking utilization percentages calculated based on an existing on-site parking availability of 12 spaces in Zone 3.

[5] Parking utilization percentages calculated based on an existing on-site parking availability of 66 spaces in Zone 4.

[6] Parking utilization percentages calculated based on an existing on-site parking availability of 65 spaces in Zone 5.

[7] Parking utilization percentages calculated based on an existing on-site parking availability of 232 spaces in Zone 6.

[8] Parking utilization percentages calculated based on an existing on-site parking availability of 439 spaces in Zone 7.

[9] Parking utilization percentages calculated based on an existing on-site parking availability of 105 spaces in Zone 8.

[10] Parking utilization percentages calculated based on an existing on-site parking availability of 1,147 spaces in Zones 1 through 8.

Bold, highlighted cells represent peak observed parking demands.

9.4 SHARED PARKING ANALYSIS

This section evaluates the actual field study data for the existing tenancies in combination with a forecast for the existing floor area vacancies as well as the proposed Project. As previously mentioned, the Village Center has a parking deficiency of 69 spaces with the Project per City-code requirements. The City-code provides guidance for parking reductions based on shared parking conditions. Parking facilities may be shared if multiple uses cooperatively establish and operate the facilities. Consistent with *Section 9.25.030 (n) – Shared Parking* of the Mission Viejo Municipal Code, the City proposes the use of shared parking to demonstrate that that sufficient parking will be provided at all times for all uses, using the guidelines published by the Urban Land Institute *Shared Parking, 3rd Edition*. These shared parking guidelines are routinely applied to all multi-tenant projects in the City of Mission Viejo.

In order to determine the peak-parking requirement for the Project, utilization of the observed parking data for the existing land uses is combined with the parking demand for the proposed Project and any existing vacancies. The Urban Land Institute (ULI) *Shared Parking Model, 3rd Edition*, can be used to forecast the future peak parking demand. This model is representative of the most accurate peak parking demand since the Village Center is currently over 70% occupied, such that the existing peak parking demand can be measured via observed parking surveys and the peak parking demand for the proposed Project and any vacancies can be forecasted using the ULI Shared Parking methodology.

As shown by the observed parking surveys, the parking demand varies throughout the day, particularly since the mix of land uses encounter variable peak demand times. For example, a medical office will typically peak in the morning hours while a fine dining restaurant will peak during the evening hours. The ULI Shared Parking Model provides time-of-day adjustments required to accurately determine the hourly parking adjustments for the proposed Project and vacant uses. The ULI methodology also considers monthly adjustments for the type of use and proportions the parking rates between visitors and employees for weekday and weekend conditions, each with their own parking demand characteristics. While the ULI Shared Parking Model does provide parking rates, the published City-code parking rates were utilized. The ULI Shared Parking references utilized in this analysis, such as the Hourly Weekday & Weekend Time-of-Day Adjustments and the visitor/employee demand ratios, are provided in **Appendix L**.

Table 9.8 shows the summary of the shared parking analysis, demonstrating that the **projected** peak parking demand for the proposed Project and the vacancies during a Thursday, Friday, and Saturday totals 371 spaces, 383 spaces, and 383 spaces, respectively. Review of Row C3 in Table 9.9 shows that peak parking demand for the existing demand, the proposed Project, and the vacancies during a Thursday, Friday, and Saturday totals 869 spaces, 934 spaces, and 900 spaces, respectively.

As a conservative approach, a 10% contingency factor was applied to the projected parking demand (Row C4) in order to account for daily variations. As shown, the overall projected peak parking demand during a Thursday, Friday, and Saturday totals 919 spaces, 989 spaces, and 952 spaces, respectively. **Based on the proposed parking supply of 1,100, a minimum surplus of 181 spaces, 111 spaces, and 148 spaces would result during the Thursday, Friday, and Saturday peak hours, respectively. Given these results, there is adequate parking on-site to accommodate the future conditions.**

Appendix M contains the weekday and weekend ULI shared parking calculation worksheets.

TABLE 9.8 – PARKING DEMAND ANALYSIS SUMMARY

	Analysis Type	Weekday	Weekend	
		(Thursday)	(Friday)	(Saturday)
A	**EXISTING PARKING SUPPLY**			
A1	Existing Supply	**1147**	**1147**	**1147**
A2	Proposed Supply (Existing + Proposed Project)[3]	**1100**	**1100**	**1100**
B	**PARKING REQUIREMENT PER CODE**			
B1	Existing Land Use (assuming vacant uses are fully occupied [including Stein Mart])	**1193**		
B2	Surplus Stalls (A1-B1)	-46		
B3	Existing Land Use (assuming vacant uses are fully occupied [w/o Stein Mart]) + Proposed Project[1]	**1169**		
B4	Surplus Stalls (A2-B3)	-69		
C	**ULI SHARED PARKING DEMAND + EXISTING PARKING DEMAND (Dec. 2021 Study[2])**			
C1	Existing Parking Demand (Dec. 2021 Study[2])	498	551	517
C2	Added Parking Demand *(Vacant uses + Proposed project[1])*	371	383	383
C3	Total Parking Demand (C1+C2)	**869**	**934**	**900**
C4	Future Parking Demand *(w/10% contingency factor on existing demand)*	**919**	**989**	**952**
C5	% of Proposed Supply (C4/A2)	84%	90%	87%
C6	Surplus Stalls (A2-C4)	181	111	148
	Note: Parking demand of vacant uses and proposed project totals includes monthly variation (Dec) and time of day (1:00pm weekday, Noon weekend) adjustments			
	Note: No modal or non-captive market adjustments were made for conservative purposes			

1 *Proposed Project:*
700 sq ft Retail - 4 parking stalls required per City code
16,770 sq ft Food/Restaurant (10,814.5 sq ft of dining area) - 108 parking stalls required per City code

2 Based on on-site parking surveys conducted by Transportation Studies, Inc. (TSI) between Thursday, December 2, 2021 and Saturday, December 4, 2021.

3 *The proposed parking supply accounts for the loss of 47 parking spaces within the Mission Viejo property due to the development of the proposed project.*

Sources:
Urban Land Institute (ULI) Shared Parking, Third Edition, February 2020
"Shared parking is the use of parking space to serve two or more individual land uses without conflict or encroachment. The ability to share parking spaces is the result of two conditions: (1) Variations in the accumulation of vehicles by hour, by day, or by season at the individual land uses; and (2) Relationships among the land uses that result in visiting multiple land uses on the same automobile trip."

9.5 PARKING MANAGEMENT PLAN

Per the results of the S*hared Parking Analysis*, the commercial center is projected to provide adequate

parking during the future conditions. However, the City understands the benefits of limiting the parking impacts since the parking is shared globally amongst all commercial center tenants. To mitigate a potential parking shortage at the Village Center, the City plans to incorporate a parking management plan, comprised of several project features and potential parking strategies.

Bicycle Parking

The project will include significant on-site bicycle parking with direct connections to bicycle facilities along Marguerite Parkway and the Oso Creek Trail. These amenities are intended to encourage biking to the project site, hence reducing the need for standard vehicle parking. As currently planned, the project will include bicycle parking at the locations below. The exact numbers and locations of these facilities will be defined during the detailed design stage of the project.

- 20 bicycle parking spaces at the North Paseo;
- 20 bicycle parking spaces at the Urban Alley area;
- 20 bicycle parking spaces on the Oso Creek Trail near the "Creekside" entertainment level.

It should be noted that it is increasingly more common to provide parking credits for projects that provide bicycle parking and credits for Class I Trail focused developments, such as the proposed project. For example, the City of Irvine allows up to a 5% parking requirement reduction if bicycle racks are located within 200 feet of project entrances. However, parking credits have not been applied to this analysis as a conservative approach.

Off-site Parking Facilities/Shuttles

The City of Mission Viejo will utilize the Civic Center parking lot, in addition to other nearby City-owned facilities, as overflow parking during peak times or during special events with projected high parking demand. These facilities would also be available for any planned special events hosted at the "Event Barn". The Civic Center parking lot provides over 300 parking spaces to help fill the need for any overflow parking. During the projected peak times (Friday and Saturday evenings), the Civic Center parking lot is scarcely utilized. The Civic Center parking lot is located directly west of the project site, with an approximately 0.2-mile walking distance. Directional parking signs should be provided to direct potential overflow parking to utilize the Civic Center parking lot.

The City also has the benefit of utilizing City-owned shuttles to shuttle guests to and from the project site. Shuttles have been successfully used during past special events, which shuttled guests between the temporary 'North Paseo' and the Civic Center parking lot area.

In addition, the City will evaluate the existing sidewalk widths leading from the Village Center to the Civic Center to determine the possibility of future sidewalk widening. This would provide greater ease of access for pedestrians to the off-site parking facility.

Valet Operation

A valet operation may be considered during peak parking demand and is subject to the approval of any impacted parcel owners within the Village Center. An operation of this type can increase the capacity of the existing facilities. The operation shall not adversely impact the parking and internal circulation of the commercial center and must be located to allow for the safe and efficient function.

The parking management plan should be posted on the project's website, including all other marketing media available to the public. The City will continuously monitor the parking demands of the project site to ensure adequate parking is provided.

10.0 TRUCK TURNING ANALYSIS

Based on the proposed site improvements and observed delivery truck circulation, a truck turning template analysis was conducted. The purpose of the analysis is to determine if adequate clearance will be provided for large trucks accessing the internal businesses, such as Big Lots, CVS, Trader Joe's, and the former Michael's building. The analysis was conducted using three (3) various truck types, WB-40 (45.5' length), Caltrans CA Legal (65' length), and SU-40 (39.5' length). These were observed as the most common truck types accessing the commercial center during KOA's field investigation.

Appendix N illustrates the turning requirements and potential conflict points of the delivery trucks accessing the project.

Appendix N.1 thru N.5

As shown on **Appendix N.1 through N.5**, the WB-40 and Caltrans CA Legal trucks can safely access Loading Docks 1 (Big Lots), 2 (CVS), and 3 (Former Michael's) via the unsignalized driveway located along La Paz Road. It should be noted that the SU-40 was not fully evaluated in this area since it is currently the shortest length configuration considered in the analysis and it is anticipated to be adequately accommodated within the internal circulation system, including access to the tenants north of the project building (MK Nails, Poke Wave, Menchie's Yogurt, & and Jersey Mike's Subs).

Appendix N.6

Due to the overall length of the Caltrans CA Legal, the truck would encounter constraints at various existing condition locations. The truck cannot turn around at Loading Dock 1 (Big Lots) and cannot back into Loading Dock 3 (Former Michael's), as illustrated on **Appendix N.6**. Larger trucks beyond 65' were analyzed; however, the internal circulation would not provide adequate spacing for these trucks to safety maneuver the area.

Appendix N.7 & N.8

In addition to the three (3) loading docks on the northern end of the commercial center, the Trader Joe's (grocery store) also routinely receives truck deliveries. As shown on **Appendix N.7 and N.8**, both SU-40 and WB-40 trucks can be accommodated within the internal circulation utilizing the driveways at South Village Center and Estanciero Drive, in addition to the drive aisle north of the bowling alley. It should be noted that if the proposed 'South Paseo' is built during a future phase of the project, this drive aisle would be closed off to vehicular traffic. Trucks would have to exit south toward Estanciero Drive or South Village Center driveway, which are illustrated on Appendix X.7 and X.8. Alternatively, the trucks can travel north and exit via the driveway along La Paz Road.

Appendix N.9 & N.10

Access to the Trader Joe's was also analyzed under the Caltrans CA Legal. The truck can only enter via Estanciero Drive and exit via the northern driveway along La Paz Road **(Appendix N.9)**. As shown on **Appendix N.10**, the Caltrans CA Legal cannot safely turn around due to constraints with existing on-site features.

Overall, truck access to the various tenants within the Village Center would continue to be accommodated with the proposed project.

11.0 PEDESTRIAN AND BICYCLE ACCESSIBILITY

11.1 EXISTING BICYCLE AND PEDESTRIAN ACCESSIBILITY

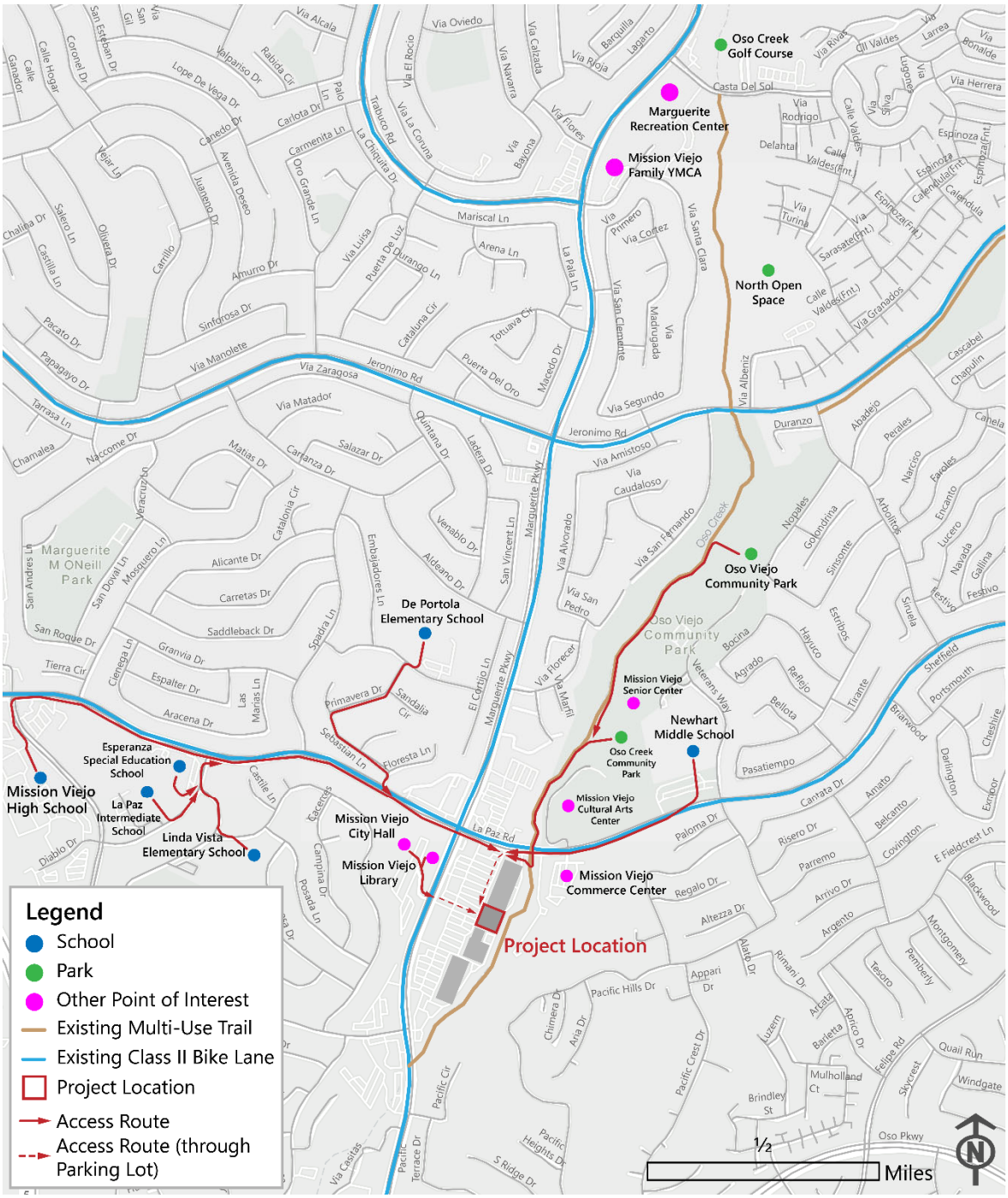
The proposed project is located in the center of the Mission Viejo Village Center. The surrounding area consists primarily of a mix of low-density residential, commercial, and institutional uses. Nearby destinations from the Village Center include the Mission Viejo Civic Center and Library located immediately to the west, the Oso Creek Trail and Oso Viejo Community Park/Community Senior Center located to the northeast, and several schools such as Mission Viejo High School, La Paz Intermediate School, Esperanza Special Education, Linda Vista Elementary School, Newhart Middle School, and De Portola Elementary School.

The Village Center site is bounded by two major thoroughfares including Marguerite Parkway on the west and La Paz Road on the north. These two roads have standard Class II bike lanes in both directions that serve the nearby communities. On the east, the Village Center site is bounded by the Oso Creek Trail that begins at Marguerite Parkway about 170 feet south of Estanciero Drive and extends northeasterly for approximately 1.4 miles where it connects to both Jeronimo Road and Arbolitos. This paved trail provides access for both pedestrians and bicyclists to the surrounding residential neighborhoods, Oso Creek Trail, and Newhart Middle School, and also to Marguerite Parkway, La Paz Road, as well as Jeronimo Road, which is another major thoroughfare with Class II bike lanes in both directions. Within the Village Center site, there is a direct connection to the Oso Creek Trail located near La Paz Road at the back side of the Village Center.

Current pedestrian and bicycle access limitations for the Village Center site stem from the lack of connection to the Oso Creek Trail aside from the single entrance located near the back-of-house driveway at the northeast end of the site. Currently, access the Oso Creek Trail, pedestrians and bicyclists on the site must go to either the north or south end of the site, limiting the desirability of the Oso Creek Trail as a travel option especially for Village Center visitors.

The existing active transportation network that connects the Village Center to nearby destinations is shown in **Figure 11.1**.

FIGURE 11.1: EXISTING PEDESTRIAN AND BICYCLE ACCESSIBILITY



11.2 EXISTING PEDESTRIAN AND BICYCLE COUNTS ON OSO CREEK TRAIL

A review of the existing demand along the Oso Creek Trail was conducted. Pedestrian and bicyclist counts were collected at four locations along the Oso Creek trail near the Village Center on Thursday, September 29th, 2022 during the AM and PM peak periods from 07:00 to 09:00 and 16:00 to 18:00, respectively. The count locations are depicted in **Figure 11.2**.

Figures 11.3 and **11.4** show the count data at the four trail locations during both the AM and PM peak periods, respectively. It is worth noting that the counts were classified by travel modes including pedestrian, bike, wheelchair, stroller and other. The later three modes were summed and included as pedestrians. It can be seen from the count data that the trail is actively used.

FIGURE 11.2: PEDESTRIAN AND BICYCLE COUNT LOCATIONS ON OSO CREEK TRAIL

FIGURE 11.3: PEDESTRIAN AND BICYCLE COUNTS, AM PEAK (7:00 – 9:00)

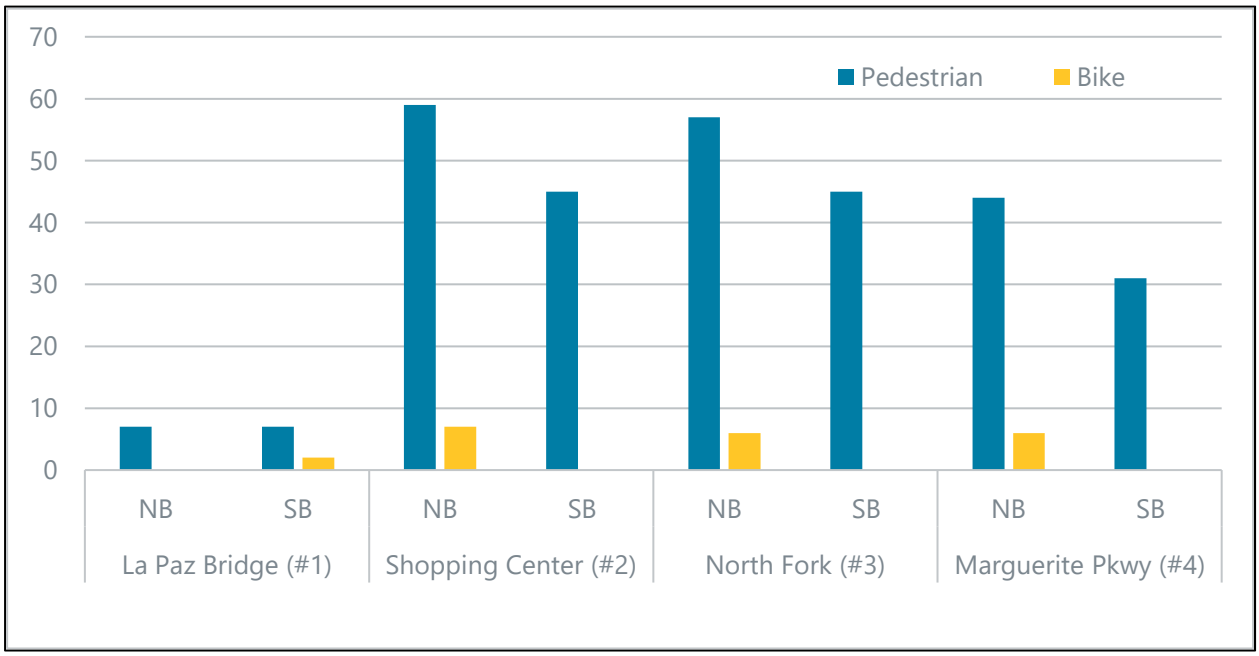
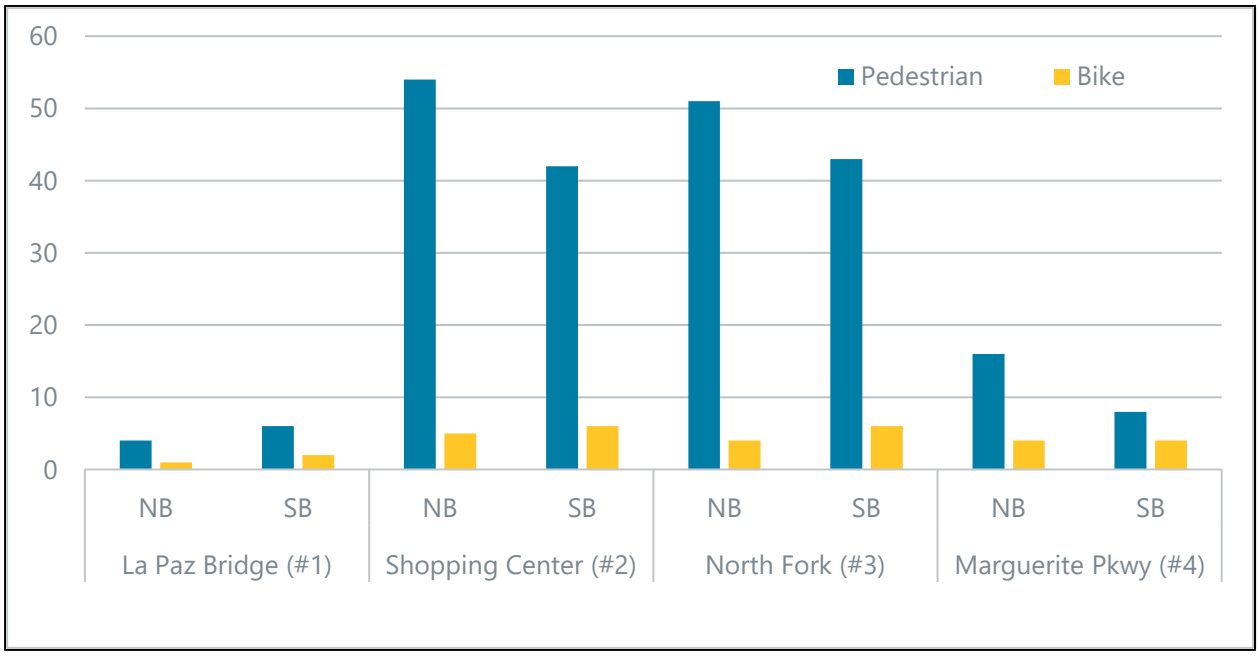


FIGURE 11.4: PEDESTRIAN AND BICYCLE COUNTS, PM PEAK (16:00 – 18:00)



11.3 PROPOSED PEDESTRIAN AND BICYCLE ACCESSIBILITY

The proposed project intends to close existing gaps that separate the site amenities from Marguerite Parkway and Oso Creek Trail. Specifically, adaptable public space will be added as a part of the proposed project to provide a seamless, cohesive connection through the site that will link to active transportation travel corridors on both sides. The proposed project improvements include:

- **West Side of Project Site:** A new paseo will provide a direct linkage for pedestrians and bicyclists to and from the Class II bike lanes and walkways on Marguerite Parkway, and to and from the Civic Center and Library as well as nearby residential communities and schools. This paseo will allow pedestrians and bicyclists to access the site amenities without the need to navigate through the existing parking lot. The west link portion of the paseo will be improved with a walkway and Class I bike path. The east link portion of the paseo will be a pedestrianized zone; bicyclists would be dismounted in this area.

- **East Side of Project Site:** The proposed outdoor plaza will be accessible for both pedestrians and bicyclists. A new freight type elevator will be located in the outdoor plaza that directly connects to the Oso Creek Trail. This elevator will be accessible by both pedestrians and bicyclists.

- **Bicycle Parking:** As currently planned, the proposed project will significantly increase bicycle parking at the locations below. The exact numbers and locations of these facilities would be confirmed during detail design stage of the project.
  - 20 bicycle parking facilities at the paseo
  - 20 bicycle parking facilities at the Urban Alley
  - 20 bicycle parking facilities on the Oso Creek Trail near the proposed project

  In total, it is anticipated that between 60-100 bicycle parking stalls will be available.

- **Pedestrian Bridge Across Oso Creek:** A pedestrian bridge will extend from the outdoor plaza area across the Oso Creek to a new event plaza, which will also be a part of the proposed project. The bridge will link to the newly expanded Oso Creek Trail located on the east side of the Creek that spans to the southern trailhead at Marguerite Parkway.

Figures 11.5 and **11.6** illustrate the site's improved accessibility for pedestrians and bicyclists with the proposed project.

The benefits of this project include increased safety for active transportation users, reduced vehicle trips and vehicle miles travelled, reduced emissions, easier connection to surrounding locations, and a more vibrant and inviting atmosphere that will benefit business activity. The above project improvements will enhance active transportation accessibility for the Village Center site, and thereby make active transportation a more attractive option for visitors.

In addition, the project would benefit from the future implementation of the Mission Viejo Comprehensive Bikeway Master Plan. The Plan serves as a guide for developing a safe, efficient, and convenient system of bicycle trails, including the multi-use trail shared sidewalk (MUTSS) along Marguerite Parkway between La Paz Road and El Toro Road. This expansion would provide a direct connection between the project and the entire northern end of the City.

FIGURE 11.5: PROPOSED PEDESTRIAN AND BICYCLE ACCESSIBILITY

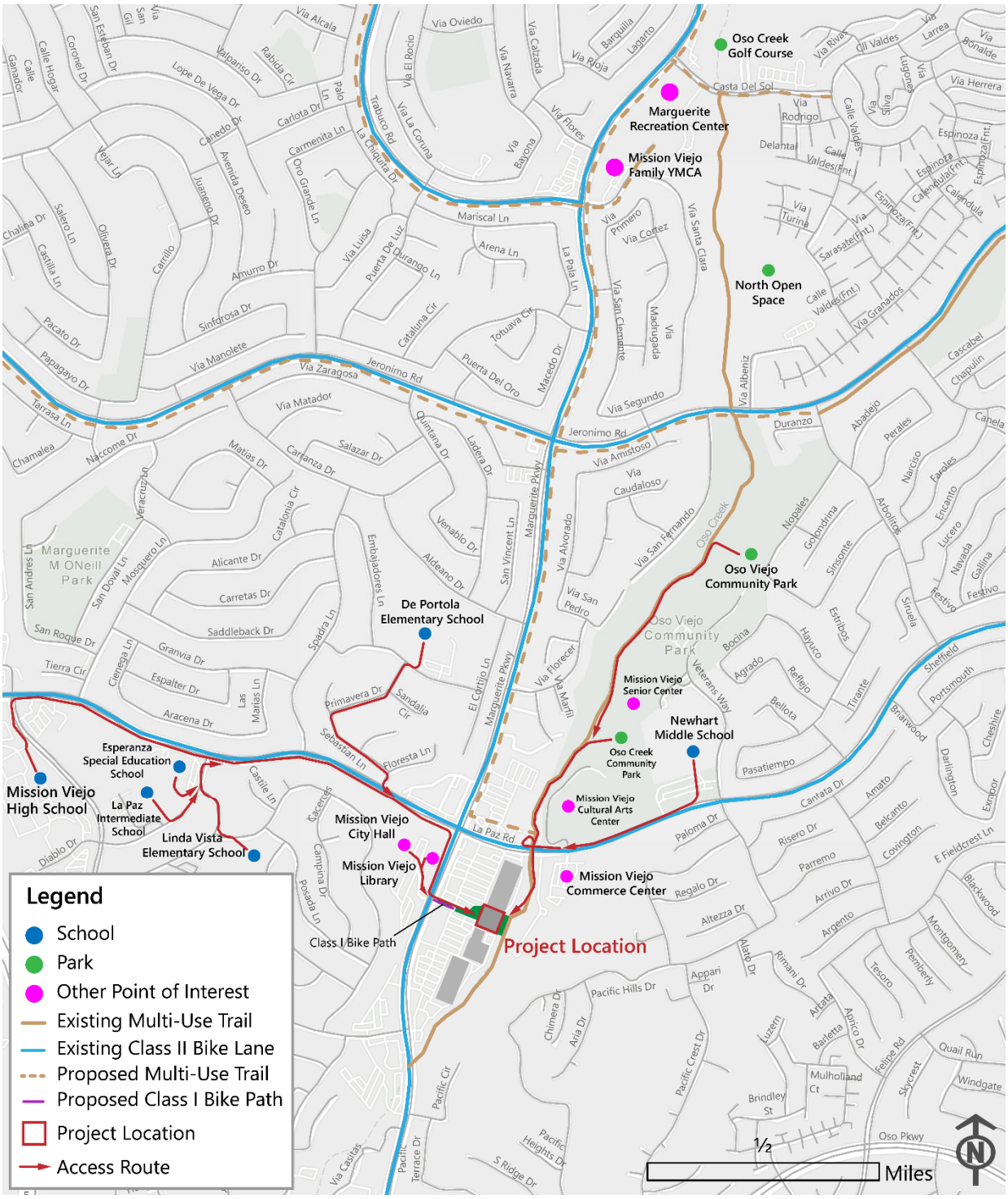
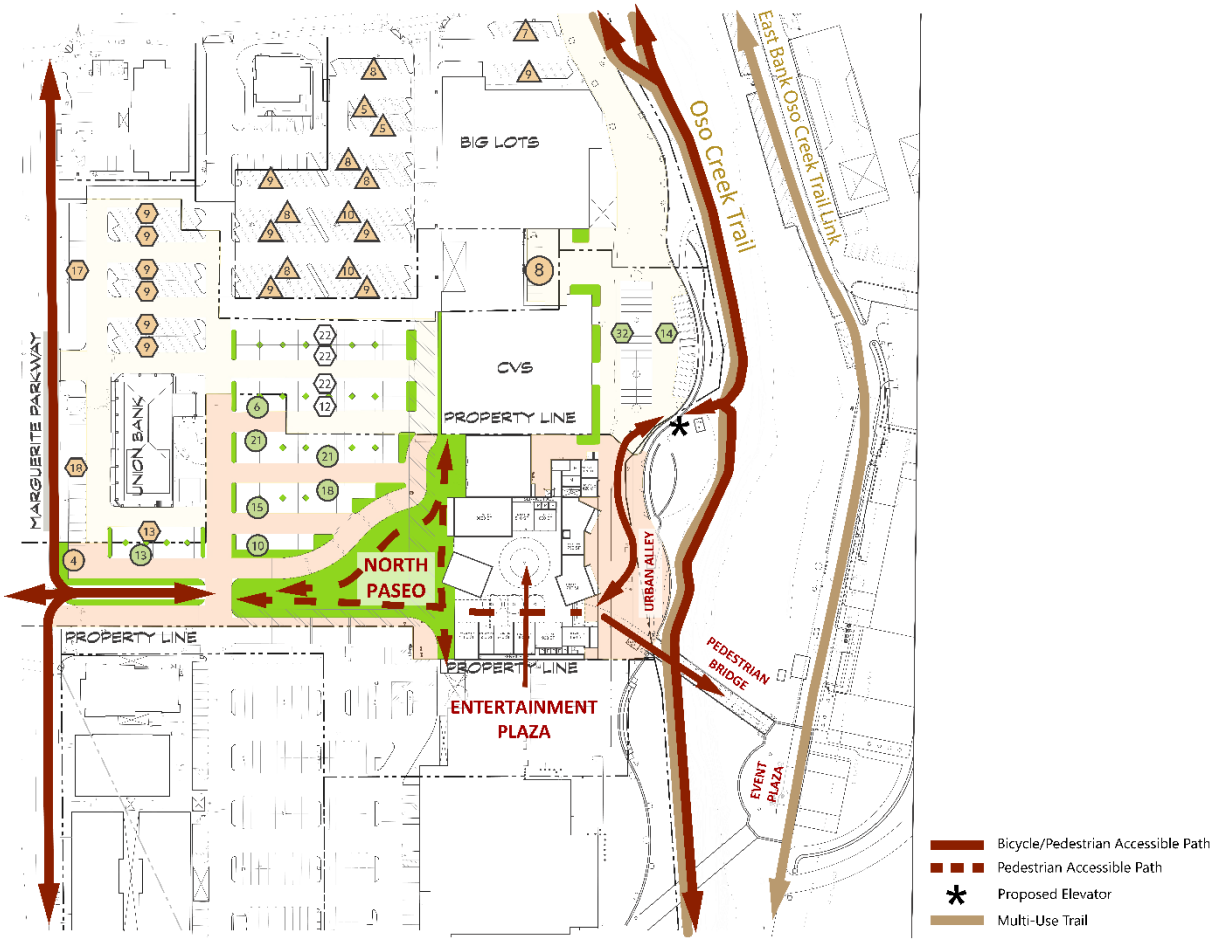


FIGURE 11.6: PROPOSED PEDESTRIAN AND BICYCLE ACCESSIBILITY AT VILLAGE CENTER



12.0 PROJECT IMPROVEMENT MEASURES

As discussed previously in **Section 7.3** of this report, the project daily traffic is anticipated to result in a significant impact at the two study roadway segments listed below.

- Marguerite Parkway between Jeronimo Road & La Paz Road
- Marguerite Parkway between La Paz Road & Estanciero Drive

As discussed previously, the intersection peak hour review is an operation analysis, whereas the roadway segment review is a planning-level analysis. As shown in this report, all study area intersections operate at an acceptable LOS during both the AM and PM peak periods – the most critical traffic periods of the day.

A review of the roadway configuration along Marguerite Parkway was conducted to determine if it would be feasible to increase the roadway capacity in order to reduce the project traffic impact to a less-than-significant level. The two roadway segments on Marguerite Parkway currently provide two travel lanes and a Class II bike lane in each direction as well as a raised median. The sidewalks on both sides of the road are approximately 5 feet wide. The addition of one travel lane in each direction would require a combination of the removal of the Class II bike lanes, reduction of the sidewalk widths, and narrowing or removal of the raised median. Therefore, the increase in roadway capacity by adding one travel lane in each direction on Marguerite Parkway is considered infeasible.

The proposed project, however, will enhance both pedestrian and bicycle accessibility at the Mission Viejo Village Center by providing a "paseo" that will connect the redeveloped project site to Marguerite Parkway. The improvement includes a Class I bike path that will extend from Marguerite Parkway at Civic Center for approximately 170 feet into the site. Additionally, the proposed project will provide an urban alley for both pedestrians and bicyclists that overlooks the Oso Creek Trail. A new large capacity elevator that can accommodate bicycles will also be located near the urban alley that connects directly to the Oso Creek Trail. Furthermore, bicycle parking facilities will be provided in the paseo, urban alley and adjacent the Oso Creek Trail near the proposed elevator. With these project improvements, there will be seamless connectivity through the Village Center site between Marguerite Parkway and the Oso Creek Trail for both pedestrians and bicyclists. It is envisioned that these project improvements would make active transportation an attractive alternative to traveling by car, especially via bicycle to and from the proposed project as well as the rest of the Village Center.

The project improvement measures are expected to decrease vehicle trips due to an increase in bicycle trips to and from the Village Center site. The analysis in **Table 12.1** was conducted to determine the reduction in the number of daily vehicle trips at the two roadway segments on Marguerite Parkway that would be required to reduce the traffic impacts at these locations to a less-than-significant level. It is determined that a reduction of approximately 144 daily vehicle trips would be required at Marguerite Parkway north of the Civic Center driveway. Assuming an average of 1.25 persons per vehicle, there would need to be an increase of approximately 180 daily bicycle trips. This magnitude of daily bicycle trips is estimated to be about 15 bicycle trips per hour (8 bicyclists traveling two-way per hour) to and from the north of the Civic Center driveway, based on bicycle ridership period from 7:00 AM to 7:00 PM.

TABLE 12.1 – DETERMINATION OF PROJECT IMPACTS AT STUDY ROADWAY SEGMENTS - OPENING YEAR WITH-PROJECT PLUS TRAFFIC IMPROVEMENTS

	Roadway Segment	Lanes	Type of Arterial	LOS E Capacity (VPD)	With Reduction in Vehicle Trips due to Bicycle Accessibility Enhancements							
					Daily Volume	V/C Ratio	V/C Increase	Significant (Yes/No)	Daily vehicle trip reduction to result in Less-Than-Signficant impact	Veh Occupancy (Persons/Veh)	Daily bicyclist trips required to reduce traffic impact to Less-Than-Significant level	Average bicyclist trips per hour (assuming riders from 7am-7pm)
1	Marguerite Parkway between Jeronimo Road & La Paz Road	4D	Primary	37,500	34,912	0.931	0.0090	No	144	1.25	180	**15**
4	Marguerite Parkway between La Paz Road & Estanciero	4D	Primary	37,500	34,337	0.916	0.0090	No	75	1.25	94	**8**

As the project improvements provide site accessibility enhancement at Marguerite Parkway and Oso Creek Trail that both extend in the north-south direction, it is anticipated that the increase in bicycle trips and therefore a decrease in vehicle trips would also occur to the north and south of the site. In addition, it should be noted that the hourly bicycle users (i.e., 8 bicyclists traveling two-way to/from the north of the Civic Center driveway) are considered reasonable given that Marguerite Parkway provides Class II bike lanes, the Oso Creek Trail is classified as a Class I bike path, and that the proposed project will provide seamless connectivity between the bike lanes and path via the Village Center site. Taking into consideration the above, the project improvements are anticipated to reduce the project traffic impacts at Roadway Segments #1 and #4 to a less-than-significant level.

To further improve roadway segment level of service, the City of Mission Viejo can implement the following:

- The City of Mission Viejo participates in the Orange County Traffic Signal Synchronization Plan (Project P), which increases the throughput capacity along arterial roadways like Marguerite Parkway. The Marguerite Parkway arterial corridor has twice been awarded Project P funds and has several time-of-day coordination patterns, including weekdays and weekends. The City has recently submitted an application to update Marguerite Parkway once again. If awarded, the project would begin at the beginning of 2024 and the Operations and Maintenance (O&M) phase would run in 2025 and 2026. With an overlap between the Village Center Project Opening Year (2025) and the potential Marguerite Parkway O&M phase (2025-2026), the City can closely monitor any signal timing adjustments needed to improve operations along an impacted project area roadway segment.

- Developing Transportation Demand Management (TDM) strategies, including bus programs (such as the MV Shuttle) and active transportation programs (additional pedestrian/bicyclist infrastructure) with the intent of reducing single-occupancy vehicles on the roadway.

- The Village Center project location provides direct access to the Oso Creek Trail, which can assist with reducing the number of vehicle trips impacting the surrounding roadways.

13.0 VEHICLE MILES TRAVELED (VMT) ASSESSMENT

Senate Bill 743 (SB 743) was approved by California legislature in September 2013. SB 743 requires changes to California Environmental Quality Act (CEQA), specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "Level of Service" (LOS) for evaluating transportation projects. The OPR has prepared a Technical Advisory for Evaluating Transportation Impacts in California Environmental Quality Act (CEQA) and has recommended that Vehicle Miles Traveled (VMT) replace Level-of-Service (LOS) as the primary measure of transportation impacts. The Natural Resources Agency has adopted updates to CEQA Guidelines to incorporate SB 743 that requires VMT for the purposes of determining a significant transportation impact under CEQA.
The City does not currently have its own VMT guidelines. Therefore, the screening criteria and guidelines contained within the OPR's Technical Advisory was used for this assessment. For the proposed project, the OPR screening criteria described below was utilized.

> **Project is local serving retail less than 50,000 SF:** The *OPR Technical Advisory* advises lead agencies that because local serving retail projects tend to improve retail destination proximity, shorten trips, and reduce VMT, they may be presumed to have less than significant impacts.

Based on review of the applicable VMT screening threshold, the proposed project satisfies the screening criteria and would therefore be presumed to result in a less-than-significant VMT impact. Therefore, the proposed project can be excluded from further VMT analysis.

APPENDIX A

TRAFFIC COUNT DATA

APPENDIX B

EXISTING LEVEL-OF-SERVICE WORKSHEETS

APPENDIX C

EXISTING WITH-PROJECT LEVEL-OF-SERVICE WORKSHEETS

APPENDIX D

VACANT LAND USE TRAFFIC

APPENDIX E

OPENING YEAR (2025) WITHOUT-PROJECT LEVEL-OF-SERVICE WORKSHEETS

APPENDIX F

OPENING YEAR (2025) WITH-PROJECT LEVEL-OF-SERVICE WORKSHEETS

APPENDIX G

VEHICLE QUEUEING ANALYSIS WORKSHEETS

APPENDIX H

EXISTING LEVEL-OF-SERVICE WORKSHEETS FOR INTERNAL INTERSECTIONS

APPENDIX I

VACANT LAND USE TRAFFIC AT INTERNAL INTERSECTIONS

APPENDIX J

TRAFFIC DIVERSIONS AT INTERNAL INTERSECTIONS ASSOCIATED WITH PROPOSED PROJECT

APPENDIX K

OPENING YEAR (2025) LEVEL-OF-SERVICE WORKSHEETS FOR INTERNAL INTERSECTIONS

APPENDIX L

ULI SHARED PARKING ANALYSIS REFERENCES

APPENDIX M

ULI SHARED PARKING ANALYSIS WORKSHEETS

APPENDIX N

TRUCK TURNING ANALYSIS