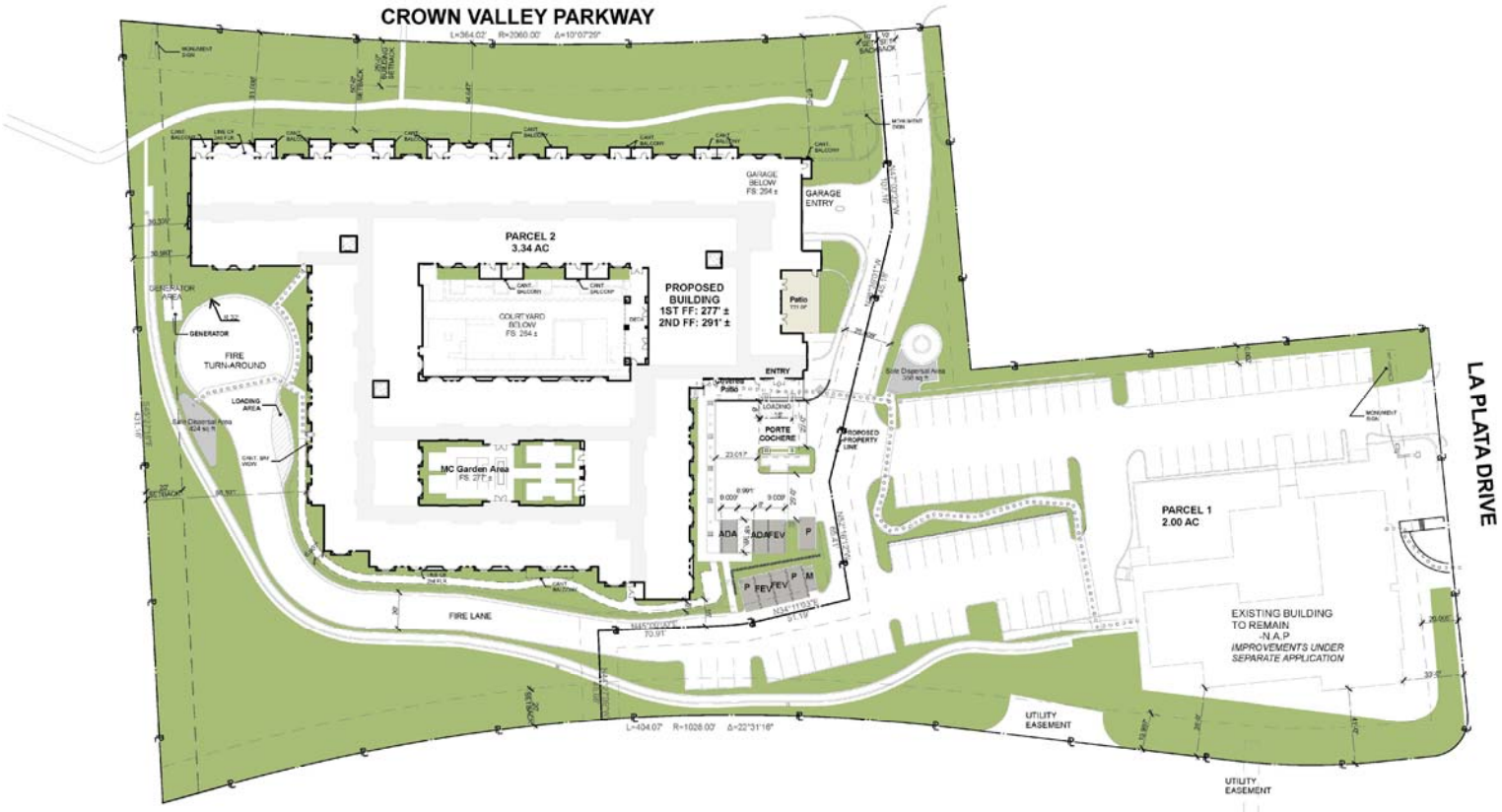
LAGUNA NIGUEL SENIOR LIVING CENTER & GRACE CHURCH REMODEL TRAFFIC IMPACT STUDY
City of Laguna Niguel, California



RK engineering group, inc.

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City of Laguna Niguel, California

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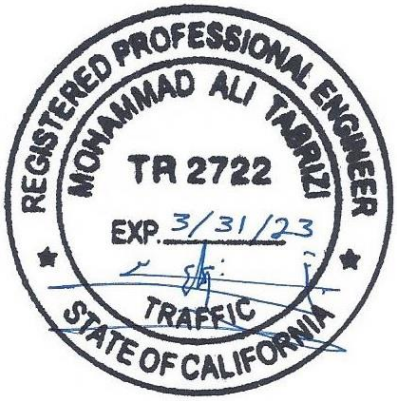

April 15, 2021

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1.0 Introduction

1.1 Purpose of Report and Study Objectives

The purpose of this traffic impact analysis is to evaluate the proposed Laguna Niguel Senior Living Center & Grace Church Remodel (hereinafter referred to as project) from a traffic and circulation standpoint and to determine whether the proposed project will have a significant traffic impact on the environment. This study has been conducted pursuant to the *City of Laguna Niguel Transportation Assessment Guidelines (November 2020)* and the California Environmental Quality Act (CEQA) requirements.

1.2 Site Location

The proposed project is located adjacent to the existing Grace Church on the corner of the Crown Valley Parkway / La Plata Drive intersection in the City of Laguna Niguel.

The project site location map is shown on Exhibit 1-1.

1.3 Project Description

The project site currently consists of the following land uses:

- The existing Grace Church; and
- A K-8 private school (to be displaced).

The proposed project consists of the construction of a senior assisted living and memory care facility with a size of 106,046 square feet (130,046 if the parking areas are included) consisting of a total of 108 units housing 111 beds, to be located adjacent to the existing Grace Church. The proposed project is expected to displace an existing building on-site which served a K-8 private school with a maximum enrollment capacity of 100 students.

Access for the project site is planned via the following:

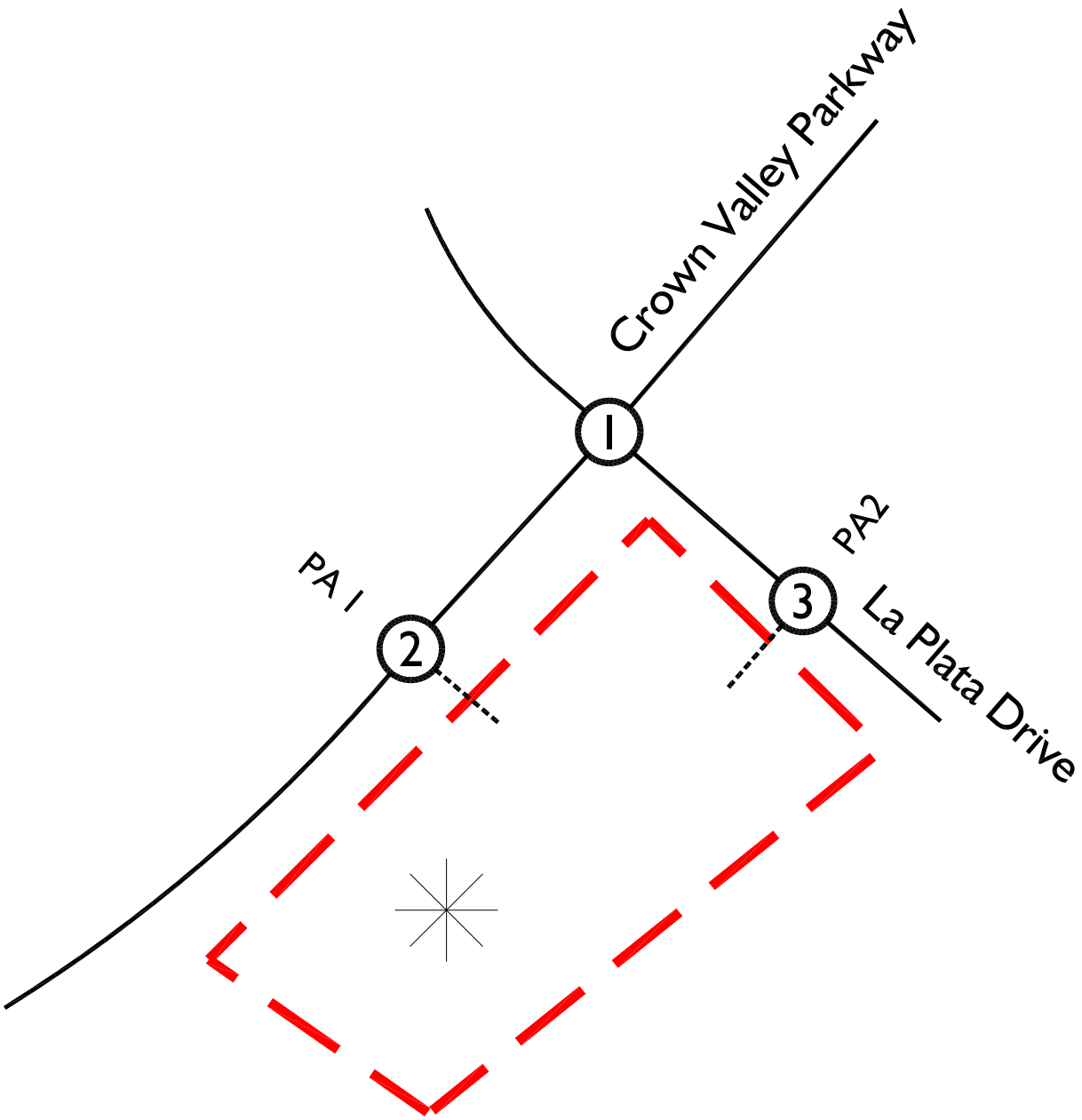
- One proposed right-in/right-out access driveway along Crown Valley Parkway; and
- One existing full-access unsignalized driveway along La Plata Drive.

The project is planned to open in 2022 and will be evaluated in one (1) single phase.

This traffic analysis evaluates the proposed project from a traffic and circulation standpoint in accordance with County of Orange Congestion Management Program (CMP) and City of Laguna Niguel Transportation Assessment Guidelines.

The project site plan is shown on Exhibit 1-2.

Exhibit 1-1
Location Map



Legend:

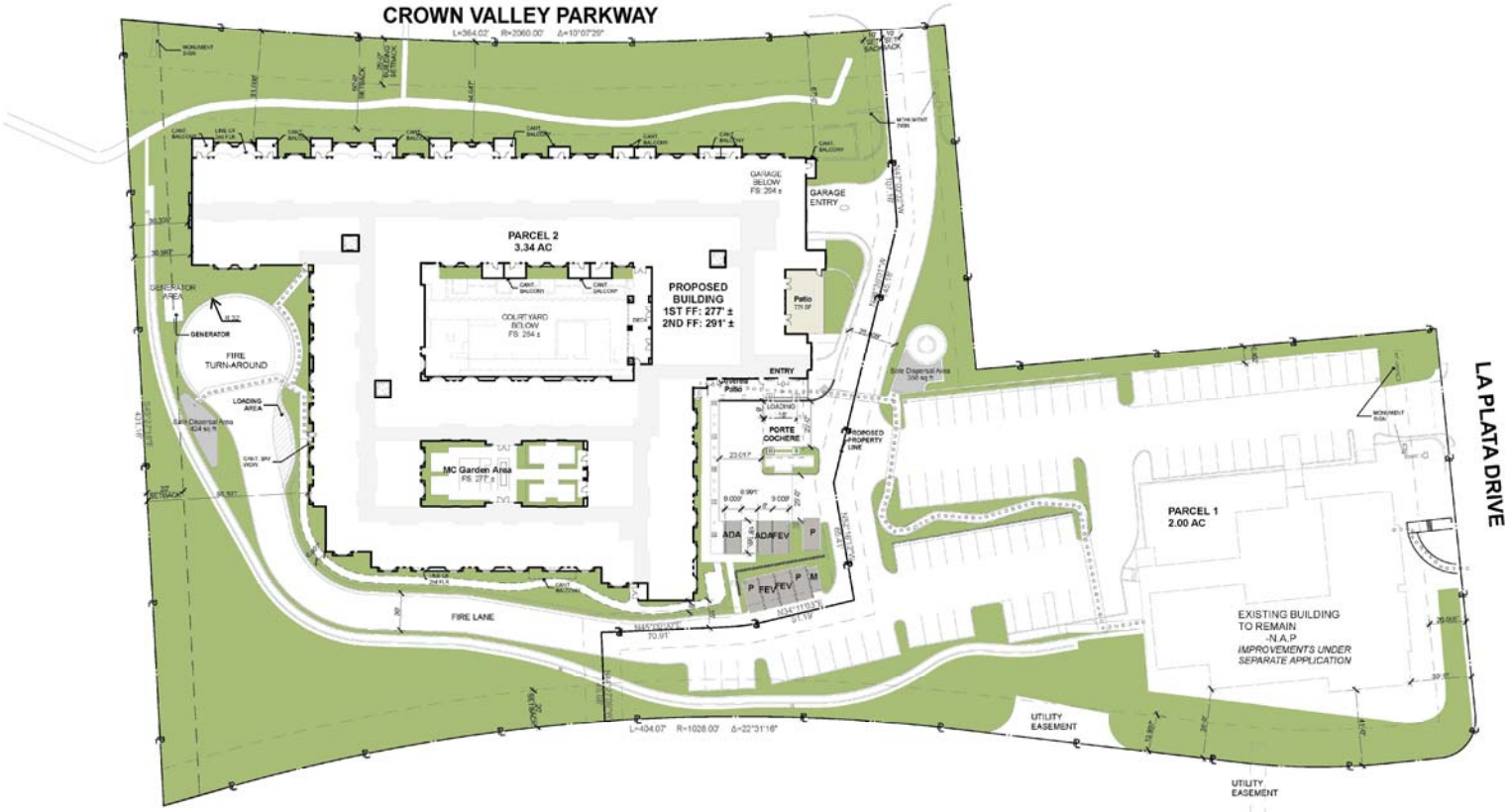
① = Study Area Intersection

= Project Site

- - - = Project Site Boundary

N

Exhibit 1-2
Site Plan



2.0 Study Area & Analysis Methodologies

This traffic analysis evaluates the proposed project from a traffic and circulation standpoint in accordance with the City of Laguna Niguel Transportation Assessment Guidelines.

The study area consists of level of service analysis for the following study intersections:

1. Crown Valley Parkway (NS) / La Plata Drive (EW);
2. Crown Valley Parkway (NS) / Project Access 1 (EW); and
3. Project Access 2 (NS) / La Plata Drive (EW).

The study intersection level of service has been evaluated for the following study scenarios for AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods.

- Existing Conditions;
- Existing Plus Project Conditions;
- Opening Year (2022) Without Project Conditions; and
- Opening Year (2022) With Project Conditions.

2.1 Intersection Capacity Utilization (LOS) Analysis Methodology (Signalized Intersections)

In accordance with the *City of Laguna Niguel Transportation Assessment Guidelines (November 2020),* the methodology used to assess the operation of signalized intersections is known as Intersection Capacity Utilization (ICU). To calculate an ICU, the volume of traffic of the intersection is compared with the capacity of the intersection. ICU is usually expressed as ratio (V/C). This V/C ratio represents the adequacy of an intersection to accommodate the vehicular demand.

The ICU analysis has been prepared utilizing the following parameters:

- Saturation Flow Rate: Saturation flow value of 1,700 vehicles per lane per hour; no

adjustments are used for protected movements with dedicated lanes (including both right and left turns).

- Clearance Interval: A clearance interval factor of 5% (0.05) is applied to the ICU calculations.

- Level of Service Ranges: Table 3-1 below illustrates the thresholds used in assigning a letter value to the resulting LOS:

Table 2-1
Intersection ICU Level of Service

LOS	Critical Volume to Capacity Ratio
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	>1.00

- Peak-Periods: Weekday peak-hour analysis periods are defined as follows:

    - 7:00 to 9:00 AM

    - 4:00 to 6:00 PM

- Peak-Hour: The highest one-hour period in both the AM and PM peak periods, as determined by four consecutive 15-minute count periods are used in the ICU calculations. Both AM and PM peak hours are studied.

- Right Turn Movements: If the distance from the edge of the outside through lane is at least 19 feet and parking is prohibited during the peak period, right turning vehicles may be assumed to utilize this "unofficial" right turn lane. Otherwise, all right turn traffic is assigned to the through lane. If a right turn lane exists, right turn activity is checked for conflicts with other critical movements. It is assumed that right turn movements are accommodated during non-conflicting left turn phases (e.g.,

northbound right turns during westbound left turn phase), as well as non-conflicting through flows (e.g., northbound right turn movements and north/south through flows). Right turn movements become critical when conflicting movements (e.g., northbound right turns, southbound left turns, and eastbound through flows) represent a sum of V/C ratios, which are greater than the normal through/left turn critical movements.

2.2 Highway Capacity Manual (HCM) Analysis Methodology (Unsignalized Intersections)

The Highway Capacity Manual 6th Edition (HCM 6) methodology is used to calculate level of service at unsignalized study area intersections. For intersections with stop control on the minor street only, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street, and the level of service is determined based on the vehicle delay of the worst individual movement or movements sharing a single lane.

Table 2-2 shows the level of service criteria based on the HCM methodology.

Table 2-2
HCM Level of Service - Vehicle Delay

Level of Service (LOS)	Vehicle Delay (Seconds)
A	0.00 - 10.00
B	10.01 - 15.00
C	15.01 - 25.00
D	25.01 - 35.00
E	35.01 - 50.00
F	>50.01

2.3 Study Intersection Level of Service (LOS) Performance Criteria & Thresholds of Significance

In accordance with the *City of Laguna Niguel Transportation Assessment Guidelines (November 2020),* the following criteria shall be used in determining whether the addition of project should be considered to have significant traffic impacts:

- A signalized intersection to degrade from an acceptable LOS D or better to LOS E or LOS F; or

- The volume to capacity (V/C) ratio to increase by more than 0.01 at a signalized intersection operating at LOS E or LOS F.

If an intersection is operating at LOS E or worse and a significant impact is anticipated (V/C ratio increase of more than 0.01), improvement is needed to improve intersection operations equal to the project-generated impact on the operation of the intersection. If an impact drops from LOS D or above to LOS E or F, improvement is required to bring the LOS back to the acceptable threshold level (LOS D) as a part of the project approval. No improvement is required for intersections operating at above the acceptable threshold.

2.4 CEQA Evaluation & Vehicle Miles Traveled (VMT) Analysis

Effective July 1st, 2020, the longstanding metric of roadway level of service (LOS), which is typically measured in terms of vehicle delay, roadway capacity and congestion, will no longer be considered a significant impact under the California Environmental Quality Act (CEQA). Pursuant to CEQA Guidelines, Section 15064.3, VMT is now the most appropriate measure of transportation impacts.

The City of Laguna Niguel has prepared the *City of Laguna Niguel Transportation Assessment Guidelines (Nov 2020*), detailing the appropriate VMT methodologies, thresholds of significance, and feasible mitigation measures. This analysis follows the practices and recommendations in the *City of Laguna Niguel Transportation Assessment Guidelines (Nov 2020)*.

3.0 Existing Traffic Volumes & Circulation System

This section provides a discussion of existing study area conditions and traffic volumes.

3.1 Existing Traffic Controls and Intersection Geometrics

RK conducted a field review of the study area in February 2021 to determine the existing traffic controls and intersection geometrics for roadway facilities near the site. Exhibit 3-1 identifies the existing roadway conditions within the study including the study intersection of Crown Valley Parkway / La Plata Drive. The number of through traffic lanes for existing roadways and the existing intersection controls are identified. The type of traffic control and number of lanes at an intersection are key inputs for the calculation of level of service.

3.2 Existing Traffic Volumes

Due to the COVID-19 pandemic, collection of new traffic counts would result might abnormal traffic volume data as traffic volumes and patterns might not be typical.

After reviewing available pre-pandemic traffic count data provided by the City within the study area, pre-pandemic traffic counts were available from May 2019 for the nearby intersection of Crown Valley Parkway / La Paz Road.

In order to derive valid existing (2021) traffic count data. Existing 2021 traffic count data was newly collected at the following intersections:

- Crown Valley Parkway (NS) / La Plata Drive (EW); and
- Crown Valley Parkway (NS) / La Paz Road (EW)

Utilizing the May 2019 pre-pandemic traffic count data for the Crown Valley Parkway / La Paz Road intersection, RK then projected 2021 traffic count data at the Crown Valley Parkway / La Paz Road intersection by application of a one percent (1%) growth rate per year for two (2) years.

A comparison of projected 2021 and observed 2021 traffic count data for the Crown Valley Parkway / La Paz Road intersection was made based on the intersection's total volume to produce an adjustment factor between pandemic and non-pandemic

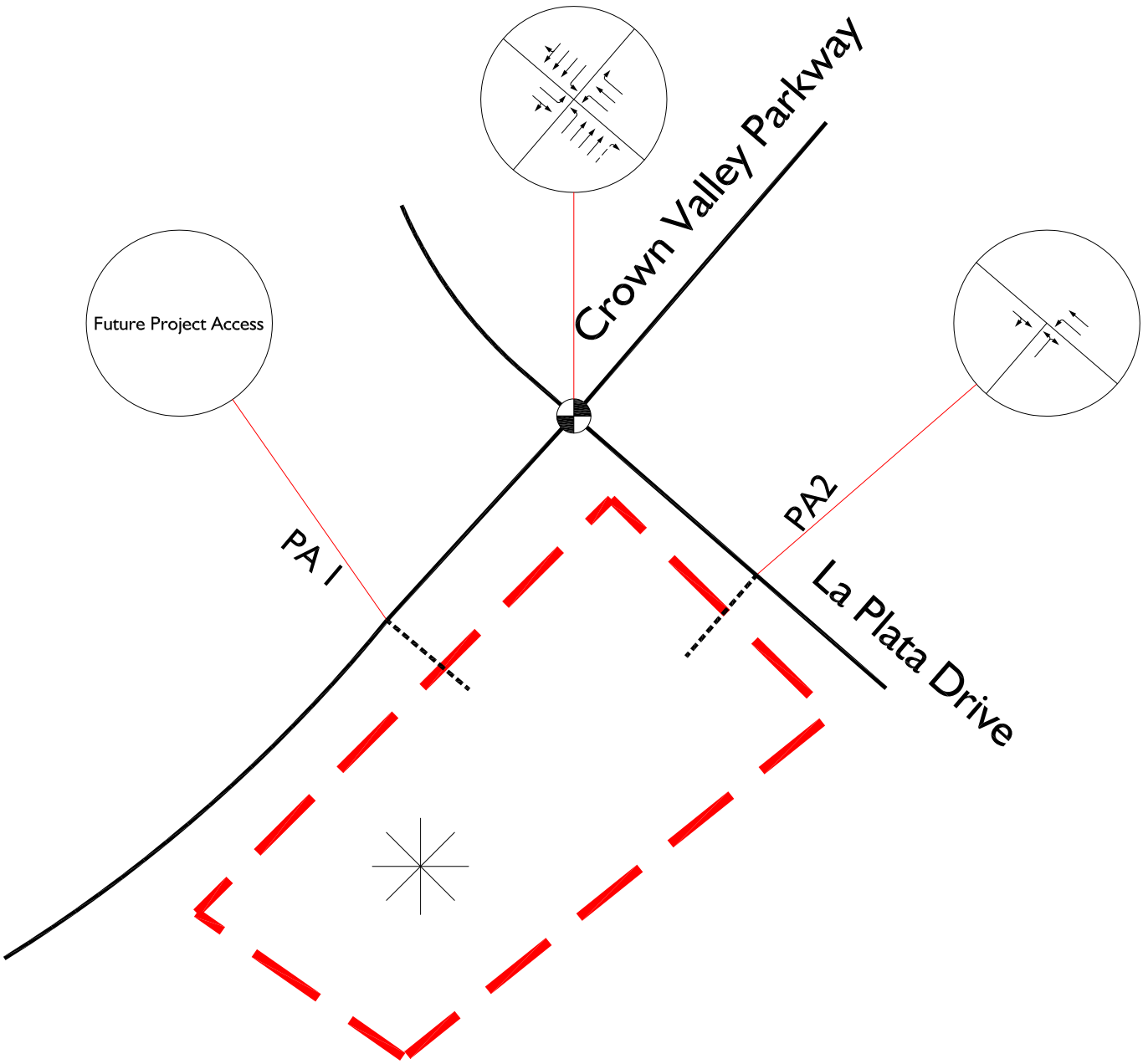
conditions. This adjustment factor correspondingly was applied to the newly observed 2021 traffic data for the study intersections to derive non-pandemic existing 2021 traffic conditions volumes for use in this analysis.

Existing traffic count data is contained in Appendix A.

Exhibit 3-2 shows the existing (2021) conditions traffic volumes for the study area.

Exhibit 3-1

Existing Study Intersection Geometry and Traffic Controls



Legend:

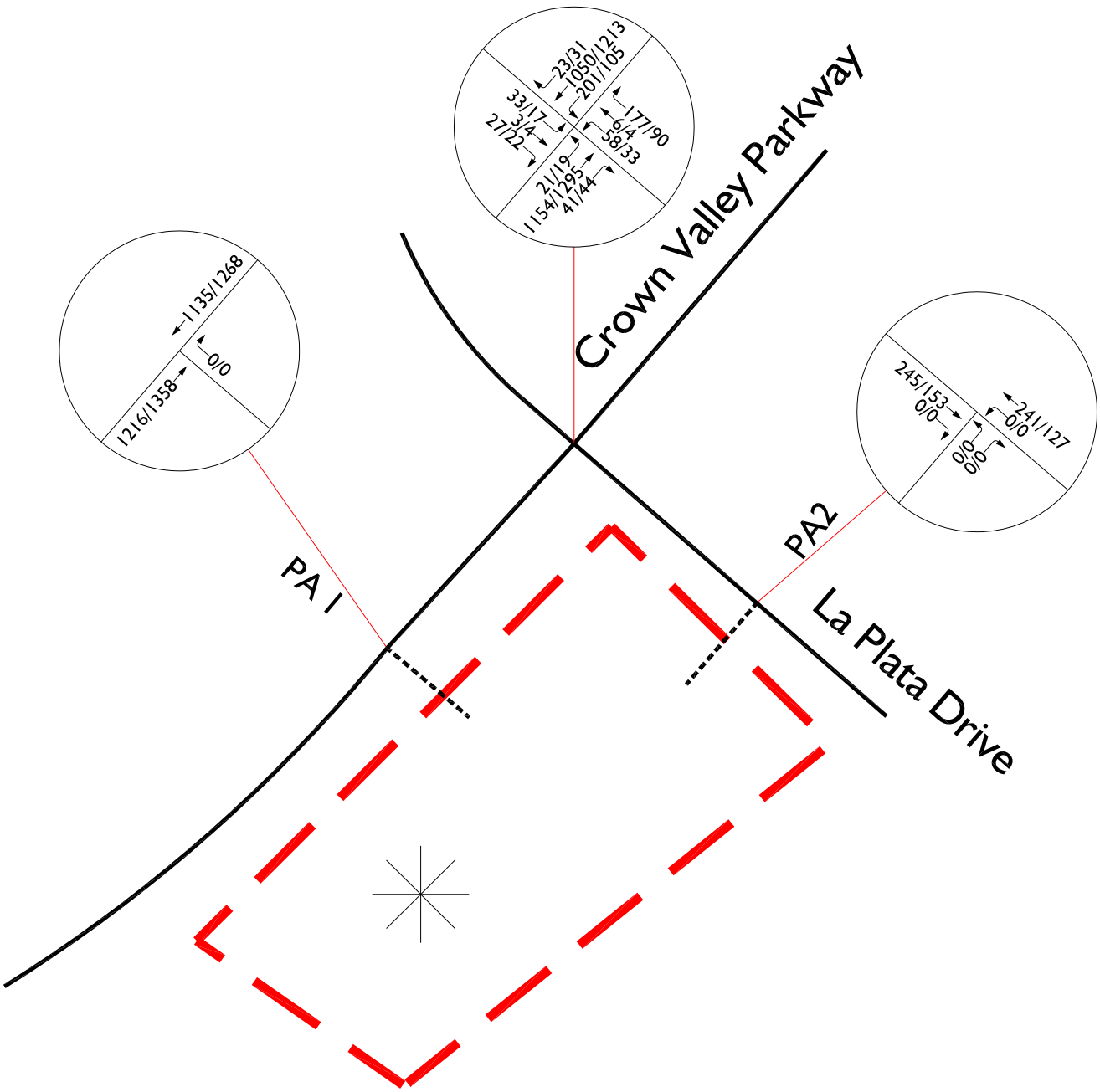
= Traffic Signal

= Defacto Right Turn

N

Exhibit 3-2

Existing Conditions Traffic Volumes



Legend:

10/20 = AM/PM Peak Hour Volumes

N

4.0 Projected & Future Traffic Volumes

This section of the report provides a discussion on methodologies utilized to derive future traffic volumes for the study area.

4.1 Project Traffic Conditions

4.1.1 Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development. The trip generation for the project is based upon the specific land uses that have been planned for this development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017)*. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Table 4-1 shows the ITE trip generation rates for the proposed as well as the existing land use which will be displaced by the proposed project.

Table 4-2 shows the trip generation for the proposed project utilizing the trip generation rates shown in Table 4-1.

As shown in Table 4-2, based on ITE trip generation rates, the proposed project is forecast to generate approximately 289 daily trips which include approximately 21 AM peak hour trips and approximately 29 PM peak hour trips.

As previously noted, the proposed project will displace the existing K-8 private school use with a maximum capacity of 100 students.

Table 4-3 shows the trip generation for the existing land use utilizing the ITE trip generation rates shown in Table 4-1.

As shown in Table 4-3, based on ITE trip generation rates, the existing land use generates approximately 411 daily trips which include approximately 91 AM peak hour trips and approximately 26 PM peak hour trips.

Table 4-4 shows the project's net trip generation after accounting for the existing land use which will be displaced.

As shown in Table 4-4, when compared to the existing land use, the proposed project is forecast to generate approximately 122 FEWER NET daily trips which include approximately 70 FEWER NET AM peak hour trips and approximately 3 ADDITIONAL NET PM peak hour trips.

Also, when compared to the existing land use which generated traffic in short bursts during school pick-up and drop-off times, the proposed project is expected to have a traffic generation that is more evenly distributed throughout the day and peak periods.

In order to conservatively assess the proposed project's potential transportation impact, the traffic analysis utilizes the project trip generation shown in Table 5-2 without taking credit for the existing land use.

4.1.2 Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of retail, employment, and recreational opportunities, and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses and highways within the study area.

The outbound project trip distribution is shown in Exhibit 4-1 and the inbound project trip distribution is shown in Exhibit 4-2.

4.1.3 Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic-reducing potential of public transit and other modes is significant. However, the traffic projections in this study are conservative in that public transit and alternative transportation may be able to reduce the traffic volumes, but, no modal split reduction is applied to the projections. With the

implementation of transit service and provision of alternative transportation ideas and incentives, the automobile traffic demand can be reduced significantly.

4.1.4 Project Traffic Volumes/Assignment

The assignment of project traffic to the adjoining roadway system is based upon the project's trip generation, trip distribution, and proposed arterial highway and local street systems that would be in place by the time of initial occupancy of the site.

Project traffic volumes are shown in Exhibit 4-3.

4.2 Existing Plus Project Conditions Traffic Volumes

Existing Plus Project Conditions traffic volumes consist of the summation of the existing (2021) traffic volumes shown in Exhibit 3-2 and the project traffic volumes shown in Exhibit 4-3.

Existing Plus Project traffic volumes are shown in Exhibit 4-4.

4.3 Background Traffic

4.3.1 Method of Projection

To assess future conditions, project traffic is combined with existing traffic and area-wide growth. To account for area-wide/ambient growth in the study area, an annual growth rate of 1% per year has been applied to existing (2021) traffic volumes over a one-year period to derive project opening year (2022) traffic volumes.

4.3.2 Cumulative Projects Traffic

Based on discussions with City staff, there are currently no cumulative or background projects within close proximity of the project site.

4.4 Opening Year (2022) Without Project Conditions Traffic Volumes

Opening Year (2022) Without Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2021) traffic volumes at 1% per year.

Opening Year (2022) Without Project Conditions traffic volumes are shown in Exhibit 4-5.

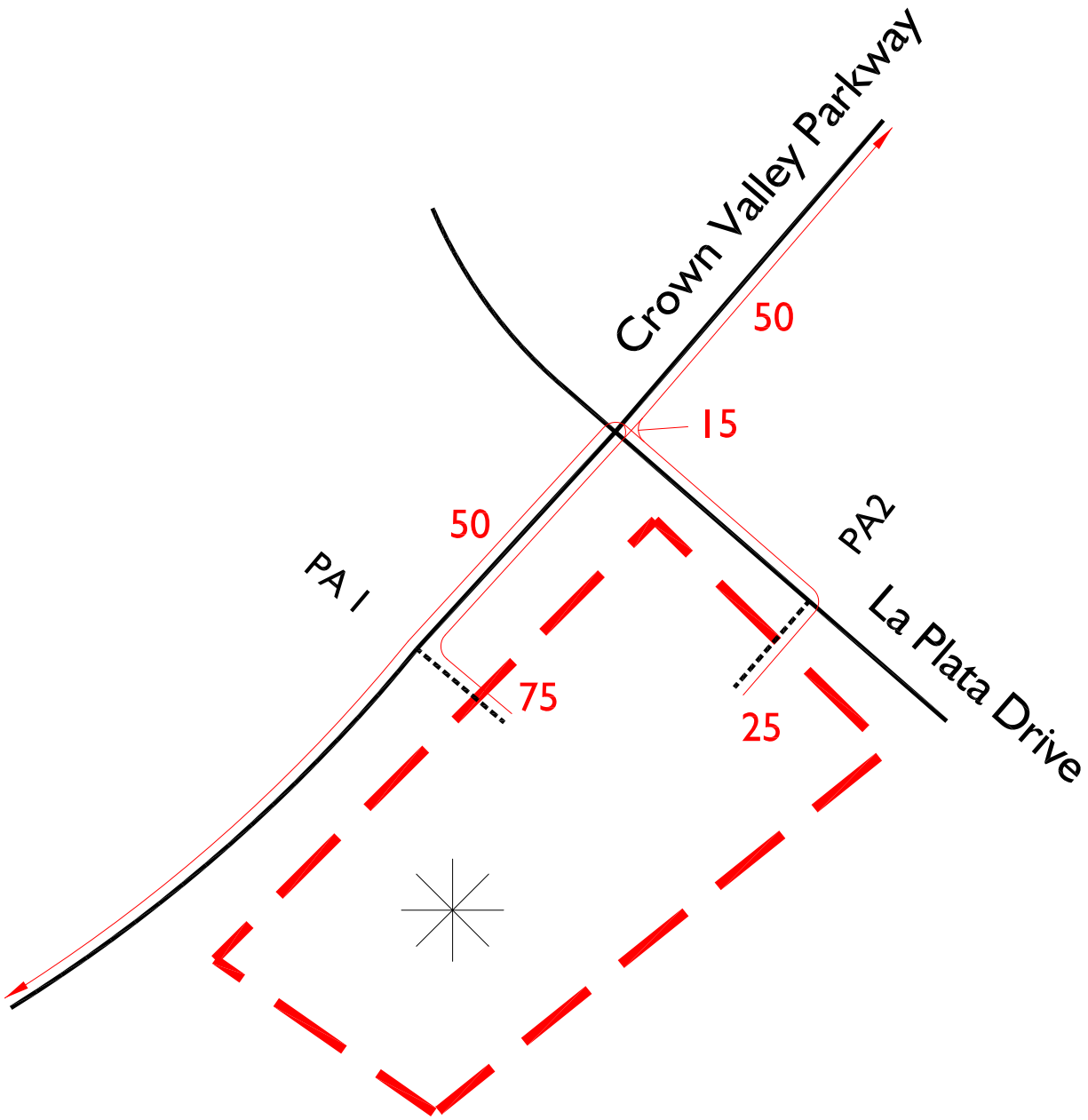
4.5 Opening Year (2022) With Project Conditions Traffic Volumes

Opening Year (2022) With Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2021) traffic volumes at 1% per year, plus the traffic generated by the proposed project.

Opening Year (2022) With Project Conditions traffic volumes are shown in Exhibit 4-6.

Exhibit 4-1

Outbound Project Trip Distribution



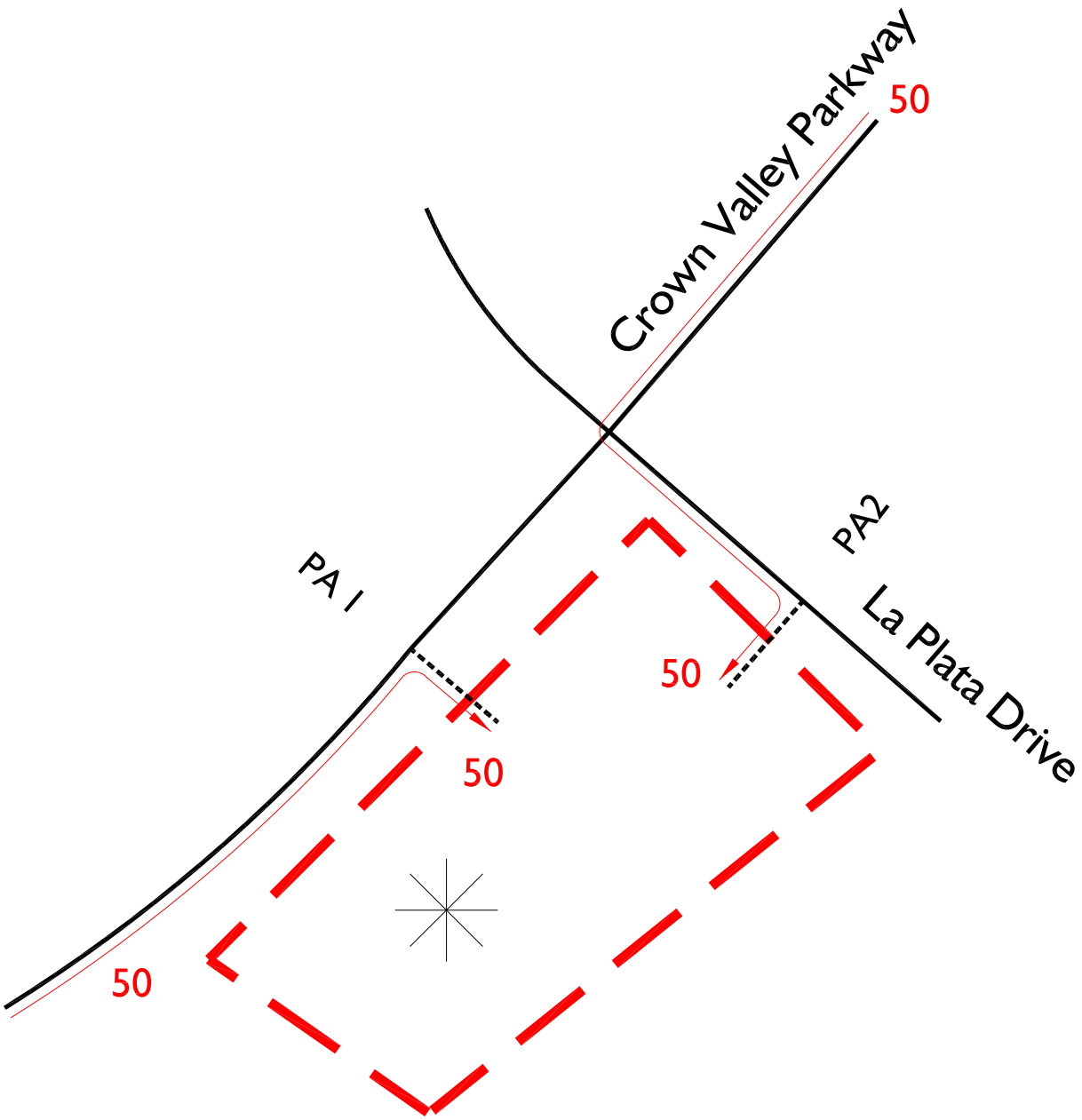
Legend:

10 = Percent to/from Project

N

Exhibit 4-2

Inbound Project Trip Distribution



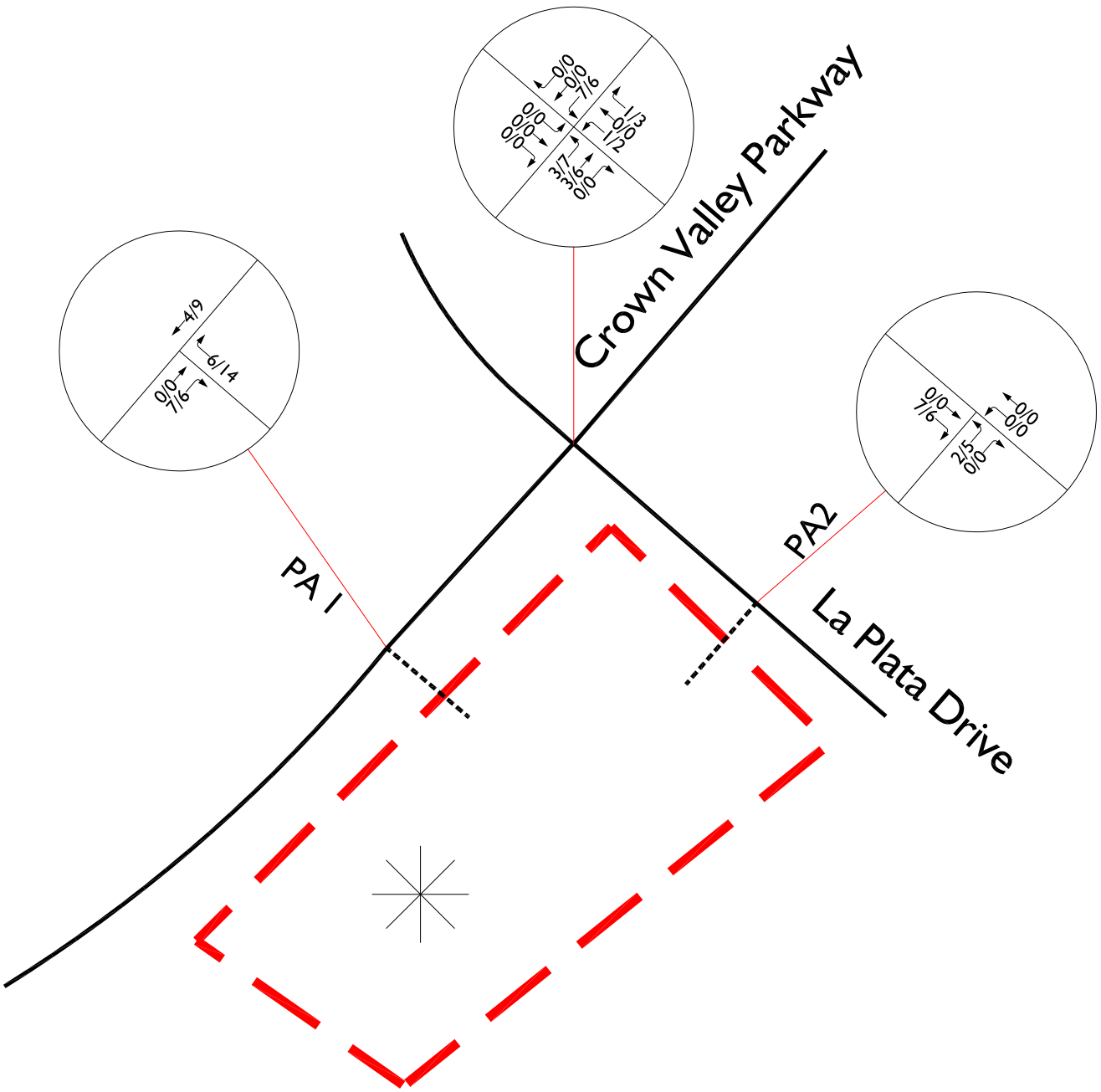
Legend:

10 = Percent to/from Project

N

Exhibit 4-3

Project Traffic Volumes



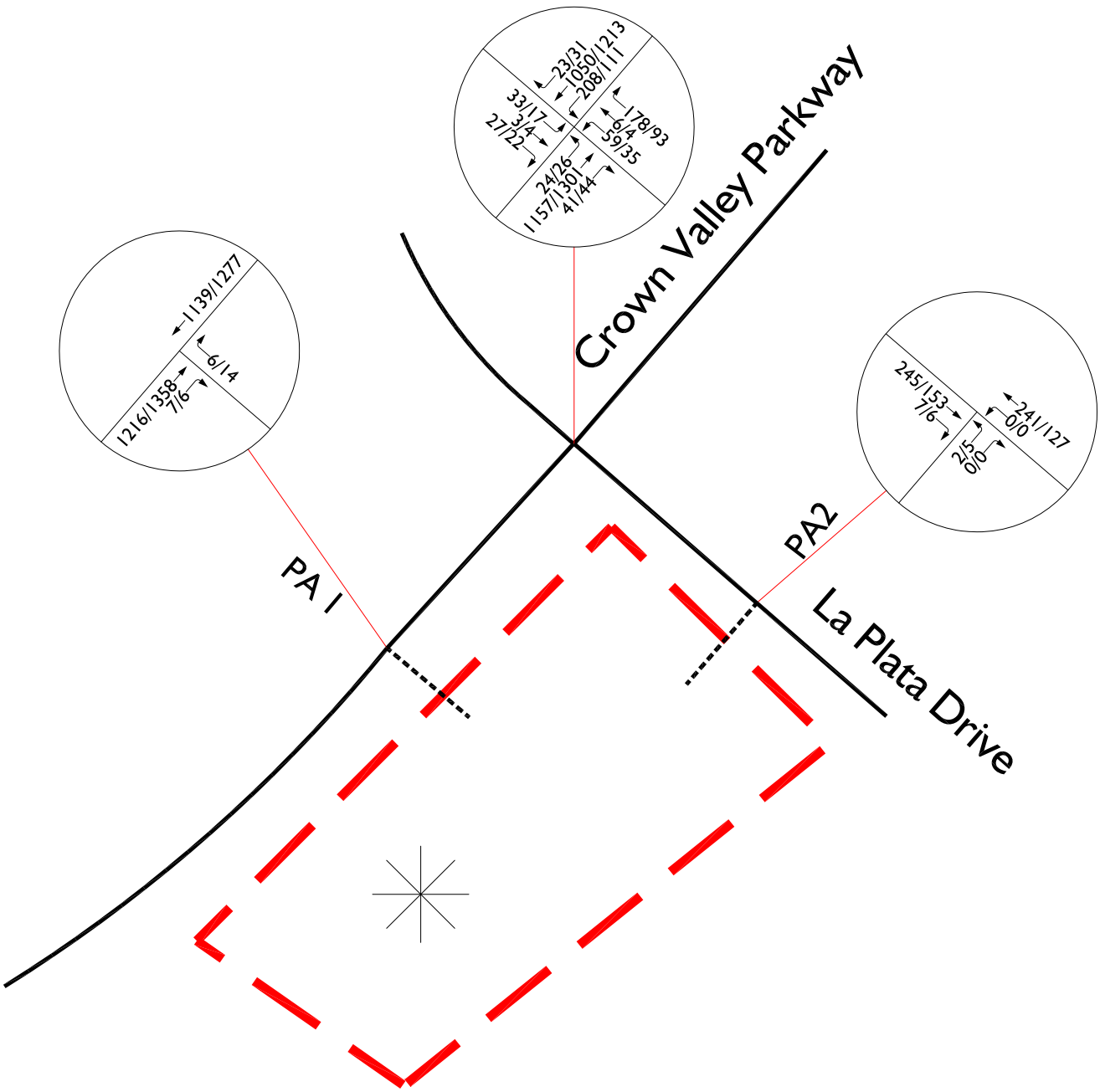
Legend:

10/20 = AM/PM Peak Hour Volumes

N

Exhibit 4-4

Existing Plus Project Conditions Traffic Volumes



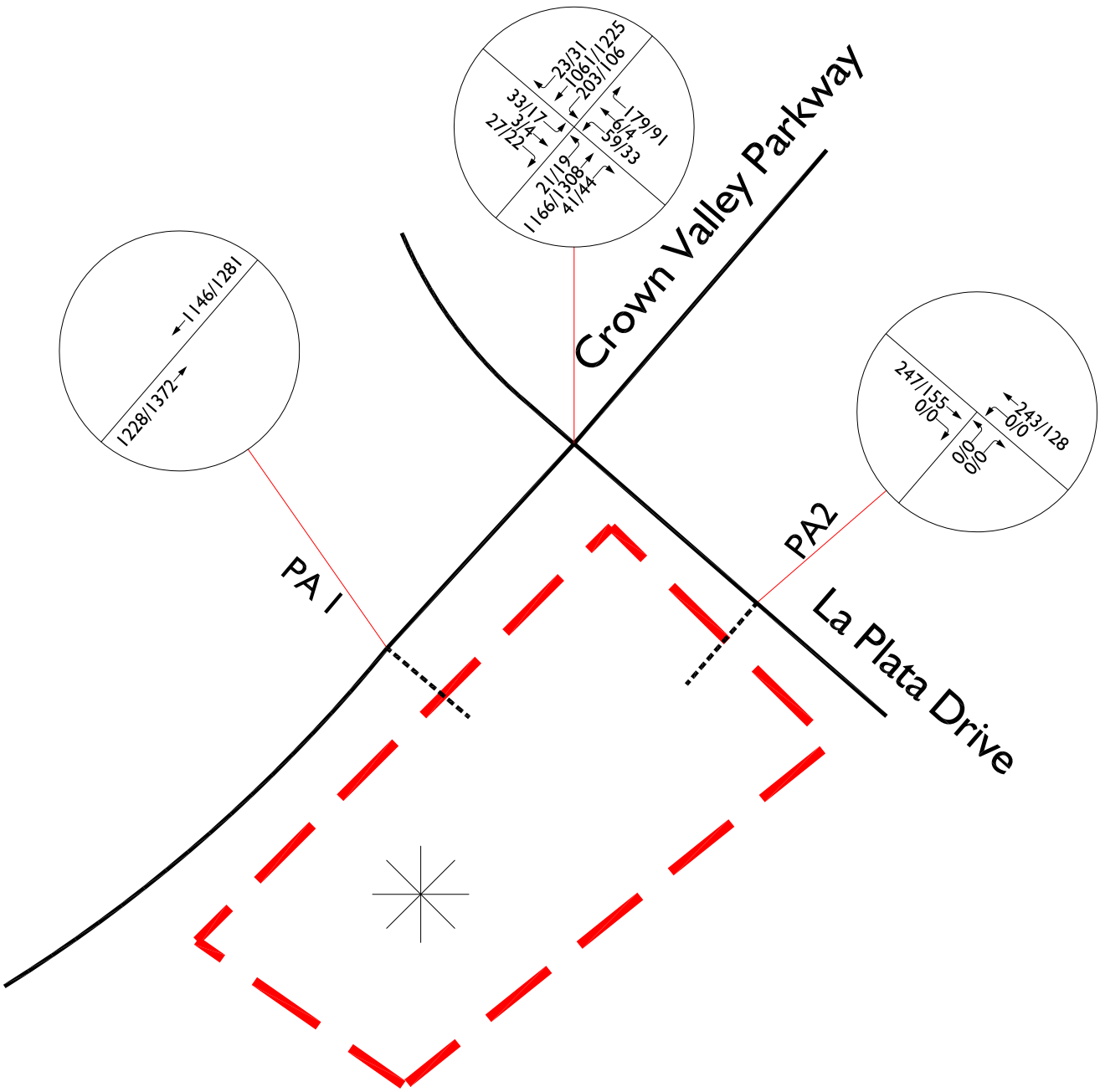
Legend:

10/20 = AM/PM Peak Hour Volumes

N

Exhibit 4-5

Project Opening Year (2022) Without Project Conditions Traffic Volumes



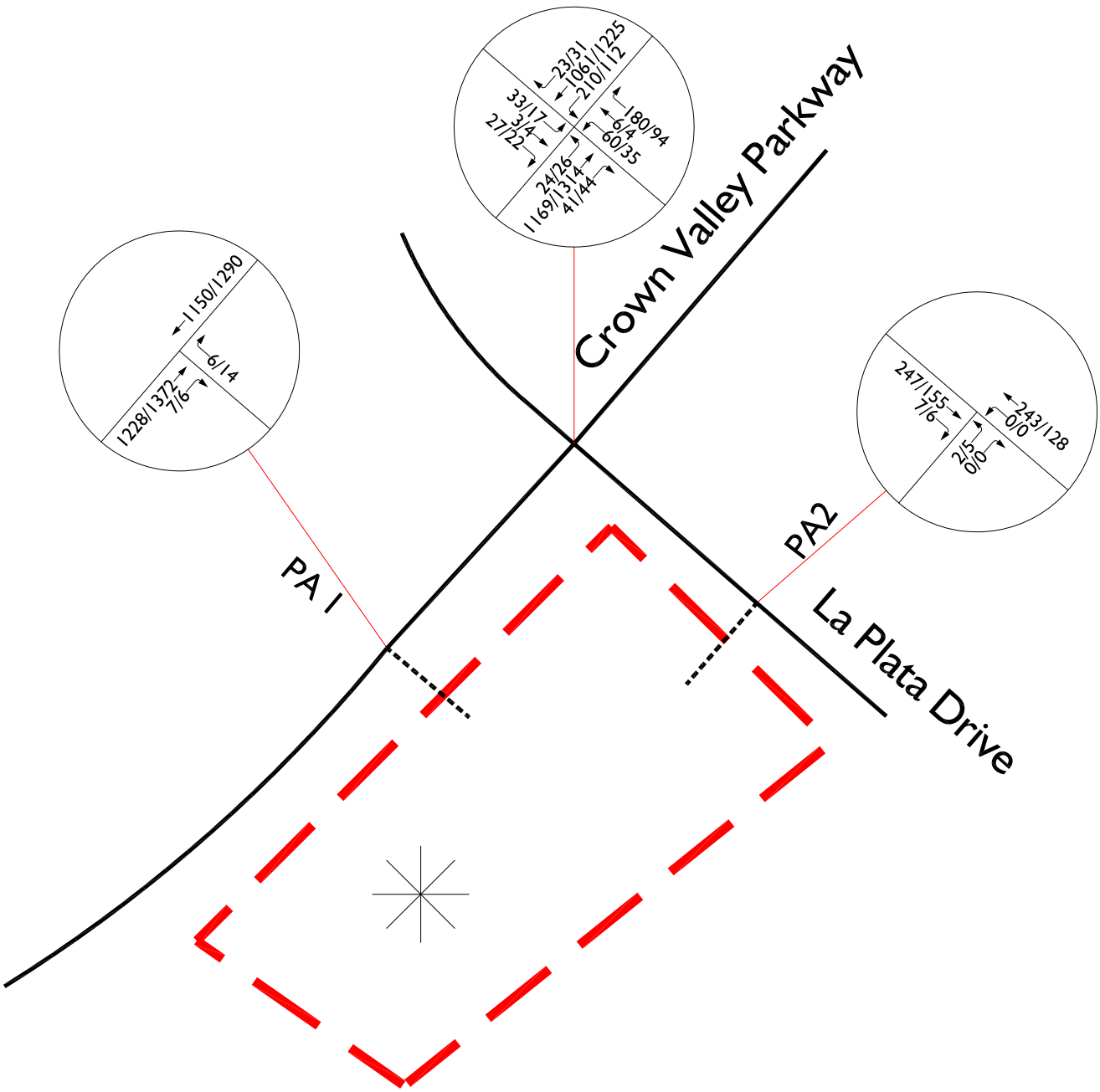
Legend:

10/20 = AM/PM Peak Hour Volumes

N

Exhibit 4-6

Project Opening Year (2022) With Project Conditions Traffic Volumes



Legend:

10/20 = AM/PM Peak Hour Volumes

N

Table 4-1
ITE Trip Generation Rates[1]

Land Use	Units	ITE Code	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Proposed Use - Assisted Living	Beds	254	0.12	0.07	0.19	0.10	0.16	0.26	2.60
Existing Use - K-8 Private School	Students	534	0.50	0.41	0.91	0.12	0.14	0.26	4.11

[1] Source: *2017 ITE Trip Generation Manual (10th Edition).*

Table 4-2
Proposed Project Trip Generation[1]

Land Use (ITE Code)	Quantity	Units	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Assisted Living (254)	111.0	Beds	13	8	21	11	18	29	289

[1] Source: *2017 ITE Trip Generation Manual (10th Edition).*

Table 4-3
Existing Land Use Trip Generation[1]

Land Use (ITE Code)	Quantity	Units	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Private K-8 School (534)	100.0	Students	50	41	91	12	14	26	411

[1] Source: *2017 ITE Trip Generation Manual (10th Edition).*

Table 4-4
Project Net Trip Generation[1]

Land Use (ITE Code)	AM			PM			Daily
	In	Out	Total	In	Out	Total	
Proposed Use	13	8	21	11	18	29	289
Existing Use	-50	-41	-91	-12	-14	-26	-411
Net Trip Generation	**-37**	**-33**	**-70**	**-1**	**4**	**3**	**-122**

[1] Source: *2017 ITE Trip Generation Manual (10th Edition).*

5.0 Study Intersection Peak Hour Level of Service Analysis

5.1 Existing Conditions Study Intersection Peak Hour LOS

Existing Conditions level of service (LOS) calculations for the study intersections are shown in Table 5-1 and are based upon the baseline existing (2021) volumes shown in Exhibit 3-2, and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-1, the study intersections are all currently operating at an acceptable LOS (LOS D or better) during the peak hours for Existing Conditions.

Detailed LOS analysis sheets for Existing Conditions are contained in Appendix B.

5.2 Existing Plus Project Conditions Study Intersection Peak Hour LOS

Existing Plus Project Conditions level of service (LOS) calculations for the study intersections are shown in Table 5-2 and are based upon the Existing Plus Project Conditions traffic volumes shown in Exhibit 4-4, and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-2, the study intersections are forecast to continue operating at an acceptable LOS (LOS D or better) during the peak hours for Existing Plus Project Conditions.

As also shown in Table 5-2, based on agency-established criteria, the proposed project is forecast to not require improvements at the study intersections for Existing Plus Project Conditions.

Detailed LOS analysis sheets for Existing Plus Project Conditions are contained in Appendix C.

5.3 Opening Year (2022) Without Project Conditions Study Intersection Peak Hour LOS

Opening Year (2022) Without Project Conditions level of service (LOS) calculations for the study intersections are shown in Table 5-3 and are based upon the Project Opening Year (2022) Without Project Conditions traffic volumes shown in Exhibit 4-5, and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-3, the study intersections are forecast to continue operating at an acceptable LOS (LOS D or better) during the peak hours for Opening Year (2022) Without Project Conditions.

Detailed LOS analysis sheets for Opening Year (2022) Without Project Conditions are contained in Appendix D.

5.4 Opening Year (2022) With Project Conditions Study Intersection Peak Hour LOS

Opening Year (2022) With Project Conditions level of service (LOS) calculations for the study intersections are shown in Table 5-4 and are based upon the Opening Year (2022) With Project Conditions traffic volumes shown in Exhibit 4-5, and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-4, the study intersections are forecast to continue operating at an acceptable LOS (LOS D or better) during the peak hours for Opening Year (2022) With Project Conditions.

As also shown in Table 5-4, based on agency-established criteria, the proposed project is forecast to not require improvements at the study intersections for Opening Year (2022) With Project Conditions.

Detailed LOS analysis sheets for Opening Year (2022) With Project Conditions are contained in Appendix E.

Table 5-1
Study Intersection LOS Analysis Summary
Existing Conditions

	Intersection	Traffic Control[2]	V/C Ratio[1,3]		Delay (Secs)[1,4]		Level of Service	
			AM	PM	AM	PM	AM	PM
1.	Crown Valley Parkway (NS) / La Plata Drive (EW)	TS	0.518	0.429	--	--	A	A
2.	Crown Valley Parkway (NS) / Project Access 1 (EW)	CSS	--	--	--	--	--	--
3.	Project Access 2 (NS) / La Plata Drive (EW)	CSS	--	--	0.000	0.000	A	A

[1] Deficient operation shown in **Bold**.

[2] TS = Traffic Signal

CSS = Cross-Street Stop

[3] V/C = Volume to Capacity Ratio (V/C) is calculated utilizing the Traffix analysis software and Intersection Capacity Utilization (ICU) methodology for signalzied intersections.

[4] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements) are shown.

Table 5-2
Study Intersection LOS Analysis Summary
Existing Plus Project Conditions

	Intersection	Traffic Control[2]	Existing Conditions						Existing Plus Project Conditions							
			V/C Ratio[1,3]		Delay (Secs)[1,4]		Level of Service		V/C Ratio[1,3]		Delay (Secs)[1,4]		Level of Service		Significant Impact?	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Crown Valley Parkway (NS) / La Plata Drive (EW)	TS	0.518	0.429	--	--	A	A	0.523	0.435	--	--	A	A	No	No
2.	Crown Valley Parkway (NS) / Project Access 1 (EW)	CSS	--	--	--	--	--	--	--	--	15.6	17.3	C	C	No	No
3.	Project Access 2 (NS) / La Plata Drive (EW)	CSS	--	--	0.000	0.000	A	A	--	--	12.1	10.3	B	B	No	No

[1] Deficient operation shown in **Bold**.

[2] TS = Traffic Signal

CSS = Cross-Street Stop

[3] V/C = Volume to Capacity Ratio (V/C) is calculated utilizing the Traffix analysis software and Intersection Capacity Utilization (ICU) methodology for signalized intersections.

[4] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements) are shown.

Table 5-3
Study Intersection LOS Analysis Summary
Opening Year (2022) Without Project Conditions

	Intersection	Traffic Control[2]	V/C Ratio[1,3]		Delay (Secs)[1,4]		Level of Service	
			AM	PM	AM	PM	AM	PM
1.	Crown Valley Parkway (NS) / La Plata Drive (EW)	TS	0.523	0.432	--	--	A	A
2.	Crown Valley Parkway (NS) / Project Access 1 (EW)	CSS	--	--	--	--	--	--
3.	Project Access 2 (NS) / La Plata Drive (EW)	CSS	--	--	0.000	0.000	A	A

[1] Deficient operation shown in **Bold**.

[2] TS = Traffic Signal

CSS = Cross-Street Stop

[3] V/C = Volume to Capacity Ratio (V/C) is calculated utilizing the Traffix analysis software and Intersection Capacity Utilization (ICU) methodology for signalzied intersections.

[4] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements) are shown.

Table 5-4
Study Intersection LOS Analysis Summary
Opening Year (2022) With Project Conditions

	Intersection	Traffic Control[2]	Opening Year (2022) Without Project Conditions						Opening Year (2022) With Project Conditions							
			V/C Ratio[1,3]		Delay (Secs)[1,4]		Level of Service		V/C Ratio[1,3]		Delay (Secs)[1,4]		Level of Service		Significant Impact?	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Crown Valley Parkway (NS) / La Plata Drive (EW)	TS	0.523	0.432	--	--	A	A	0.528	0.439	--	--	A	A	No	No
2.	Crown Valley Parkway (NS) / Project Access 1 (EW)	CSS	--	--	--	--	--	--	--	--	15.7	17.5	C	C	No	No
3.	Project Access 2 (NS) / La Plata Drive (EW)	CSS	--	--	0.000	0.000	A	A	--	--	12.2	10.3	B	B	No	No

[1] Deficient operation shown in **Bold**.

[2] TS = Traffic Signal

CSS = Cross-Street Stop

[3] V/C = Volume to Capacity Ratio (V/C) is calculated utilizing the Traffix analysis software and Intersection Capacity Utilization (ICU) methodology for signalized intersections.

[4] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements) are shown.

6.0 CEQA Vehicle Miles Traveled (VMT) Analysis

In accordance with the Office of Planning Research (OPR), vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision 15064.3(b)(2) of the CEQA Guidelines, regarding roadway capacity, a project's effect on automobile delay cannot constitute a significant environmental impact.

Based on the City of Laguna Niguel guidelines in regards to VMT, land use projects that meets any one of the following screening criteria would be expected to cause a less than significant CEQA transportation impact without having to conduct a detailed VMT analysis:

- Small Projects
- Redevelopment Projects
- Projects Located in a Low VMT Area
- Projects Located in Transit Priority Areas
- Locally Serving Land Use Projects
- Affordable Housing Projects

Based on the aforementioned screening criteria, the proposed project would be expected to cause a less than significant CEQA transportation impact as the City's screening thresholds for *Small Projects* is met. The screening thresholds for *Small Projects is as follows:*

Small Projects

Projects that would generate less than 500 vehicle trips per day based on the latest Institute of Transportation Engineers (ITE) Trip Generation Manual are presumed to be less than significant. As with other types of transportation analysis, the trip generation of the current uses, which have been determined to constitute the CEQA baseline conditions, could be reduced from the proposed project so only net trips are assessed. A project

demonstrating fewer and/or shorter trips leading to lower VMT than existing conditions may be presumed to be less than significant.

As previously shown in Table 4-2, even without taking credit for the existing use that will be displaced, the proposed project is forecast to generate approximately 296 daily trips which is much less than the 500 trip threshold for small projects.

Hence, the proposed project is screened out and is deemed to not result in any significant VMT impacts per the City's adopted thresholds.

7.0 Crown Valley Access & Sight Distance Analysis

As previously noted, access for the project site is planned via the following:

- One proposed right-in/right-out access driveway along Crown Valley Parkway; and
- One existing full-access unsignalized driveway along La Plata Drive.

The proposed driveway on Crown Valley Parkway is planned to be located approximately 240 feet south of the Crown Valley Parkway / La Plata Drive intersection.

The new access would provide a second point of entrance/exit for the project site, reducing the amount of traffic on the existing access on La Plata Drive.

Since the access is planned to be restricted to right-in/right-out only with the existing raised median on Crown Valley Parkway, the proposed access is generally expected to result in less friction on the flow of traffic on Crown Valley Parkway when compared to a full access that facilitates left turns in and out of a site.

As previously shown in Section 5.0 of this report, the study intersections and the proposed driveway are forecast to continue to operate at an acceptable level of service for all of the analysis scenarios.

As requested by the City, a sight distance evaluation has also been prepared to determine the adequacy of sight distance at the proposed right-in/right-out driveway on Crown Valley Parkway.

Crown Valley Parkway has a posted speed limit of 45 MPH going northbound and southbound within the vicinity of the project site. Based on Highway Design Manual standards regarding sight distance, 360 feet is recommended to provide adequate sight for drivers entering the Crown Valley Parkway roadway.

Exhibit 7-1 shows the required sight distance.

A field review was conducted on March 1st, 2021 to evaluate the sight distance at the project access driveway along Crown Valley Parkway and to determine if adequate sight distance can be provided.

The picture shown below and taken during the site visit indicates that at the approximate driveway location and at the sidewalk and road elevation, clear line of sight is currently provided looking south along Crown Valley Parkway towards Central Park Drive. Based on the field observations and photo, vehicles can be seen all the way from approximately the intersection of Crown Valley Parkway / Central Park Drive, which is located approximately 1,300 feet south of the proposed driveway location.

Currently, Crown Valley Parkway has an elevation below the project site. Hence, the proposed driveway would slope down from the site onto the edge of Crown Valley Parkway.

Based on the field observation, as long as the proposed driveway is designed in a manner where the approaching slope on the driveway is not steep before joining the edge of Crown Valley Parkway, and obstructions such as monumentation, landscaping, and roadway signage and features are not within the line of sight, adequate sight distance can be accommodated for this driveway approach.

Crown Valley Parkway looking south at the approximate location of proposed driveway.

Exhibit 7-1

Sight Distance Evaluation - Crown Valley Parkway Driveway

Legend:

= Limited Use Area

8.0 Findings & Conclusions

The purpose of this traffic impact analysis is to evaluate the proposed Laguna Niguel Senior Living Center & Grace Church Remodel (hereinafter referred to as project) from a traffic and circulation standpoint and to determine whether the proposed project will have a significant traffic impact on the environment. This study has been conducted pursuant to the *City of Laguna Niguel Transportation Assessment Guidelines (November 2020)* and the California Environmental Quality Act (CEQA) requirements.

8.1 Proposed Project

The proposed project is located adjacent to the existing Grace Church on the corner of the Crown Valley Parkway / La Plata Drive intersection in the City of Laguna Niguel.

The project site currently consists of the following land uses:

- The existing Grace Church; and
- A K-8 private school (to be displaced).

The proposed project consists of the construction of a senior assisted living and memory care facility with a size of 106,046 square feet (130,046 if the parking areas are included) consisting of a total of 108 units housing 111 beds, to be located adjacent to the existing Grace Church. The proposed project is expected to displace an existing building on-site which served a K-8 private school with a maximum enrollment capacity of 100 students.

Access for the project site is planned via the following:

- One proposed right-in/right-out access driveway along Crown Valley Parkway; and
- One existing full-access unsignalized driveway along La Plata Drive.

8.2 Project Trip Generation

Based on ITE trip generation rates, the proposed project is forecast to generate approximately 289 daily trips which include approximately 21 AM peak hour trips and approximately 29 PM peak hour trips.

As previously noted, the proposed project will displace the existing K-8 private school use with a maximum capacity of 100 students.

Based on ITE trip generation rates, the existing land use generates approximately 411 daily trips which include approximately 91 AM peak hour trips and approximately 26 PM peak hour trips.

When compared to the existing land use, the proposed project is forecast to generate approximately 122 FEWER NET daily trips which include approximately 70 FEWER NET AM peak hour trips and approximately 3 ADDITIONAL NET PM peak hour trips.

Also, when compared to the existing land use which generated traffic in short bursts during school pick-up and drop-off times, the proposed project is expected to have a traffic generation that is more evenly distributed throughout the day and peak periods.

In order to conservatively assess the proposed project's potential transportation impact, the traffic analysis utilizes the project trip generation without taking credit for the existing land use.

8.3 Study Intersections Level of Service Analysis Summary

All study intersections are currently operating at an acceptable LOS (LOS D or better) during the peak hours for Existing Conditions and are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for all of the analysis scenarios evaluated as part of this report.

Based on agency-established criteria, the proposed project is forecast to not require improvements at the study intersections.

8.4 CEQA Vehicle Miles Traveled (VMT) Analysis Summary

The proposed project would be expected to cause a less than significant CEQA transportation impact as the City's screening thresholds for *Small Projects* is met. The screening thresholds for *Small Projects is as follows:*

Small Projects

Projects that would generate less than 500 vehicle trips per day based on the latest Institute of Transportation Engineers (ITE) Trip Generation Manual are presumed to be less than significant. As with other types of transportation analysis, the trip generation of the current uses, which have been determined to constitute the CEQA baseline conditions, could be reduced from the proposed project so only net trips are assessed. A project demonstrating fewer and/or shorter trips leading to lower VMT than existing conditions may be presumed to be less than significant.

As previously shown in Table 4-2, even without taking credit for the existing use that will be displaced, the proposed project is forecast to generate approximately 296 daily trips which is much less than the 500 trip threshold for small projects.

Hence, the proposed project is screened out and is deemed to not result in any significant VMT impacts per the City's adopted thresholds.

8.5 Crown Valley Access & Sight Distance Analysis Summary

As previously noted, access for the project site is planned via the following:

- One proposed right-in/right-out access driveway along Crown Valley Parkway; and
- One existing full-access unsignalized driveway along La Plata Drive.

The proposed driveway on Crown Valley Parkway is planned to be located approximately 240 feet south of the Crown Valley Parkway / La Plata Drive intersection.

The new access would provide a second point of entrance/exit for the project site, reducing the amount of traffic on the existing access on La Plata Drive.

Since the access is planned to be restricted to right-in/right-out only with the existing raised median on Crown Valley Parkway, the proposed access is generally expected to result in less friction on the flow of traffic on Crown Valley Parkway when compared to a full access that facilitates left turns in and out of a site.

As previously shown in Section 5.0 of this report, the study intersections and the proposed driveway are forecast to continue to operate at an acceptable level of service for all of the analysis scenarios.

As requested by the City, a sight distance evaluation has also been prepared to determine the adequacy of sight distance at the proposed right-in/right-out driveway on Crown Valley Parkway.

Crown Valley Parkway has a posted speed limit of 45 MPH going northbound and southbound within the vicinity of the project site. Based on Highway Design Manual standards regarding sight distance, 360 feet is recommended to provide adequate sight for drivers entering the Crown Valley Parkway roadway.

A field review was conducted on March 1st, 2021 to evaluate the sight distance at the project access driveway along Crown Valley Parkway and to determine if adequate sight distance can be provided.

Field observations indicate that at the approximate driveway location and at the sidewalk and road elevation, clear line of sight is currently provided looking south along Crown Valley Parkway towards Central Park Drive. Based on the field observation and photos, vehicles can be seen all the way from approximately the intersection of Crown Valley Parkway / Central Park Drive, which is located approximately 1,300 feet south of the proposed driveway location.

Currently, Crown Valley Parkway has an elevation below the project site. Hence, the proposed driveway would slope down from the site onto the edge of Crown Valley Parkway.

Based on the field observation, as long as the proposed driveway is designed in a manner where the approaching slope on the driveway is not steep before joining the edge of Crown Valley Parkway, and obstructions such as monumentation, landscaping, and roadway signage and features are not within the line of sight, adequate sight distance can be accommodated for this driveway approach.

8.6 Project Access and Circulation Recommendations

I. Install stop sign, stop bar and stop legend for outbound traffic at each project driveway.

II. Sight distance at each project access should be reviewed at the time of construction per City of Laguna Niguel standards.

i. A limited use area shall be maintained where a clear line of sight can be established.

ii. The limited use area shall be used for the purpose of prohibiting or clearing obstructions to maintain adequate sight distance at intersections.

iii. Limited use area to be kept clear of all obstructions over 30 inches high, including vegetation.

iv. No trees, walls, or any obstructions shall be allowed in the limited use area.

v. The toe of the slope shall not encroach into the limited use area.

As is the case for any roadway design, the City of Laguna Niguel should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

8.7 CEQA Findings & Checklist

Based on CEQA and agency-established thresholds of significance, the proposed project is forecast to not result in any significant traffic impacts and therefore, no mitigation measures are required for the proposed project.

A copy of the CEQA transportation checklist for the proposed project is contained in Appendix F of this report.

Appendices

Appendix A

Existing Traffic Counts

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Laguna Niguel
N/S: Crown Valley Parkway
E/W: La Plata Drive
Weather: Clear

File Name : 01_LNL_Crown Valley_La Plata AM
Site Code : 10521068
Start Date : 2/24/2021
Page No : 1

Groups Printed- Total Volume

	Crown Valley Parkway Southbound				La Plata Drive Westbound				Crown Valley Parkway Northbound				La Plata Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	154	1	161	3	0	20	23	2	134	5	141	1	0	2	3	328
07:15 AM	9	150	1	160	8	0	11	19	0	175	3	178	3	1	6	10	367
07:30 AM	10	200	3	213	6	0	26	32	2	202	4	208	4	1	10	15	468
07:45 AM	40	223	1	264	11	2	39	52	12	224	11	247	4	0	5	9	572
Total	65	727	6	798	28	2	96	126	16	735	23	774	12	2	23	37	1735
08:00 AM	76	207	6	289	13	2	36	51	1	198	7	206	13	1	4	18	564
08:15 AM	28	194	6	228	15	1	35	51	2	239	8	249	4	1	9	14	542
08:30 AM	13	195	5	213	6	0	28	34	1	239	6	246	5	0	3	8	501
08:45 AM	21	201	3	225	4	0	19	23	2	176	6	184	8	0	4	12	444
Total	138	797	20	955	38	3	118	159	6	852	27	885	30	2	20	52	2051
Grand Total	203	1524	26	1753	66	5	214	285	22	1587	50	1659	42	4	43	89	3786
Apprch %	11.6	86.9	1.5		23.2	1.8	75.1		1.3	95.7	3		47.2	4.5	48.3		
Total %	5.4	40.3	0.7	46.3	1.7	0.1	5.7	7.5	0.6	41.9	1.3	43.8	1.1	0.1	1.1	2.4	

	Crown Valley Parkway Southbound				La Plata Drive Westbound				Crown Valley Parkway Northbound				La Plata Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	40	**223**	1	264	11	**2**	**39**	**52**	**12**	224	**11**	247	4	0	5	9	**572**
08:00 AM	**76**	207	**6**	**289**	13	2	36	51	1	198	7	206	**13**	**1**	4	**18**	564
08:15 AM	28	194	6	228	**15**	1	35	51	2	**239**	8	**249**	4	1	**9**	14	542
08:30 AM	13	195	5	213	6	0	28	34	1	239	6	246	5	0	3	8	501
Total Volume	157	819	18	994	45	5	138	188	16	900	32	948	26	2	21	49	2179
% App. Total	15.8	82.4	1.8		23.9	2.7	73.4		1.7	94.9	3.4		53.1	4.1	42.9		
PHF	.516	.918	.750	.860	.750	.625	.885	.904	.333	.941	.727	.952	.500	.500	.583	.681	.952

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City of Laguna Niguel
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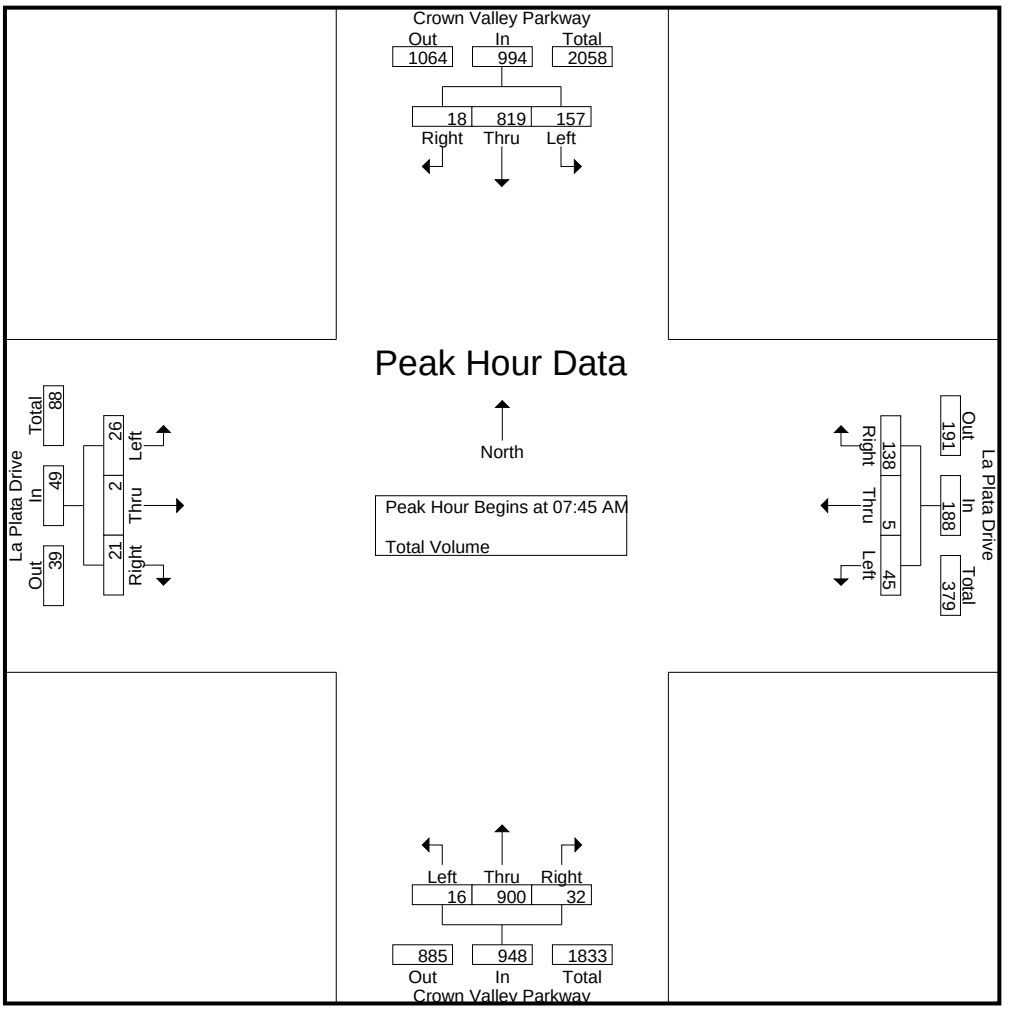
Weather: Clear

File Name : 01_LNL_Crown Valley_La Plata AM
Site Code : 10521068
Start Date : 2/24/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:45 AM				07:30 AM			
+0 mins.	10	200	3	213	11	**2**	**39**	**52**	**12**	224	**11**	247	4	**1**	**10**	15
+15 mins.	40	**223**	1	264	13	2	36	51	1	198	7	206	4	0	5	9
+30 mins.	**76**	207	**6**	**289**	**15**	1	35	51	2	**239**	8	**249**	**13**	1	4	**18**
+45 mins.	28	194	6	228	6	0	28	34	1	239	6	246	4	1	9	14
Total Volume	154	824	16	994	45	5	138	188	16	900	32	948	25	3	28	56
% App. Total	15.5	82.9	1.6		23.9	2.7	73.4		1.7	94.9	3.4		44.6	5.4	50	
PHF	.507	.924	.667	.860	.750	.625	.885	.904	.333	.941	.727	.952	.481	.750	.700	.778

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City of Laguna Niguel
N/S: Crown Valley Parkway
E/W: La Plata Drive
Weather: Clear

File Name : 01_LNL_Crown Valley_La Plata PM
Site Code : 10521068
Start Date : 2/24/2021
Page No : 1

Groups Printed- Total Volume

	Crown Valley Parkway Southbound				La Plata Drive Westbound				Crown Valley Parkway Northbound				La Plata Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	16	274	4	294	8	1	20	29	3	297	14	314	4	1	3	8	645
04:15 PM	22	254	7	283	8	1	14	23	5	273	6	284	4	1	2	7	597
04:30 PM	25	246	7	278	8	0	22	30	2	284	5	291	2	1	6	9	608
04:45 PM	25	241	8	274	4	1	19	24	6	229	12	247	4	0	7	11	556
Total	88	1015	26	1129	28	3	75	106	16	1083	37	1136	14	3	18	35	2406
05:00 PM	33	248	5	286	9	1	12	22	3	283	15	301	4	2	1	7	616
05:15 PM	27	270	3	300	13	0	21	34	9	253	2	264	5	1	5	11	609
05:30 PM	24	279	2	305	5	0	10	15	4	265	13	282	1	1	3	5	607
05:45 PM	16	259	5	280	7	0	12	19	8	226	12	246	1	0	4	5	550
Total	100	1056	15	1171	34	1	55	90	24	1027	42	1093	11	4	13	28	2382
Grand Total	188	2071	41	2300	62	4	130	196	40	2110	79	2229	25	7	31	63	4788
Apprch %	8.2	90	1.8		31.6	2	66.3		1.8	94.7	3.5		39.7	11.1	49.2		
Total %	3.9	43.3	0.9	48	1.3	0.1	2.7	4.1	0.8	44.1	1.6	46.6	0.5	0.1	0.6	1.3	

	Crown Valley Parkway Southbound				La Plata Drive Westbound				Crown Valley Parkway Northbound				La Plata Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	16	**274**	4	**294**	**8**	**1**	20	29	3	**297**	**14**	**314**	**4**	**1**	3	8	**645**
04:15 PM	22	254	7	283	8	1	14	23	5	273	6	284	4	1	2	7	597
04:30 PM	**25**	246	7	278	8	0	**22**	**30**	2	284	5	291	2	1	6	9	608
04:45 PM	25	241	**8**	274	4	1	19	24	**6**	229	12	247	4	0	**7**	**11**	556
Total Volume	88	1015	26	1129	28	3	75	106	16	1083	37	1136	14	3	18	35	2406
% App. Total	7.8	89.9	2.3		26.4	2.8	70.8		1.4	95.3	3.3		40	8.6	51.4		
PHF	.880	.926	.813	.960	.875	.750	.852	.883	.667	.912	.661	.904	.875	.750	.643	.795	.933

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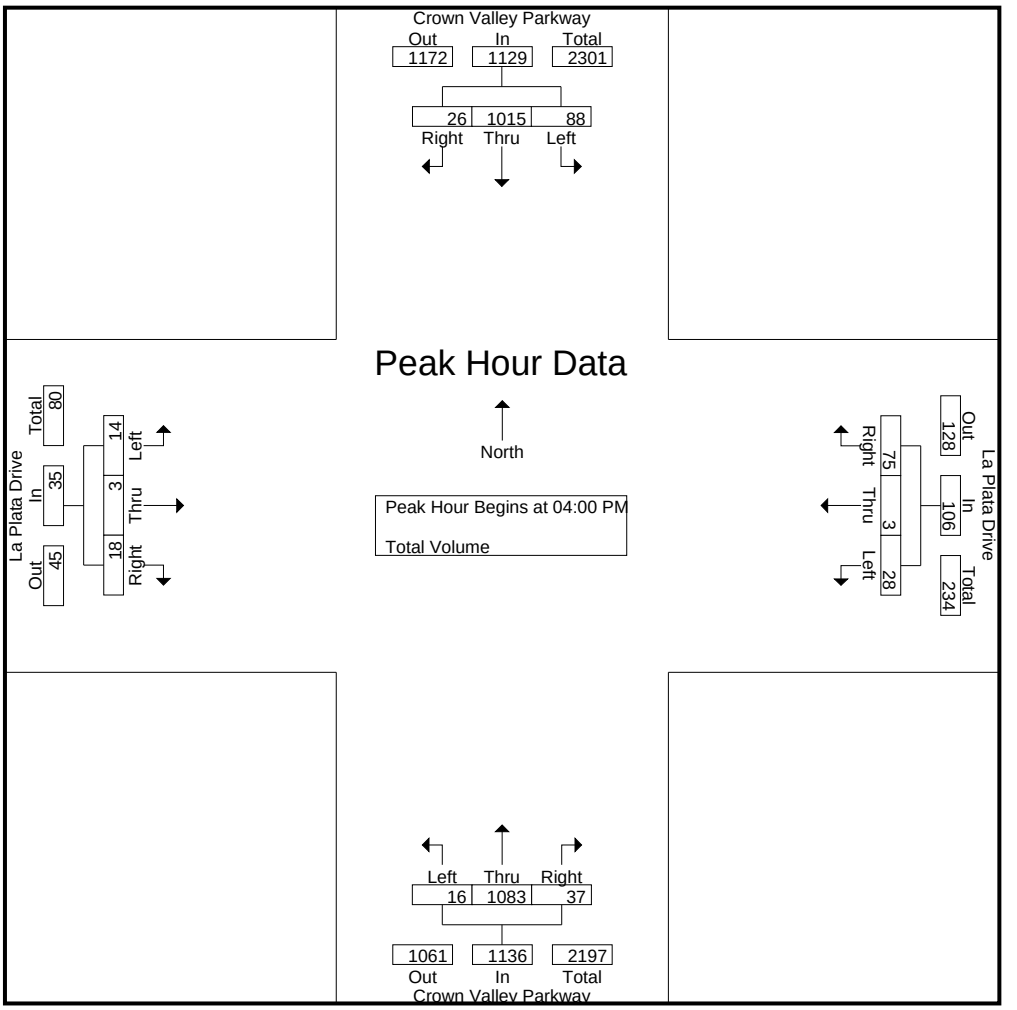
Site Code : 10521068
Start Date : 2/24/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:30 PM				04:00 PM				04:30 PM			
+0 mins.	**33**	248	**5**	286	8	0	**22**	30	3	**297**	**14**	**314**	2	1	6	9
+15 mins.	27	270	3	300	4	**1**	19	24	5	273	6	284	4	0	**7**	**11**
+30 mins.	24	**279**	2	**305**	9	1	12	22	2	284	5	291	4	**2**	1	7
+45 mins.	16	259	5	280	**13**	0	21	**34**	**6**	229	12	247	**5**	1	5	11
Total Volume	100	1056	15	1171	34	2	74	110	16	1083	37	1136	15	4	19	38
% App. Total	8.5	90.2	1.3		30.9	1.8	67.3		1.4	95.3	3.3		39.5	10.5	50	
PHF	.758	.946	.750	.960	.654	.500	.841	.809	.667	.912	.661	.904	.750	.500	.679	.864

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City of Laguna Niguel
N/S: Crown Valley Parkway
E/W: La Plata Drive
Weather: Clear

File Name : 01_LNL_Crown Valley_La Plata SAT
Site Code : 10521068
Start Date : 2/27/2021
Page No : 1

Groups Printed- Total Volume

	Crown Valley Parkway Southbound				La Plata Drive Westbound				Crown Valley Parkway Northbound				La Plata Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 PM	29	245	7	281	11	0	10	21	7	269	7	283	7	0	3	10	595
12:15 PM	22	265	4	291	7	0	19	26	4	260	10	274	5	0	8	13	604
12:30 PM	21	294	3	318	10	0	18	28	5	283	10	298	12	3	7	22	666
12:45 PM	15	262	5	282	7	1	17	25	3	272	5	280	6	0	6	12	599
Total	87	1066	19	1172	35	1	64	100	19	1084	32	1135	30	3	24	57	2464
01:00 PM	19	262	3	284	8	2	10	20	4	238	4	246	4	2	3	9	559
01:15 PM	21	272	6	299	2	1	19	22	4	260	11	275	6	2	2	10	606
01:30 PM	12	272	5	289	10	1	14	25	6	280	8	294	5	0	5	10	618
01:45 PM	16	281	2	299	11	1	18	30	3	225	3	231	1	0	5	6	566
Total	68	1087	16	1171	31	5	61	97	17	1003	26	1046	16	4	15	35	2349
Grand Total	155	2153	35	2343	66	6	125	197	36	2087	58	2181	46	7	39	92	4813
Apprch %	6.6	91.9	1.5		33.5	3	63.5		1.7	95.7	2.7		50	7.6	42.4		
Total %	3.2	44.7	0.7	48.7	1.4	0.1	2.6	4.1	0.7	43.4	1.2	45.3	1	0.1	0.8	1.9	

	Crown Valley Parkway Southbound				La Plata Drive Westbound				Crown Valley Parkway Northbound				La Plata Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	**29**	245	**7**	281	**11**	0	10	21	**7**	269	7	283	7	0	3	10	595
12:15 PM	22	265	4	291	7	0	**19**	26	4	260	**10**	274	5	0	**8**	13	604
12:30 PM	21	**294**	3	**318**	10	0	18	**28**	5	**283**	10	**298**	**12**	**3**	7	**22**	**666**
12:45 PM	15	262	5	282	7	**1**	17	25	3	272	5	280	6	0	6	12	599
Total Volume	87	1066	19	1172	35	1	64	100	19	1084	32	1135	30	3	24	57	2464
% App. Total	7.4	91	1.6		35	1	64		1.7	95.5	2.8		52.6	5.3	42.1		
PHF	.750	.906	.679	.921	.795	.250	.842	.893	.679	.958	.800	.952	.625	.250	.750	.648	.925

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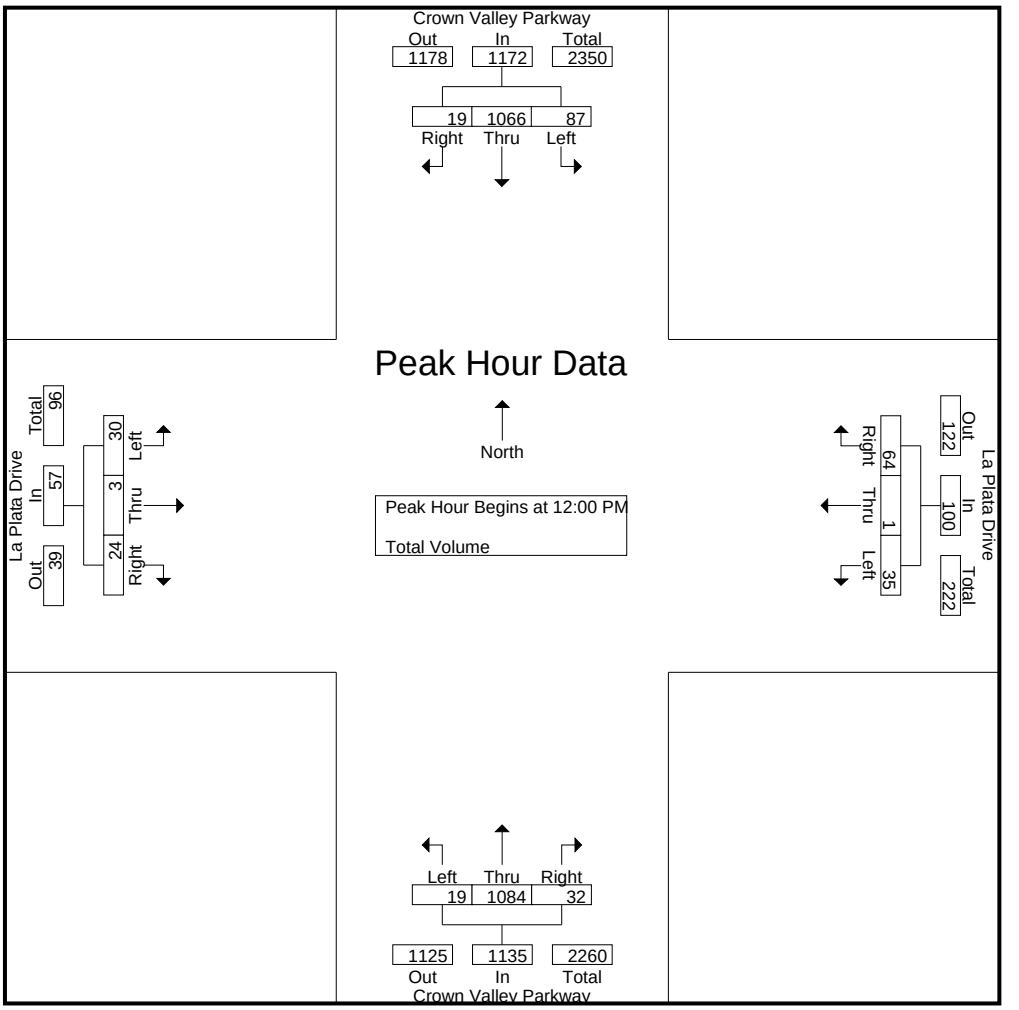
City of Laguna Niguel
N/S: Crown Valley Parkway
E/W: La Plata Drive
Weather: Clear

File Name : 01_LNL_Crown Valley_La Plata SAT
Site Code : 10521068
Start Date : 2/27/2021
Page No : 2



Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:30 PM				12:00 PM				12:00 PM				12:00 PM			
+0 mins.	**21**	**294**	3	**318**	**11**	0	10	21	**7**	269	7	283	7	0	3	10
+15 mins.	15	262	5	282	7	0	**19**	26	4	260	**10**	274	5	0	**8**	13
+30 mins.	19	262	3	284	10	0	18	**28**	5	**283**	10	**298**	**12**	**3**	7	**22**
+45 mins.	21	272	**6**	299	7	**1**	17	25	3	272	5	280	6	0	6	12
Total Volume	76	1090	17	1183	35	1	64	100	19	1084	32	1135	30	3	24	57
% App. Total	6.4	92.1	1.4		35	1	64		1.7	95.5	2.8		52.6	5.3	42.1	
PHF	.905	.927	.708	.930	.795	.250	.842	.893	.679	.958	.800	.952	.625	.250	.750	.648

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City of Laguna Niguel
N/S: Crown Valley Parkway
E/W: La Paz Road
Weather: Clear

File Name : 02_LNL_Crown Valley_La Paz AM
Site Code : 10521068
Start Date : 2/24/2021
Page No : 1

Groups Printed- Total Volume

	Crown Valley Parkway Southbound			Crown Valley Parkway Northbound			La Paz Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	138	7	145	25	120	145	7	23	30	320
07:15 AM	132	19	151	25	167	192	18	24	42	385
07:30 AM	162	38	200	29	193	222	46	38	84	506
07:45 AM	217	30	247	34	225	259	45	35	80	586
Total	649	94	743	113	705	818	116	120	236	1797
08:00 AM	219	36	255	37	205	242	34	61	95	592
08:15 AM	179	34	213	42	245	287	28	35	63	563
08:30 AM	170	44	214	47	211	258	13	53	66	538
08:45 AM	177	15	192	47	153	200	15	43	58	450
Total	745	129	874	173	814	987	90	192	282	2143
Grand Total	1394	223	1617	286	1519	1805	206	312	518	3940
Apprch %	86.2	13.8		15.8	84.2		39.8	60.2		
Total %	35.4	5.7	41	7.3	38.6	45.8	5.2	7.9	13.1	

	Crown Valley Parkway Southbound			Crown Valley Parkway Northbound			La Paz Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	217	30	247	34	225	259	**45**	35	80	586
08:00 AM	**219**	36	**255**	37	205	242	34	**61**	**95**	**592**
08:15 AM	179	34	213	42	**245**	**287**	28	35	63	563
08:30 AM	170	**44**	214	**47**	211	258	13	53	66	538
Total Volume	785	144	929	160	886	1046	120	184	304	2279
% App. Total	84.5	15.5		15.3	84.7		39.5	60.5		
PHF	.896	.818	.911	.851	.904	.911	.667	.754	.800	.962

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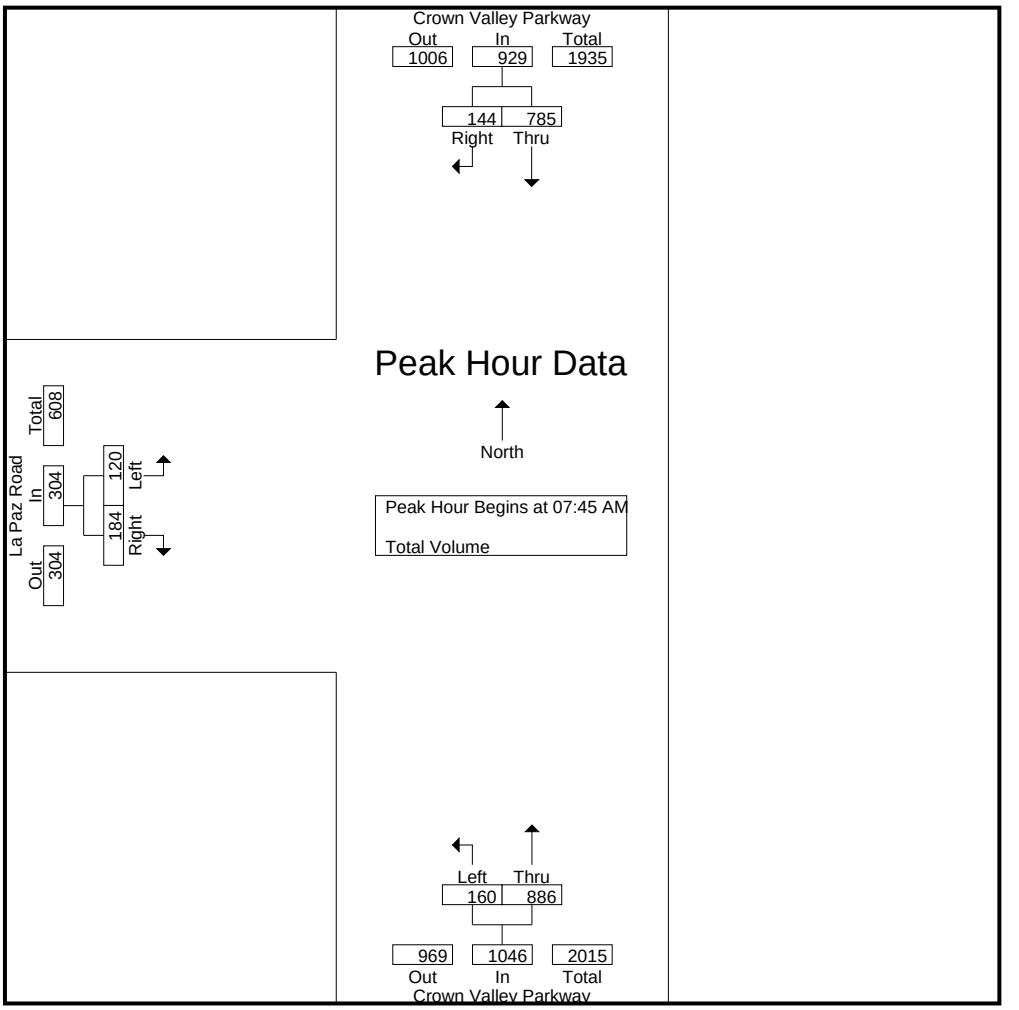
File Name : 02_LNL_Crown Valley_La Paz AM
Site Code : 10521068
Start Date : 2/24/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:30 AM		
+0 mins.	217	30	247	34	225	259	**46**	38	84
+15 mins.	**219**	36	**255**	37	205	242	45	35	80
+30 mins.	179	34	213	42	**245**	**287**	34	**61**	**95**
+45 mins.	170	**44**	214	**47**	211	258	28	35	63
Total Volume	785	144	929	160	886	1046	153	169	322
% App. Total	84.5	15.5		15.3	84.7		47.5	52.5	
PHF	.896	.818	.911	.851	.904	.911	.832	.693	.847

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City of Laguna Niguel
N/S: Crown Valley Parkway
E/W: La Paz Road
Weather: Clear

File Name : 02_LNL_Crown Valley_La Paz PM
Site Code : 10521068
Start Date : 2/24/2021
Page No : 1

Groups Printed- Total Volume

	Crown Valley Parkway Southbound			Crown Valley Parkway Northbound			La Paz Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	218	22	240	51	257	308	19	65	84	632
04:15 PM	217	16	233	50	239	289	21	66	87	609
04:30 PM	188	16	204	43	256	299	16	85	101	604
04:45 PM	205	26	231	50	196	246	17	74	91	568
Total	828	80	908	194	948	1142	73	290	363	2413
05:00 PM	199	17	216	61	225	286	15	76	91	593
05:15 PM	202	17	219	54	213	267	30	89	119	605
05:30 PM	216	15	231	53	211	264	15	72	87	582
05:45 PM	233	12	245	28	210	238	20	63	83	566
Total	850	61	911	196	859	1055	80	300	380	2346
Grand Total	1678	141	1819	390	1807	2197	153	590	743	4759
Apprch %	92.2	7.8		17.8	82.2		20.6	79.4		
Total %	35.3	3	38.2	8.2	38	46.2	3.2	12.4	15.6	

	Crown Valley Parkway Southbound			Crown Valley Parkway Northbound			La Paz Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**218**	22	**240**	**51**	**257**	**308**	19	65	84	**632**
04:15 PM	217	16	233	50	239	289	**21**	66	87	609
04:30 PM	188	16	204	43	256	299	16	**85**	**101**	604
04:45 PM	205	**26**	231	50	196	246	17	74	91	568
Total Volume	828	80	908	194	948	1142	73	290	363	2413
% App. Total	91.2	8.8		17	83		20.1	79.9		
PHF	.950	.769	.946	.951	.922	.927	.869	.853	.899	.955

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Weather: Clear

File Name : 02_LNL_Crown Valley_La Paz PM
Site Code : 10521068
Start Date : 2/24/2021
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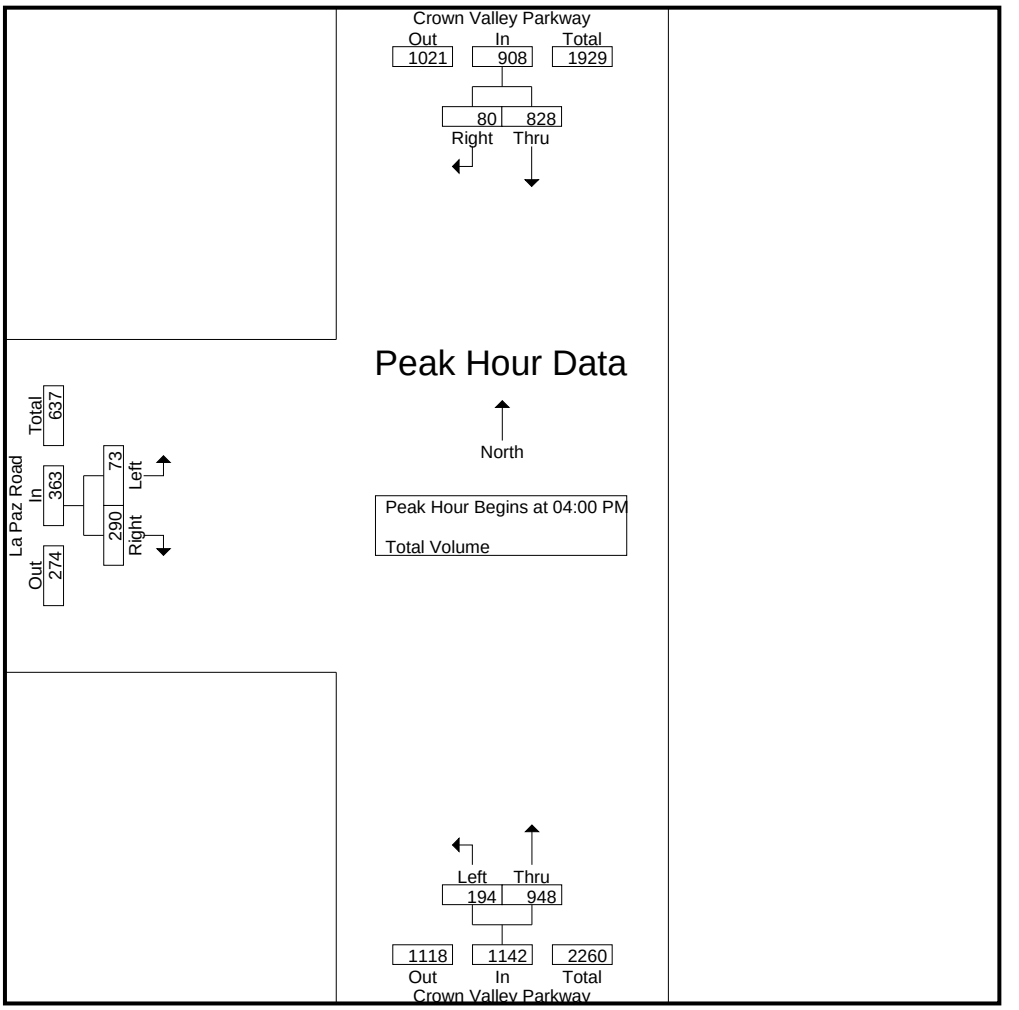

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			04:00 PM			04:30 PM		
+0 mins.	199	**17**	216	**51**	**257**	**308**	16	85	101
+15 mins.	202	17	219	50	239	289	17	74	91
+30 mins.	216	15	231	43	256	299	15	76	91
+45 mins.	**233**	12	**245**	50	196	246	**30**	**89**	**119**
Total Volume	850	61	911	194	948	1142	78	324	402
% App. Total	93.3	6.7		17	83		19.4	80.6	
PHF	.912	.897	.930	.951	.922	.927	.650	.910	.845

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File Name : 02_LNL_Crown Valley_La Paz SAT
Site Code : 10521068
Start Date : 2/27/2021
Page No : 1

Groups Printed- Total Volume

	Crown Valley Parkway Southbound			Crown Valley Parkway Northbound			La Paz Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
12:00 PM	216	23	239	48	237	285	16	76	92	616
12:15 PM	207	18	225	48	225	273	25	75	100	598
12:30 PM	248	24	272	54	257	311	25	86	111	694
12:45 PM	218	23	241	58	234	292	23	65	88	621
Total	889	88	977	208	953	1161	89	302	391	2529
01:00 PM	208	11	219	57	203	260	13	86	99	578
01:15 PM	216	17	233	56	222	278	22	75	97	608
01:30 PM	229	24	253	59	251	310	14	72	86	649
01:45 PM	248	24	272	38	209	247	21	66	87	606
Total	901	76	977	210	885	1095	70	299	369	2441
Grand Total	1790	164	1954	418	1838	2256	159	601	760	4970
Apprch %	91.6	8.4		18.5	81.5		20.9	79.1		
Total %	36	3.3	39.3	8.4	37	45.4	3.2	12.1	15.3	

	Crown Valley Parkway Southbound			Crown Valley Parkway Northbound			La Paz Road Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	216	23	239	48	237	285	16	76	92	616
12:15 PM	207	18	225	48	225	273	**25**	75	100	598
12:30 PM	**248**	**24**	**272**	54	**257**	**311**	25	**86**	**111**	**694**
12:45 PM	218	23	241	**58**	234	292	23	65	88	621
Total Volume	889	88	977	208	953	1161	89	302	391	2529
% App. Total	91	9		17.9	82.1		22.8	77.2		
PHF	.896	.917	.898	.897	.927	.933	.890	.878	.881	.911

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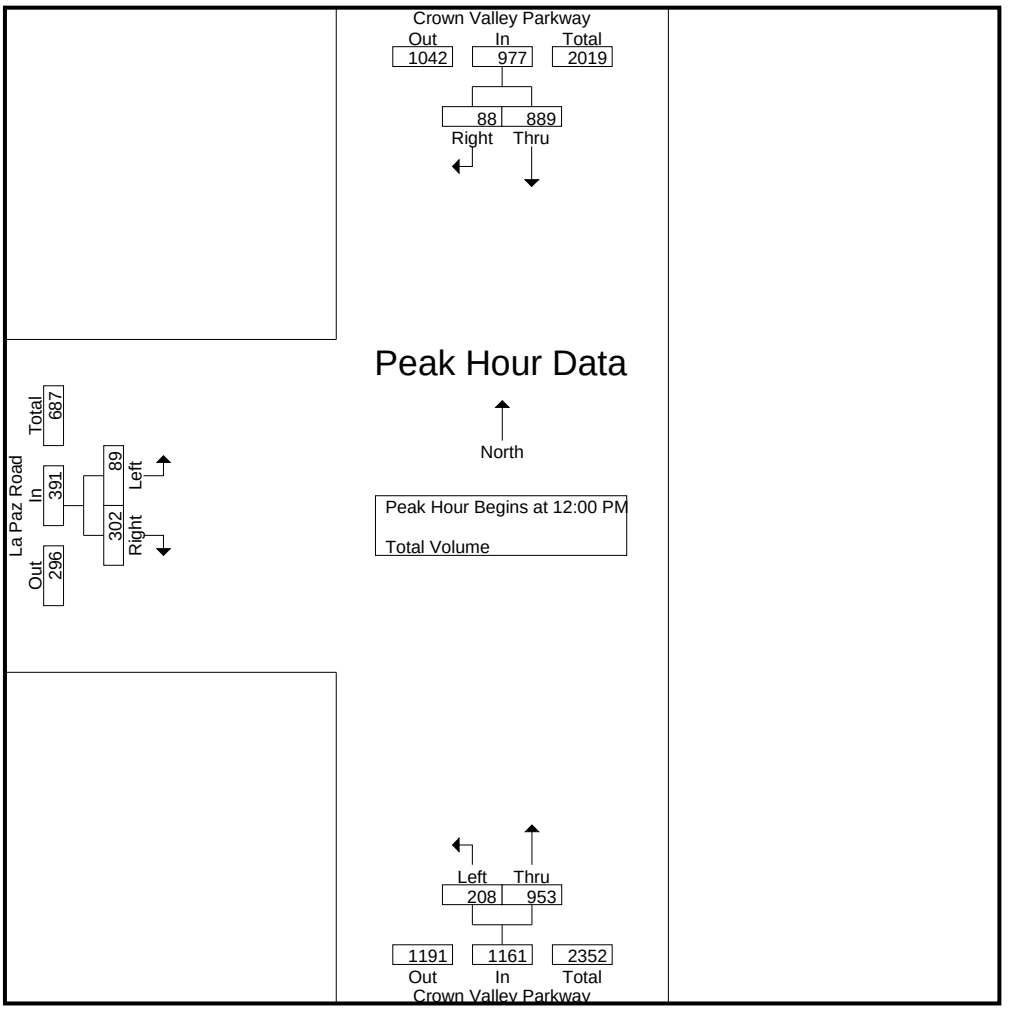

Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM			12:00 PM			12:15 PM		
+0 mins.	216	23	239	48	237	285	**25**	75	100
+15 mins.	207	18	225	48	225	273	25	**86**	**111**
+30 mins.	**248**	**24**	**272**	54	**257**	**311**	23	65	88
+45 mins.	218	23	241	**58**	234	292	13	86	99
Total Volume	889	88	977	208	953	1161	86	312	398
% App. Total	91	9		17.9	82.1		21.6	78.4	
PHF	.896	.917	.898	.897	.927	.933	.860	.907	.896

Appendix B

Intersection LOS Analysis Sheets – Existing Conditions

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
EXISTING CONDITIONS
AM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.518
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 3	0	1	1	0 2	1	0	1	0	0	1 0	1	0	1	0 1
Volume Module:																
Base Vol:	21	1154		41	201	1050		23	33		3	27	58		6	177
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	21	1154		41	201	1050		23	33		3	27	58		6	177
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	21	1154		41	201	1050		23	33		3	27	58		6	177
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	21	1154		41	201	1050		23	33		3	27	58		6	177
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	21	1154		41	201	1050		23	33		3	27	58		6	177
Saturation Flow Module:																
Sat/Lane:	1700	1700		1700	1700	1700		1700	1700		1700	1700	1700		1700	1700
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Lanes:	1.00	3.00		1.00	1.00	2.94		0.06	1.00		0.10	0.90	1.00		1.00	1.00
Final Sat.:	1700	5100		1700	1700	4991		109	1700		170	1530	1700		1700	1700
Capacity Analysis Module:																
Vol/Sat:	0.01	0.23		0.02	0.12	0.21		0.21	0.02		0.02	0.02	0.03		0.00	0.10
Crit Moves:		****				****				****						****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	5085	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1863	5085	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	0	1216	0	0	1135
Future Volume (vph)	0	0	1216	0	0	1135
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	1322	0	0	1234
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1322	0	0	1234

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1216	0	0	1135
Future Vol, veh/h	0	0	1216	0	0	1135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1322	0	0	1234

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	661	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	347	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	347	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	245	0	0	241	0	0
Future Volume (vph)	245	0	0	241	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	266	0	0	262	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	266	0	0	262	0	0

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	245	0	0	241	0	0
Future Vol, veh/h	245	0	0	241	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	266	0	0	262	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	528	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	262	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1298	-	511	773
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1298	-	511	773
Mov Cap-2 Maneuver	-	-	-	-	511	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1298	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
EXISTING CONDITIONS
PM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.429
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	19	1295	44	105	1213	31	17	4	22	33	4	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	1295	44	105	1213	31	17	4	22	33	4	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	1295	44	105	1213	31	17	4	22	33	4	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	1295	44	105	1213	31	17	4	22	33	4	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	1295	44	105	1213	31	17	4	22	33	4	90
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	1.00	0.15	0.85	1.00	1.00	1.00
Final Sat.:	1700	5100	1700	1700	4973	127	1700	262	1438	1700	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.25	0.03	0.06	0.24	0.24	0.01	0.02	0.02	0.02	0.00	0.05
Crit Moves:		****			****			****				****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	5085	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1863	5085	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	0	1358	0	0	1268
Future Volume (vph)	0	0	1358	0	0	1268
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	1476	0	0	1378
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1476	0	0	1378

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1358	0	0	1268
Future Vol, veh/h	0	0	1358	0	0	1268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1476	0	0	1378

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	738	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	309	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	309	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	153	0	0	127	0	0
Future Volume (vph)	153	0	0	127	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	166	0	0	138	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	0	0	138	0	0

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	0	0	127	0	0
Future Vol, veh/h	153	0	0	127	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	0	0	138	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	304	166
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1412	-	688	878
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	889	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	688	878
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1412	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Appendix C

Intersection LOS Analysis Sheets – Existing Plus Project Conditions

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
EXISTING PLUS PROJECT CONDITIONS
AM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.523
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	21	1154	41	201	1050	23	33	3	27	58	6	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	1154	41	201	1050	23	33	3	27	58	6	177
Added Vol:	3	3	0	7	0	0	0	0	0	1	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	1157	41	208	1050	23	33	3	27	59	6	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	1157	41	208	1050	23	33	3	27	59	6	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	1157	41	208	1050	23	33	3	27	59	6	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	1157	41	208	1050	23	33	3	27	59	6	178
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.94	0.06	1.00	0.10	0.90	1.00	1.00	1.00
Final Sat.:	1700	5100	1700	1700	4991	109	1700	170	1530	1700	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.23	0.02	0.12	0.21	0.21	0.02	0.02	0.02	0.03	0.00	0.10
Crit Moves:		****			****			****				****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	5080	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1611	5080	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	6	1216	7	0	1139
Future Volume (vph)	0	6	1216	7	0	1139
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	7	1322	8	0	1238
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	1330	0	0	1238

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	6	1216	7	0	1139
Future Vol, veh/h	0	6	1216	7	0	1139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	1322	8	0	1238

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	665	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	345	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	345	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	345	-
HCM Lane V/C Ratio	-	-	0.019	-
HCM Control Delay (s)	-	-	15.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996					
Flt Protected					0.950	
Satd. Flow (prot)	1855	0	1863	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1855	0	1863	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	245	7	0	241	2	0
Future Volume (vph)	245	7	0	241	2	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	266	8	0	262	2	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	274	0	0	262	2	0

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	245	7	0	241	2	0
Future Vol, veh/h	245	7	0	241	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	266	8	0	262	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	274	0	532	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	262	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1289	-	508	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1289	-	508	769
Mov Cap-2 Maneuver	-	-	-	-	508	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	508	-	-	1289	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	12.1	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
EXISTING PLUS PROJECT CONDITIONS
PM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.435
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	19	1295	44	105	1213	31	17	4	22	33	4	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	1295	44	105	1213	31	17	4	22	33	4	90
Added Vol:	7	6	0	6	0	0	0	0	0	2	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1301	44	111	1213	31	17	4	22	35	4	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	1301	44	111	1213	31	17	4	22	35	4	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	1301	44	111	1213	31	17	4	22	35	4	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	1301	44	111	1213	31	17	4	22	35	4	93
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	1.00	0.15	0.85	1.00	1.00	1.00
Final Sat.:	1700	5100	1700	1700	4973	127	1700	262	1438	1700	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.02	0.26	0.03	0.07	0.24	0.24	0.01	0.02	0.02	0.02	0.00	0.05
Crit Moves:		****			****			****				****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	5080	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1611	5080	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	14	1358	6	0	1277
Future Volume (vph)	0	14	1358	6	0	1277
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	15	1476	7	0	1388
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	1483	0	0	1388

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	1358	6	0	1277
Future Vol, veh/h	0	14	1358	6	0	1277
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	1476	7	0	1388

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	742	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	307	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	307	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	307	-
HCM Lane V/C Ratio	-	-	0.05	-
HCM Control Delay (s)	-	-	17.3	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995					
Flt Protected					0.950	
Satd. Flow (prot)	1853	0	1863	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1853	0	1863	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	153	6	0	127	5	0
Future Volume (vph)	153	6	0	127	5	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	166	7	0	138	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	0	0	138	5	0

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	6	0	127	5	0
Future Vol, veh/h	153	6	0	127	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	7	0	138	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	173	0	308	170
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	138	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1404	-	684	874
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	889	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1404	-	684	874
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	1404	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	10.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Appendix D

Intersection LOS Analysis Sheets – Opening Year (2022)
Without Project Conditions

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
OPENING YEAR (2022) WITHOUT PROJECT CONDITIONS
AM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.523
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Permitted						Permitted					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Y+R:	4.0	4.0	4.0				4.0	4.0	4.0				4.0	4.0	4.0				4.0	4.0	4.0			
Lanes:	1	0	3	0	1		1	0	2	1	0		1	0	0	1	0		1	0	1	0	1	
Volume Module:																								
Base Vol:	21	1154		41			201	1050		23			33		3		27		58		6		177	
Growth Adj:	1.01	1.01		1.01			1.01	1.01		1.01			1.01		1.01		1.01		1.01		1.01		1.01	
Initial Bse:	21	1166		41			203	1061		23			33		3		27		59		6		179	
Added Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
PasserByVol:	0	0		0			0	0		0			0		0		0		0		0		0	
Initial Fut:	21	1166		41			203	1061		23			33		3		27		59		6		179	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	21	1166		41			203	1061		23			33		3		27		59		6		179	
Reduct Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
Reduced Vol:	21	1166		41			203	1061		23			33		3		27		59		6		179	
PCE Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
FinalVolume:	21	1166		41			203	1061		23			33		3		27		59		6		179	
Saturation Flow Module:																								
Sat/Lane:	1700	1700		1700			1700	1700		1700			1700		1700		1700		1700		1700		1700	
Adjustment:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
Lanes:	1.00	3.00		1.00			1.00	2.94		0.06			1.00		0.10		0.90		1.00		1.00		1.00	
Final Sat.:	1700	5100		1700			1700	4991		109			1700		170		1530		1700		1700		1700	
Capacity Analysis Module:																								
Vol/Sat:	0.01	0.23		0.02			0.12	0.21		0.21			0.02		0.02		0.02		0.03		0.00		0.11	
Crit Moves:		****						****						****										****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	5085	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1863	5085	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	0	1228	0	0	1146
Future Volume (vph)	0	0	1228	0	0	1146
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	1335	0	0	1246
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1335	0	0	1246

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1228	0	0	1146
Future Vol, veh/h	0	0	1228	0	0	1146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1335	0	0	1246

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	668	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	344	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	344	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	247	0	0	243	0	0
Future Volume (vph)	247	0	0	243	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	268	0	0	264	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	268	0	0	264	0	0

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	247	0	0	243	0	0
Future Vol, veh/h	247	0	0	243	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	268	0	0	264	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	268	0	532	268
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1296	-	508	771
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1296	-	508	771
Mov Cap-2 Maneuver	-	-	-	-	508	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	780	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1296	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
OPENING YEAR (2022) WITHOUT PROJECT CONDITIONS
PM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.432
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 3	0	1	1	0 2	1	0	1	0 0	1	0	1	0 1	0	1
Volume Module:																
Base Vol:	19	1295	44		105	1213	31		17	4	22		33	4	90	
Growth Adj:	1.01	1.01	1.01		1.01	1.01	1.01		1.01	1.01	1.01		1.01	1.01	1.01	
Initial Bse:	19	1308	44		106	1225	31		17	4	22		33	4	91	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	19	1308	44		106	1225	31		17	4	22		33	4	91	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	19	1308	44		106	1225	31		17	4	22		33	4	91	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	19	1308	44		106	1225	31		17	4	22		33	4	91	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	19	1308	44		106	1225	31		17	4	22		33	4	91	
Saturation Flow Module:																
Sat/Lane:	1700	1700	1700		1700	1700	1700		1700	1700	1700		1700	1700	1700	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00		1.00	2.93	0.07		1.00	0.15	0.85		1.00	1.00	1.00	
Final Sat.:	1700	5100	1700		1700	4973	127		1700	262	1438		1700	1700	1700	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.26	0.03		0.06	0.25	0.25		0.01	0.02	0.02		0.02	0.00	0.05	
Crit Moves:		****				****				****					****	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	5085	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1863	5085	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	0	1372	0	0	1281
Future Volume (vph)	0	0	1372	0	0	1281
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	1491	0	0	1392
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1491	0	0	1392

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1372	0	0	1281
Future Vol, veh/h	0	0	1372	0	0	1281
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1491	0	0	1392

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	746	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	305	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	305	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	155	0	0	128	0	0
Future Volume (vph)	155	0	0	128	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	168	0	0	139	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	0	0	139	0	0

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	0	0	128	0	0
Future Vol, veh/h	155	0	0	128	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	0	0	139	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	168	0	307	168
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1410	-	685	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1410	-	685	876
Mov Cap-2 Maneuver	-	-	-	-	685	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1410	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Appendix E

Intersection LOS Analysis Sheets – Opening Year (2022)
With Project Conditions

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
OPENING YEAR (2022) WITH PROJECT CONDITIONS
AM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.528
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	21	1154	41	201	1050	23	33	3	27	58	6	177
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	21	1166	41	203	1061	23	33	3	27	59	6	179
Added Vol:	3	3	0	7	0	0	0	0	0	1	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	24	1169	41	210	1061	23	33	3	27	60	6	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	1169	41	210	1061	23	33	3	27	60	6	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	1169	41	210	1061	23	33	3	27	60	6	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	1169	41	210	1061	23	33	3	27	60	6	180
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.94	0.06	1.00	0.10	0.90	1.00	1.00	1.00
Final Sat.:	1700	5100	1700	1700	4991	109	1700	170	1530	1700	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.01	0.23	0.02	0.12	0.21	0.21	0.02	0.02	0.02	0.04	0.00	0.11
Crit Moves:		****			****			****				****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	5080	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1611	5080	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	6	1228	7	0	1150
Future Volume (vph)	0	6	1228	7	0	1150
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	7	1335	8	0	1250
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	1343	0	0	1250

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	6	1228	7	0	1150
Future Vol, veh/h	0	6	1228	7	0	1150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	1335	8	0	1250

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	672	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	342	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	342	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	342	-
HCM Lane V/C Ratio	-	-	0.019	-
HCM Control Delay (s)	-	-	15.7	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996					
Flt Protected					0.950	
Satd. Flow (prot)	1855	0	1863	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1855	0	1863	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	247	7	0	243	2	0
Future Volume (vph)	247	7	0	243	2	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	268	8	0	264	2	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	276	0	0	264	2	0

Intersection Summary

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	247	7	0	243	2	0
Future Vol, veh/h	247	7	0	243	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	268	8	0	264	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	536	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1287	-	505	767
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	505	767
Mov Cap-2 Maneuver	-	-	-	-	505	-
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	780	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	505	-	-	1287	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	12.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

GRACE CHURCH TRAFFIC STUDY (JN: 2936-2020-01)
OPENING YEAR (2022) WITH PROJECT CONDITIONS
PM PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 CROWN VALLEY PARKWAY (NS) / LA PLATA DRIVE (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.439
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	19	1295	44	105	1213	31	17	4	22	33	4	90
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	19	1308	44	106	1225	31	17	4	22	33	4	91
Added Vol:	7	6	0	6	0	0	0	0	0	2	0	3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1314	44	112	1225	31	17	4	22	35	4	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	1314	44	112	1225	31	17	4	22	35	4	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	1314	44	112	1225	31	17	4	22	35	4	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	1314	44	112	1225	31	17	4	22	35	4	94
Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	1.00	0.15	0.85	1.00	1.00	1.00
Final Sat.:	1700	5100	1700	1700	4973	127	1700	262	1438	1700	1700	1700
Capacity Analysis Module:												
Vol/Sat:	0.02	0.26	0.03	0.07	0.25	0.25	0.01	0.02	0.02	0.02	0.00	0.06
Crit Moves:		****			****			****				****

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor						
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1611	5080	0	0	5085
Flt Permitted						
Satd. Flow (perm)	0	1611	5080	0	0	5085
Link Speed (mph)	30		30			30
Link Distance (ft)	243		411			300
Travel Time (s)	5.5		9.3			6.8

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	0	14	1372	6	0	1290
Future Volume (vph)	0	14	1372	6	0	1290
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	15	1491	7	0	1402
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	1498	0	0	1402

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	14	1372	6	0	1290
Future Vol, veh/h	0	14	1372	6	0	1290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	1491	7	0	1402

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	749	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	304	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	304	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	304	-
HCM Lane V/C Ratio	-	-	0.05	-
HCM Control Delay (s)	-	-	17.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995					
Flt Protected					0.950	
Satd. Flow (prot)	1853	0	1863	1863	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	1853	0	1863	1863	1770	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	298			388	187	
Travel Time (s)	6.8			8.8	4.3	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	155	6	0	128	5	0
Future Volume (vph)	155	6	0	128	5	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	168	7	0	139	5	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	0	0	139	5	0

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	155	6	0	128	5	0
Future Vol, veh/h	155	6	0	128	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	7	0	139	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	175	0	311	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1401	-	681	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1401	-	681	872
Mov Cap-2 Maneuver	-	-	-	-	681	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	681	-	-	1401	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	10.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Appendix F

Project CEQA Transportation Checklist

CEQA Guidelines – Appendix G Environmental Checklist

XVII. TRANSPORTATION. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

DISCUSSION:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***No Impact***

SIGNIFICANCE ANALYSIS:

As stated in Section 1.1 this Study has been conducted pursuant to the City of Laguna Niguel Transportation Assessment Guidelines (November 2020) and the California Environmental Quality Act (CEQA) requirements. As such this traffic analysis evaluates the propose project from a traffic and circulation standpoint in accordance with County of Orange Congestion Management Program (CMP) and City of Laguna Niguel Transportation Assessment Guidelines. As stated in Section 2.4 CEQA Evaluation & Vehicle Miles Traveled (VMT) Analysis, "Effective July 1st, 2020, the longstanding metric of roadway level of service (LOS), which is typically measured in terms of vehicle delay, roadway capacity and congestion, will no longer be considered a significant impact under the California Environmental Quality Act (CEQA). Pursuant to CEQA Guidelines, Section 15064.3, VMT is now the most appropriate measure of transportation impacts. The City of Laguna Niguel has prepared the City of Laguna Niguel Transportation Assessment Guidelines (Nov 2020), detailing the appropriate VMT methodologies, thresholds of significance, and feasible mitigation

measures. This analysis follows the practices and recommendations in the City of Laguna Niguel Transportation Assessment Guidelines (Nov 2020).

Consequently, there will not be any conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? *No Impact.*

SIGNIFICANCE ANALYSIS:

The CEQA Guidelines section 15064.3 subdivision (b) states the following:

"SECTION 15064.3. DETERMINING THE SIGNIFICANCE OF TRANSPORTATION IMPACTS

(a) Purpose.

This section describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact.

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in

absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *No Impact.*

d) Result in inadequate emergency access? *No Impact. E existing*

SIGNIFICANCE ANALYSIS:

c) & d) As discussed in Section 3.1 Existing Traffic Controls and Intersection Geometrics, RK conducted a field review of the study area in February 2021 to determine the existing traffic controls and intersection geometrics for roadway facilities near the site. Exhibits 3-1 and 3.2 identifies the existing roadway conditions within the study. The number of through traffic lanes for existing roadways and the existing intersection controls are identified. The type of traffic control and number of lanes at an intersection are key inputs for the calculation of level of service. The existing Intersection Geometry and Traffic Controls Study depicts the existing intersection of Crown Valley Parkway and La Plata Drive.

The proposed project is generally not expected to change or modify the existing circulation system and hence is forecast to not result in any impacts for this CEQA analysis item.

A new access is proposed on Crown Valley Parkway which has been evaluated for level of service as well as sight distance as required by the City and both the level of service and sight distance at this new access is found to be satisfactory per the agency-established guidelines and requirements.

Emergency access to the project is from either existing roadway. This TIA Study concluded that based on the aforementioned screening criteria, the proposed project would be expected to cause a less than significant CEQA transportation impact as the City's screening thresholds for Small Projects is met. The screening thresholds for Small Projects is as follows:

Small Projects

Projects that would generate less than 500 vehicle trips per day based on the latest Institute of Transportation Engineers (ITE) Trip Generation Manual are presumed to be less than significant. As with other types of transportation analysis, the trip generation of the current uses, which have been determined to constitute the CEQA baseline conditions, could be reduced from the proposed project so only net trips are assessed. A project demonstrating fewer and/or shorter trips leading to lower VMT than existing conditions may be presumed to be less than significant. As

previously shown in Table 4-2, even without taking credit for the existing use that will be displaced, the proposed project is forecast to generate approximately 296 daily trips which is much less than the 500 trip threshold for small projects. Hence, the proposed project is screened out and is deemed to not result in any significant VMT impacts per the City's adopted thresholds.