Appendix H

VMT Assessment and Traffic Impact Study

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WHAT TRANSPORTATION CAN BE.

MEMORANDUM

Date:	November 30, 2020	**TG:**	1.20268.00
To:	Eunice Lee – City of Anaheim		
From:	Stefanie Herzstein, PE, PTOE – Transpo Group		
cc:	Chad Brown – Melia Homes		
Subject:	2323 W Broadway Anaheim VMT Assessment		

The City of Anaheim has adopted Vehicle Miles Travelled (VMT) thresholds as required by the California Environmental Quality Act (CEQA) and the passage of California State Senate Bill (SB) 743. This memorandum provides the VMT assessment for the proposed project located at 2323 W Broadway in Anaheim, California. This assessment was prepared based on the *City of Anaheim Traffic Impact Analysis Guidelines for California Environmental Quality Act Analysis*, June 2020 (herein referenced as June 2020 Guidelines).

Project Description

The project is located on the north side of W Broadway between S Gilbert Street and Brookhurst Street. The proposal includes a residential development with up to 112 townhomes. Access to the site will be provided via W Broadway. The existing private high school with approximately 120 students would be removed as part of the proposed project.

VMT Screening

The City's June 2020 Guidelines describe three project screening criteria (1) transit priority areas screening, (2) low VMT-generating areas screening and (3) project type screening. The June 2020 Guidelines also state that a project only need to fulfill one of the screening types to qualify for screening.

Attachment A provides a map from the June 2020 Guidelines showing the low VMT-Generating areas in Anaheim. Based on a review of the VMT screening criteria and the map in Attachment A, the proposed project is located in a low VMT area.

TAZ Land Use Assessment

Since the proposed project is located in a low VMT-generating area, a reviewed was conducted to confirm that the project land use is consistent with the existing land use within the Orange County Transportation Analysis Model (OCTAM). The proposed project is located in the OCTAM traffic analysis zone (TAZ) 333. Table 1 summarizes the TAZ 333 existing land use.

Table 1. TAZ 333 Existing Land Use Summary[1]

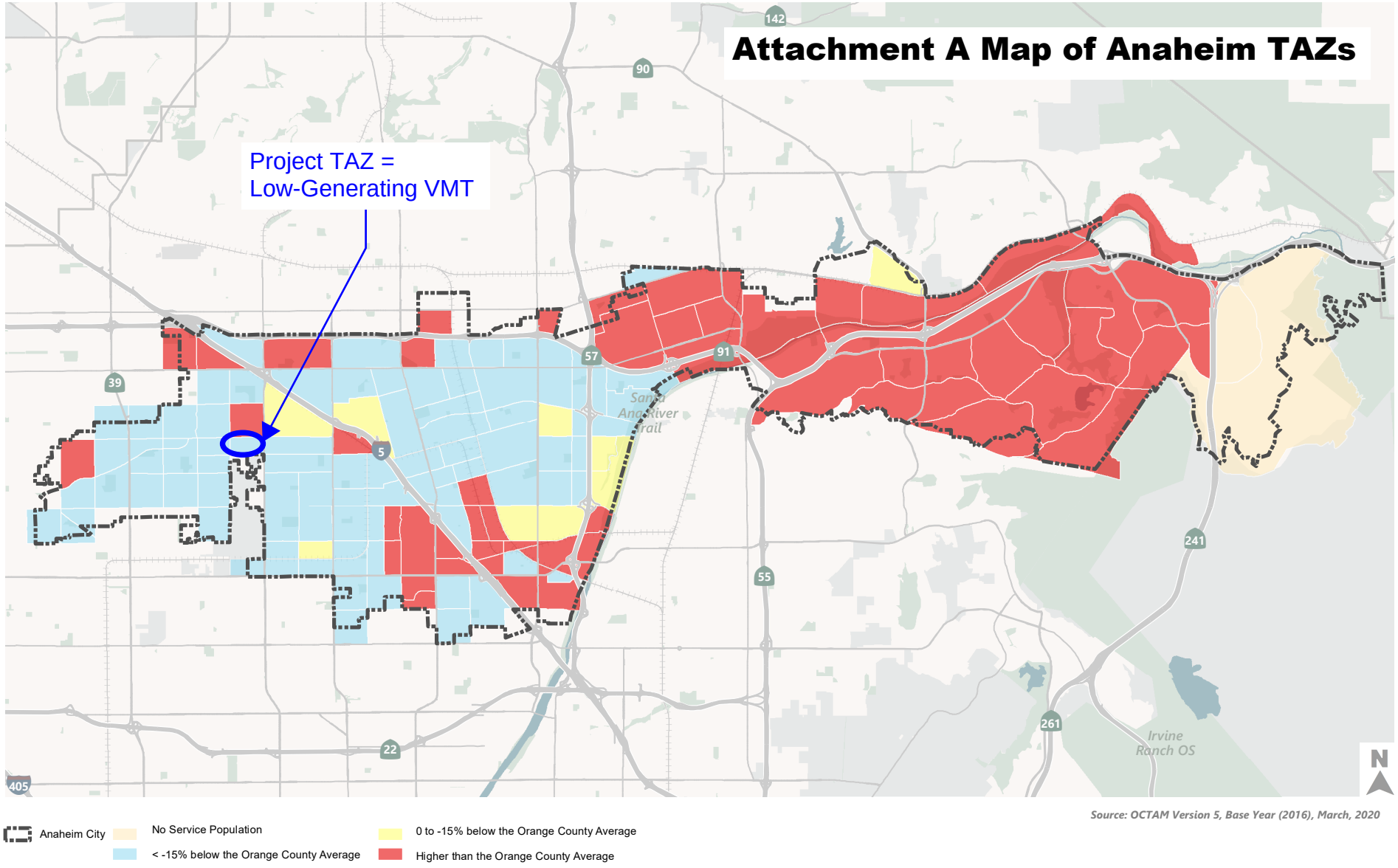
Land Use	Quantity
Households	1,223
Retail Employment	111
Service Employment	189
School Enrollment	163

1. Existing land use based on the Orange County Transportation Analysis Model (OCTAM) 5.0. The existing land use represents 2016 conditions.

As shown on Table 1, the existing TAZ land use is mainly residential use with 1,223 households. There are some supporting retail and service employment uses as well as the school that would be removed with the proposed project. The proposed project is residential including up to 112 townhomes. Since the existing TAZ is mostly residential, the proposed project use is consistent with the existing TAZ land use. It is noted that a review of the OCTAM 2045 forecasted land use shows growth in households within TAZ 333, which is consistent with the proposed project.

Conclusion

The proposed project meets the Anaheim VMT screening criteria for a low VMT-generating area. In addition, the proposed land use is consistent with the OCTAM existing land use for the project TAZ. No further VMT analysis is required and no mitigation is required.



Attachment B

Daily VMT per Service Population in Anaheim TAZs as Compared to the Orange County Average (2016)

Final Traffic Impact Study

2323 W BROADWAY

Prepared for:
Melia Homes

March 2021

Prepared by:

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WHAT TRANSPORTATION CAN BE.

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Executive Summary

This section provides an executive summary of the Traffic Impact Study through a set of frequently asked questions (FAQs).

Where is the project located and what would be developed?

The proposed residential project is located at 2323 W Broadway on the north side of W Broadway between S Gilbert Street and Brookhurst Street in Anaheim. The project would construct 112 townhomes and remove the existing private high school.

What existing public streets will serve the project and where is access proposed?

W Broadway and Brookhurst Street provide primary access to the project site. Regional access to the project is provided from Interstate 5 (I-5). The project would access I-5 via the interchange at W Broadway.

Is the site currently served by public transit?

The nearest transit stop is located at the Brookhurst Street/W Broadway intersection, approximately a ¼ mile (or 5- to 6-minute walk) east of the site. The stop serves OCTA Route 35, which runs from Fullerton to Costa Mesa along Brookhurst Street. The route operates Monday-Saturday, with peak hour headways of about 45 minutes.

How many daily vehicular trips would the project generate and when would peak traffic volumes occur?

The proposed project is anticipated to generate a total of 610 weekday daily vehicles trips with 38 trips occurring during the weekday AM peak hour and 49 trips during the weekday PM peak hour. Compared to the existing private school use, the proposed project will generate 366 more weekday daily vehicle trips with 24 less trips during the weekday AM peak hour and 32 more trips during the weekday PM peak hour.

What traffic impacts are anticipated, if any?

No significant traffic impacts are anticipated. The existing transportation system would accommodate the proposed project.

What measures are proposed to reduce or control traffic impacts?

The project would not result in any significant off-site traffic impacts. The existing transportation system would accommodate the proposed project.

Chapter 1. Introduction

The purpose of this traffic impact study (TIS) is to identify potential traffic-related impacts associated with the proposed residential development located at 2323 W Broadway in Anaheim. As necessary, mitigation measures are identified that would offset or reduce significant impacts. The TIS scope is based on coordination with City staff as documented in the scoping agreement dated December 14, 2020 and emails shown in Appendix A.

Project Description

The project is located on the north side of W Broadway between S Gilbert Street and Brookhurst Street. The site currently has a General Plan designation of School and requires a General Plan Amendment for a Low-Medium Residential designation. The proposed project includes up to 112 townhomes with access to the site via one driveway along W Broadway. The existing school driveway would be removed with construction of the development and the new driveway to the project would be aligned with S Rosebay Street. The proposal includes a total of 350 parking spaces with 224 garage spaces and 124 guest/open parking stalls. Figure 1 illustrates the project site plan.

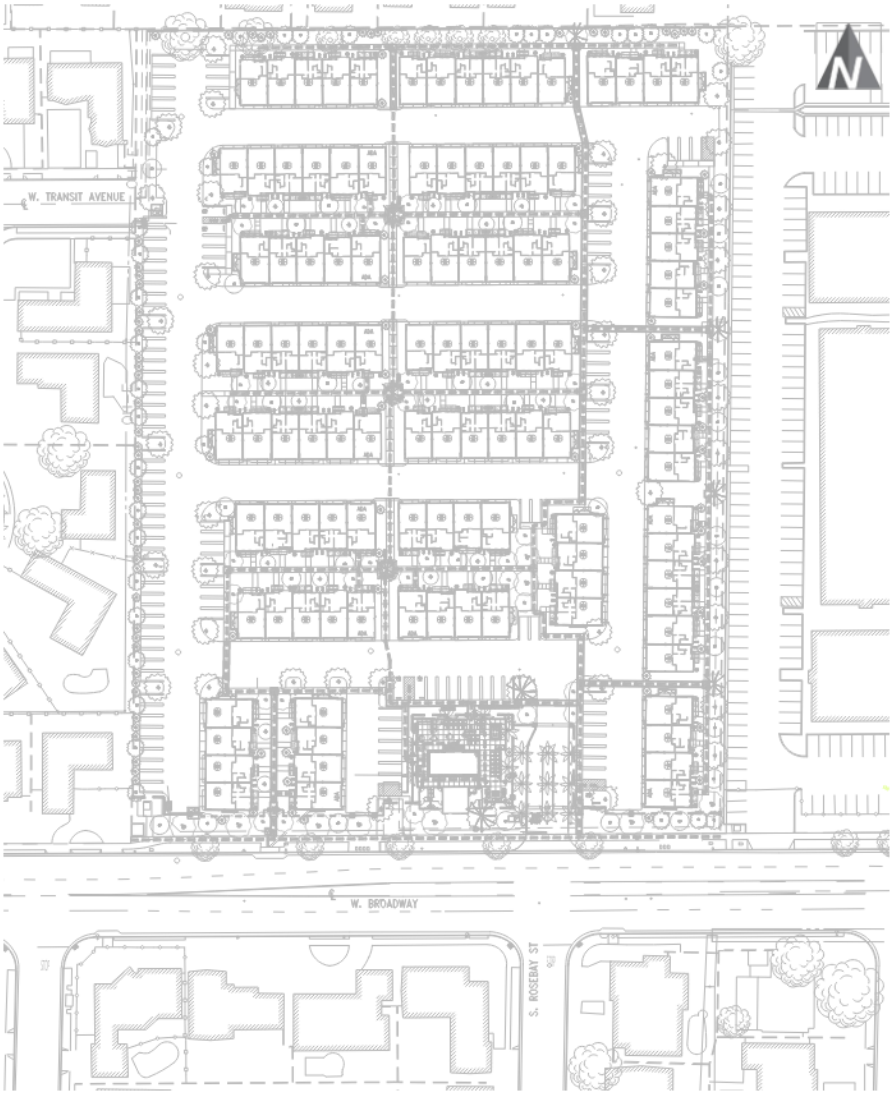

Figure 1: Site Plan

The existing Cornelia Connelly School, a private high school, would be removed as part of the project development.

It is anticipated that the proposed project would be constructed and occupied by 2024.

Study Area and Scope

This analysis focuses on the weekday AM (7:00 to 9:00 AM) peak period and the PM (4:00 to 6:00 PM) peak period. These periods represent the highest cumulative total traffic for the adjacent street system. Figure 2 illustrates the project site location and the project study area.

Based on coordination with City staff, the study area includes:

Study Intersections

1. Brookhurst Street/W Broadway
2. Project Driveway/W Broadway

Study Roadway Segments

- W Broadway between site driveway and Brookhurst Street
- W Broadway between site driveway and S Gilbert Street

The project driveway along W Broadway is analyzed under with-project conditions only.

Figure 2: Site Vicinity and Study Area

The study intersections and roadway segments were analyzed for the following scenarios:

- Existing Conditions
- Existing plus Project
- Existing plus Cumulative Projects
- Existing plus Cumulative Projects plus Project
- Opening Year plus Cumulative Projects
- Opening Year plus Cumulative Projects plus Project
- General Plan Buildout
- General Plan Buildout plus Project

The TIS includes a description of existing conditions in the site vicinity, including roadway network, existing, Opening Year and General Plan Buildout weekday AM and PM peak hour traffic volumes, trip generation, trip distribution and assignment, and traffic operations.

Methodology

The analysis method to evaluate intersections and roadway segments is described below.

Intersections

Signalized intersections. The operational characteristics of an intersection are determined by calculating the intersection's level of service (LOS). The intersection as a whole and its individual turning movements can be described alphabetically with a range of levels of service (A through F), with LOS A indicating free-flow traffic and LOS F indicating extreme congestion and long vehicle delays. At signalized intersections, LOS was calculated using the *Intersection Capacity Utilization* methodology. LOS at signalized intersections is measured based on the sum of the volume to capacity (v/c) ratio of the critical movements. Table 1 shows the relationship between v/c ratio and LOS for signalized intersections.

Table 1. Level of Service Criteria for Signalized Intersections using ICU Methodology

Level of Service	V/C Ratio	General Description (Signalized Intersections)
A	≤0.60	Free Flow
B	0.61 to ≤ 0.70	Stable Flow (slight delays)
C	0.71 to ≤ 0.80	Stable flow (acceptable delays)
D	0.81 to ≤ 0.90	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	0.91 to ≤ 1.00	Unstable flow (intolerable delay)
F	>1.00	Forced flow (jammed)

Unsignalized intersections LOS at unsignalized intersections is classified by two intersection types: all-way stop-controlled and two-way stop-controlled. LOS for unsignalized intersections was calculated using the *Highway Capacity Manual, 6th Edition* methodology. All-way, stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all of the movements, much like that of a signalized intersection. Two-way, stop-controlled intersection

LOS is defined in terms of the average vehicle delay of an individual movement(s). This is because the performance of a two-way, stop-controlled intersection is more closely reflected in terms of its individual movements, rather than its performance overall. For this reason, LOS for a two-way, stop-controlled intersection is defined in terms of its individual movements. With this in mind, total average vehicle delay (i.e., average delay of all movements) for a two-way, stop-controlled intersection should be viewed with discretion. Table 2 shows the relationship between vehicle delay and LOS for unsignalized intersections (both all-way and two-way, stop-controlled).

Table 2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Two-Way and All-Way Stop Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: *Highway Capacity Manual*, Transportation Research Board, 2016

Future Traffic Forecasts Opening Year (2024) without-project traffic volumes were determined by adding a growth rate of .55% per year to the existing traffic volumes. The growth rate was determined based on historic counts and in coordination with city staff. In addition to the growth rate and in coordination with City of Anaheim staff, three cumulative (approved but not yet constructed) projects that would affect the project study area we identified.

Roadway Segments

The analysis of roadway segments is based on the average daily traffic volumes and daily roadway capacity. Roadway operations are determined by calculating the volume-to-capacity (V/C) ratio.

Significance Criteria

The City of Anaheim, in the General Plan Circulation Element, has adopted a performance standard of LOS D (peak hour ICU less than or equal to 0.90) for all signalized intersections with the exception that LOS E is acceptable at designated Congestion Management Program (CMP) intersections. There are no designated CMP intersections within the project study area, therefore LOS D is applied as the maximum acceptable LOS at all study area intersections. A significant impact would occur if the project increases the v/c ratio at a study area intersection as shown below.

With Project LOS	Project-Related Increase in V/C Ratio
LOS C	equal to or greater than 0.050
LOS D	equal to or greater than 0.030
LOS E or F	equal to or greater than 0.010

Chapter 2. Without-Project Conditions

This section describes Existing and Opening Year (2024) without-project conditions within the study area. Characteristics are provided for the roadway network, non-motorized facilities, transit, peak hour traffic volumes and traffic operations.

Transportation Context

Existing traffic control and geometrics at study intersections are illustrated on Figure 3. The primary project site access driveway would be provided via W Broadway at S Rosebay Street; currently this intersection is only three legs.

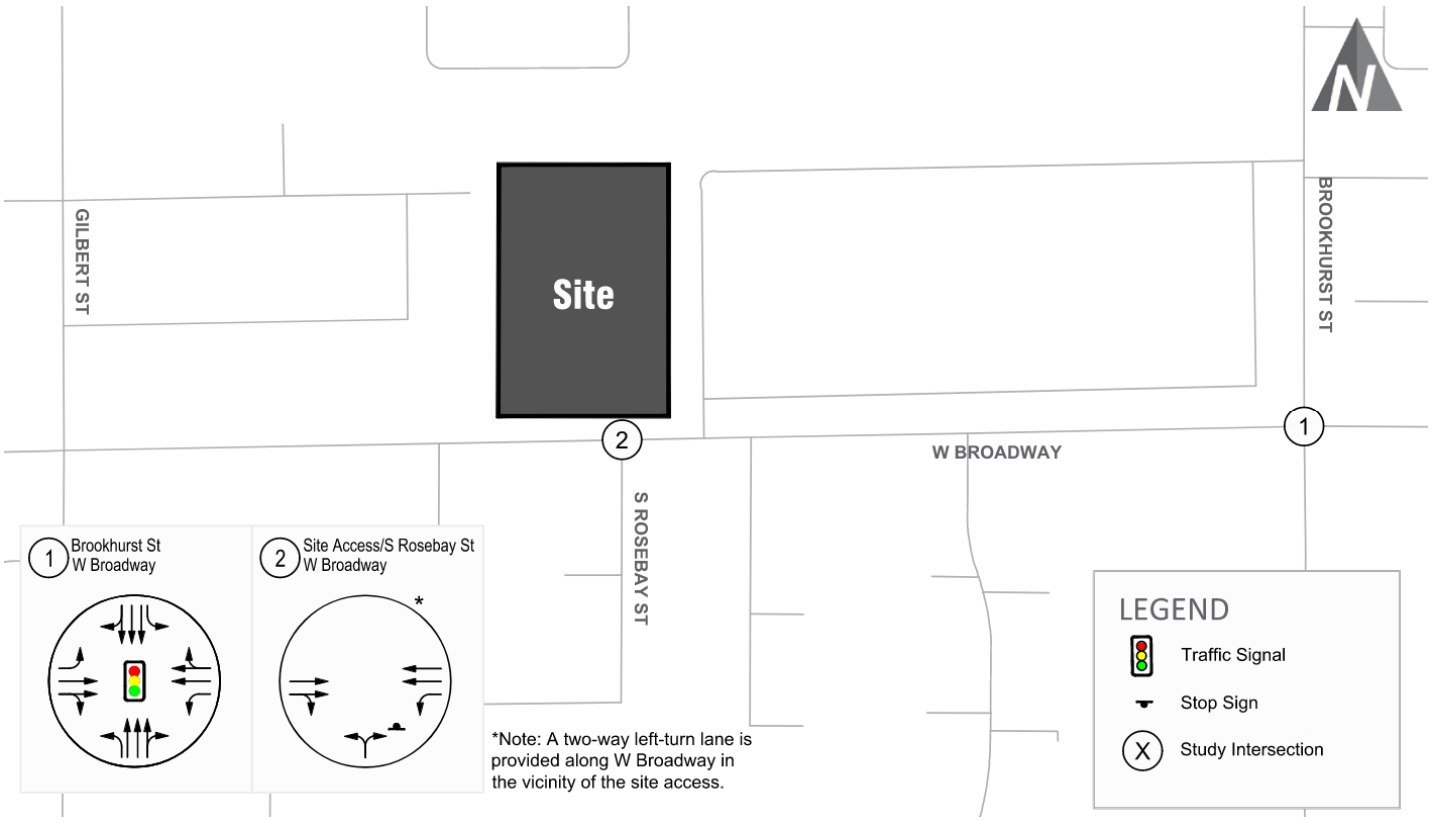

Figure 3: Existing Traffic Control and Geometrics

Characteristics of the existing street system in the proposed project vicinity are shown in Table 3.

Table 3. Study Area Existing Street System Summary

Roadway	Street Classification	Posted Speed Limit	Number of Travel Lanes	Parking	Sidewalks	Bicycle Lanes
W Broadway	Secondary Arterial	40 mph	4-5	Intermittent	Yes	No
Brookhurst Street	Major Arterial	40 mph	7	No	Yes	Yes

As shown in Table 3, bicycle lanes are provided on Brookhurst Street. There are sidewalks on both sides of the streets in the study area and signalized crossings are provided on all legs of the Brookhurst Street/W Broadway intersection. The project would not alter or remove any bicycle or pedestrian facility in the vicinity of the project. According to the 2019 American Communities

Survey (ACS), in Orange County, less than 3 percent of commute trips are made by walking or bicycle.

The nearest transit stop is located at the Brookhurst Street/W Broadway intersection, approximately a ¼ mile or 5 to 6-minute walk east of the site. The stop serves OCTA Route 35, which runs from Fullerton to Costa Mesa along Brookhurst Street. The route operates Monday-Saturday, with peak hour headways of about 45 minutes. The 2019 American Communities Survey in Orange County shows that approximately 2 percent for people take transit to work.

Traffic Volumes

Existing and Existing Plus Cumulative Projects Traffic Volumes

Weekday AM and PM peak hour turning movement counts at the study intersections were conducted in December 2020. Due to the Covid-19 pandemic impacts on travel, the counts were adjusted to represent typical non-COVID traffic conditions based on factors provided by City staff. The existing condition reflects those land uses that were built and occupied at the time of the traffic counts. Intersection turning movement counts are provided in Appendix B. Existing weekday AM and PM peak hour traffic volumes are summarized on
Figure 4 and were used to evaluate existing traffic conditions.

City of Anaheim staff provided information on cumulative development projects in the project study area to form the basis of the Existing plus Cumulative Projects condition. Three projects were identified:

- **227 N Magnolia Ave** – Construction of 59 apartment units on a site containing a church, private school, and daycare. The school will be demolished, the church reduced, and the daycare expanded.
- **2720 W Lincoln Ave** – Development of an R.V. storage facility for 77 vehicles.
- **9812 W Orange Avenue** – Development of 8 new 2-story single family homes.

The Existing plus Cumulative Projects traffic volumes are shown on
Figure 4.

Opening Year (2024) Plus Cumulative Projects Traffic Volumes

Project Opening Year traffic volumes were forecast by applying a growth rate of 0.55 percent per year to the existing traffic volumes. In addition, the cumulative projects identified above were added to the Opening Year background traffic volumes. The Opening Year (2024) traffic volumes are shown on
Figure 4.

General Plan Buildout Traffic Volumes

General Plan Buildout traffic volumes were provided by the City of Anaheim. The without-project traffic volumes assume the existing General Plan designation for the site (School). The project proposes a General Plan amendment to change the designation of the site to Low-Medium Residential. The General Plan Buildout traffic volumes are shown on
Figure 4.

Intersection Operations

A LOS analysis was prepared for the Existing Conditions, Existing plus Cumulative Projects, Opening Year (2024) plus Cumulative Projects, and General Plan Buildout without-project

conditions and is shown in Table 4. The adopted LOS threshold for the study intersection is LOS D. Detailed LOS worksheets are included in Appendix C.

Table 4. Without-Project Weekday Peak Hour LOS Summary

	AM Peak Hour		PM Peak Hour	
Intersection/Scenario	**LOS[1]**	**V/C Ratio[2]**	**LOS**	**V/C Ratio**
1. Brookhurst Street/W Broadway				
Existing	A	0.47	A	0.60
Existing plus Cumulative Projects	A	0.47	A	0.60
Opening Year plus Cumulative Projects	A	0.48	B	0.61
General Plan Buildout[3]	A	0.57	B	0.64

1. Level of Service (A – F) based on Intersection Capacity Utilization (ICU)
2. V/C = Volume to Capacity Ratio

As shown in Table 4, the Brookhurst Street/W Broadway intersection is currently operating at LOS A during the weekday AM and PM peak hours under Existing conditions. With the addition of the cumulative projects and other growth in the study area, the study intersection would operate at LOS B during the weekday PM peak hour. The Brookhurst Street/W Broadway intersection meets the City's LOS standard for the analysis scenarios during the weekday peak hours.

Roadway Segment Operations Analysis

An analysis roadway capacity based on average daily traffic volumes was conducted for W Broadway east and west of Rosebay Street (the location of the project future site). Table 5 provides a summary of the roadway analysis.

Table 5. W Broadway Roadway Segment Analysis

		East of Rosebay Street			West of Rosebay Street		
Scenario	**Capacity[1]**	**LOS**	**ADT[2]**	**V/C Ratio**	**LOS**	**ADT**	**V/C Ratio**
Existing Conditions	25,000	A	14,200	0.57	A	13,700	0.55
Existing plus Cumulative Projects	25,000	A	14,293	0.57	A	13,793	0.55
Opening Year plus Cumulative Projects	25,000	A	14,607	0.58	A	14,096	0.56
General Plan Build	25,000	B	15,800	0.63	B	15,200	0.61

1. W Broadway average daily traffic (ADT) roadway capacity based on the *Guidance for Administration of the Orange County Master Plan of Arterial Highways* Table A-4-1 for an undivided 4-lane highway.
2. ADT = average daily traffic volume

As shown in Table 5, W Broadway is currently below the roadway capacity and this condition would continue with cumulative projects and other growth in the study area.

Without-Project Weekday Peak Hour Traffic Volumes

2323 W Broadway

FIGURE
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Chapter 3. Project Impacts

This section documents project-generated impacts on the surrounding transportation system and at the study intersections.

Trip Generation

Project trip generation was estimated based on trip rates in the Institute of Transportation Engineers (ITE) *Trip Generation Manual,10th Edition*. The proposed use trip rates were based on the Multifamily Housing (Mid-Rise) (LU #221) general urban/suburban equations. The existing private high school land use was based on average trip rates for the High School (LU #530) general urban/ suburban use. The use of the High School (LU #530) to determine existing trips was used for the existing private high school because the ITE Private School (LU #536) is for grades K-12. It is noted that the ITE Private School trip rates are higher than the High School trip rates; therefore, the estimate of existing trip generation could be conservative.

The detailed trip generation calculations are provided in Appendix D. Table 6 summarizes the estimated weekday daily and AM and PM peak hour trip generation for the proposed project.

Table 6. Estimated Weekday Vehicle Project Trip Generation

			AM Peak-Hour Trips			PM Peak-Hour Trips		
Land Use	**Size**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed								
Multifamily Housing[1]	112 DUs	610	9	29	38	31	18	49
Existing								
Private High School[2]	120 Students	244	42	20	62	8	9	17
Total Net New		***366***	***-33***	***9***	***-24***	***23***	***9***	***32***

Note: DUs = dwelling units
1. Estimated weekday vehicle trip generation based on Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition Multifamily Housing (Mid-Rise) land use 221 equation trip rates.
2. Estimated weekday vehicle trip generation based on Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition High School land use 530 average trip rates.

As shown in Table 6, the proposed project is anticipated to generate approximately 366 net new weekday daily vehicle trips with a reduction of approximately 24 trips during the weekday AM peak hour and the addition of 32 trips during the weekday PM peak hour.

Trip Distribution and Assignment

Travel patterns for vehicular traffic to and from the proposed site were based on guidance from *OnTheMap*. *OnTheMap* is a US Census web-based mapping and reporting application showing where residents are employed and workers live based on census data. The *OnTheMap* census data for where people work that live within a quarter-mile radius of the proposed project was reviewed. The zip codes where people work and live were evaluated to determine if a person would be more likely to travel to the zip code via vehicle or by other means. Trips closer to the proposed project site or in more transit-oriented locations are more likely to use transit, walk, bike, or other non-SOV modes. The proposed project trip distribution is shown on Figure 5.

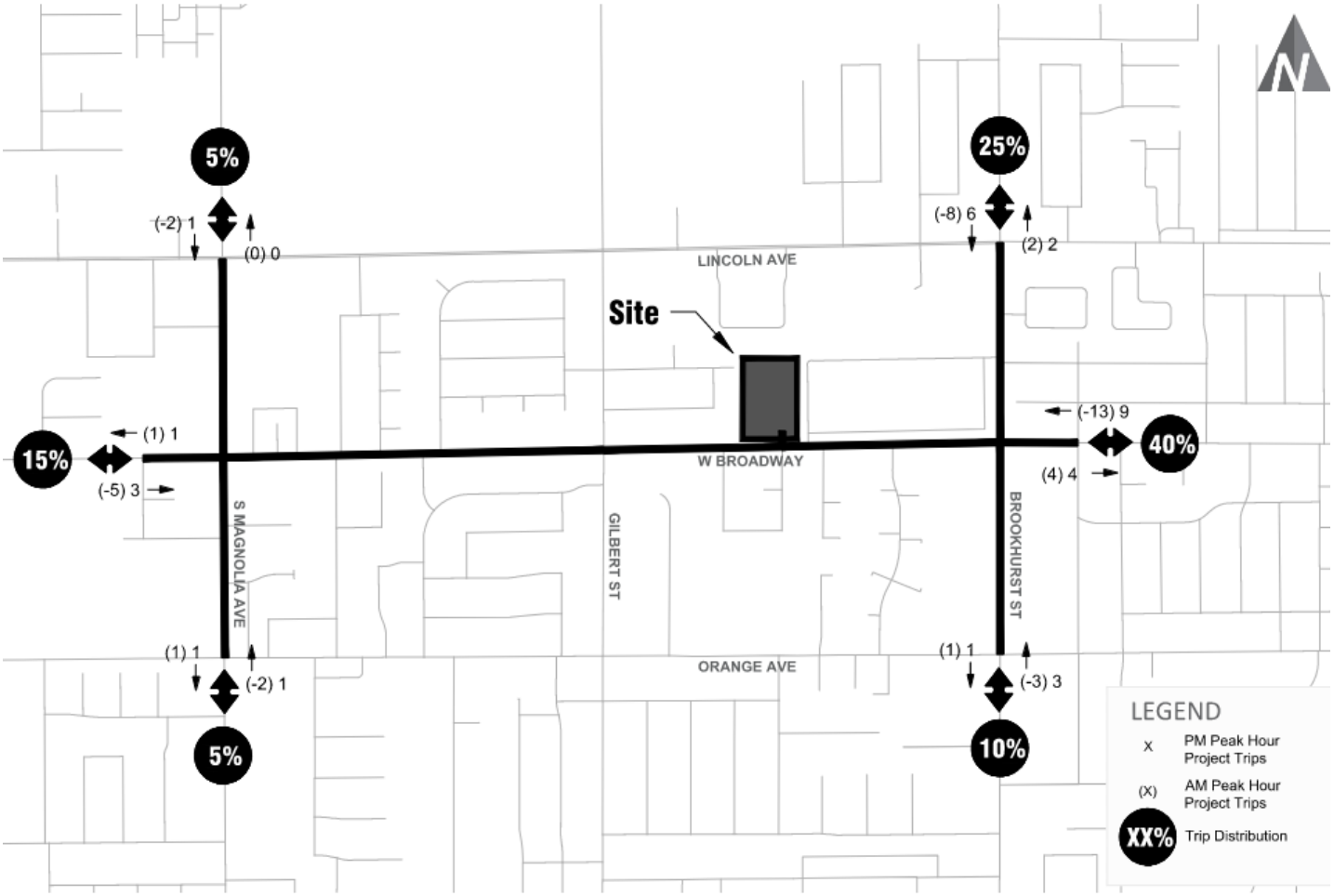
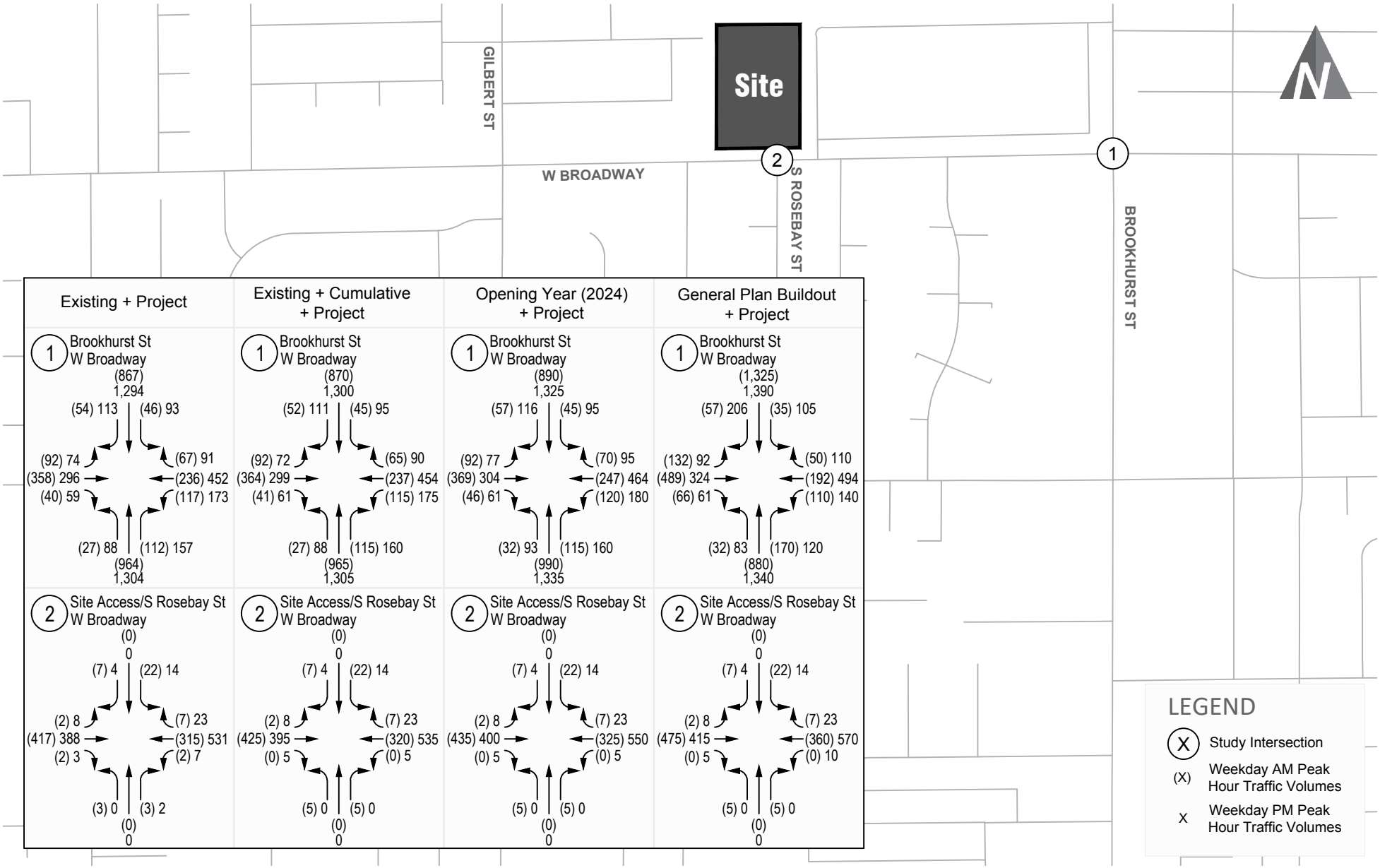


Figure 5: Project Trip Distribution and Assignment

Based on the *OnTheMap* travel patterns, the majority of the proposed project vehicle trips are anticipated to be oriented to/from I-5 and downtown Anaheim. The resulting travel patterns show 75 percent of the traffic from the site to/from the east with 40 percent along W Broadway towards I-5 and Downtown Anaheim and 25 percent to/from the north towards I-5.

Traffic Volumes

With-project traffic volumes were determined by adding the project trips to the without-project analysis scenarios described in the previous chapter. Existing plus Project, Existing plus Cumulative plus Project, Opening Year plus Cumulative plus Project, and General Plan Buildout plus Project weekday AM and PM peak hour traffic volumes are shown on Figure 6 for the Brookhurst Street/W Broadway and site access study intersection.



With-Project Weekday Peak Hour Traffic Volumes

2323 W Broadway

FIGURE 6

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With-Project Intersection Operations

An intersection operations analysis was conducted for the study intersections to evaluate the with-project weekday AM and PM peak hour conditions. Intersection operations were calculated using the LOS methodology described previously. Table 7 provides a comparison between without- and with-project conditions for the weekday AM and PM peak hours. Detailed LOS worksheets are included in Appendix C.

Table 7. Without and With-Project Weekday Peak Hour LOS Summary

	Without-Project			With-Project		
Scenario	**LOS[1]**	**V/C Ratio[2] or Delay**	**WM[3]**	**LOS**	**V/C Ratio or Delay**	**WM[3]**
1. Brookhurst Street/W Broadway						
Weekday AM Peak Hour						
Existing	A	0.47	-	A	0.47	-
Existing plus Cumulative Projects	A	0.47	-	A	0.48	-
Opening Year plus Cumulative Projects	A	0.48	-	A	0.49	-
General Plan Buildout	A	0.57	-	A	0.57	-
Weekday PM Peak Hour						
Existing	A	0.60	-	A	0.60	-
Existing plus Cumulative Projects	A	0.60	-	A	0.60	-
Opening Year plus Cumulative Projects	B	0.61	-	B	0.61	-
General Plan Buildout	B	0.64	-	B	0.64	-
2. Site Access/W Broadway						
Weekday AM Peak Hour						
Existing				B	12.3	SB
Existing plus Cumulative Projects				B	12.3	SB
Opening Year plus Cumulative Projects				B	12.4	SB
General Plan Buildout	*Site Access Analyzed Under With-Project Conditions Only*			B	13.9	SB
Weekday PM Peak Hour						
Existing				B	14.8	SB
Existing plus Cumulative Projects				B	14.8	SB
Opening Year plus Cumulative Projects				C	15.0	SB
General Plan Buildout				C	15.5	SB

1. Level of Service (A – F) based on Intersection Capacity Utilization (ICU)
2. V/C = Volume to Capacity Ratio
3. WM = Worst Movement

As shown in Table 7, the Brookhurst Street/W Broadway intersection operates at LOS B or better for with-project conditions during the weekday AM and PM peak hours. The study intersection meets the City of Anaheim LOS D standard and there are no significant project impacts. The site access operations would also meet the City's LOS standard for all analysis scenarios.

Roadway Segment Operations Analysis

The project is forecast to generate approximately 610 average daily trips, 366 trips more than the existing school. An analysis of the ADT for W Broadway was conducted for roadways segments east and west of the project site (or Rosebay Street) and is shown in Table 8.

Table 8. W Broadway Roadway Segment Analysis

Scenario	Capacity[1]	Without-Project LOS	Without-Project ADT[2]	Without-Project V/C Ratio	With-Project LOS	With-Project ADT	With-Project V/C Ratio
East of Site Access							
Existing Conditions	25,000	A	14,200	0.57	A	14,474	0.58
Existing plus Cumulative Projects	25,000	A	14,293	0.57	A	14,567	0.58
Opening Year plus Cumulative Projects	25,000	A	14,607	0.58	A	14,881	0.60
General Plan Build	25,000	B	15,800	0.63	B	16,074	0.64
West of Site Access							
Existing Conditions	25,000	A	13,700	0.55	A	13,792	0.55
Existing plus Cumulative Projects	25,000	A	13,793	0.55	A	13,885	0.56
Opening Year plus Cumulative Projects	25,000	A	14,096	0.56	A	14,188	0.57
General Plan Build	25,000	B	15,200	0.61	B	15,292	0.61

1. W Broadway average daily traffic (ADT) roadway capacity based on the *Guidance for Administration of the Orange County Master Plan of Arterial Highways* Table A-4-1 for an undivided 4-lane highway.
2. ADT = average daily traffic volume

As shown in Table 8, W Broadway east and west of the site without and with the project is well below the capacity of the roadway. The addition of the project would result in a nominal decrease in the daily trips on W Broadway. The increase in V/C ratio is not considered significant since conditions would be LOS A and B. As a result, no significant impacts to roadway segment operations are anticipated based on daily traffic volumes.

Mitigation

No significant off-site impacts were identified requiring mitigation. The existing transportation system would accommodate the proposed project.

Chapter 4. Summary of Findings

This TIS summarizes the proposed 2323 W Broadway residential development traffic impacts. Key findings include:

- The project would generate 366 net new daily vehicle trips with 24 fewer trips occurring during the weekday AM peak hour and 32 additional trips occurring in the weekday PM peak hour.
- Under without-project conditions, the Brookhurst Street/W Broadway study intersection operates at LOS B or better during the weekday AM and PM peak hours, meeting the City LOS Standard.
- Under with-project conditions, the study intersection continues to operate at LOS B or better.
- The site access intersection operates at LOS C or better and meets City LOS standards.
- The roadway segments near the project site operate at LOS B or better under with-project conditions and no significant impact is identified.
- Based on the analysis presented in this study, no significant off-site impacts are anticipated from the proposed development.

Appendix A: Scoping Materials

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WHAT TRANSPORTATION CAN BE.

MEMORANDUM

Date:	December 14, 2020	**TG:**	1.20268.00
To:	Eunice Lee – City of Anaheim		
From:	Stefanie Herzstein, PE, PTOE – Transpo Group		
cc:	Chad Brown – Melia Homes		
Subject:	2323 W Broadway Anaheim Traffic Impact Study Scoping		

This memorandum summarizes the traffic characteristics of the proposed residential development at 2323 W Broadway in Anaheim, California to assist in scoping of the traffic impact study (TIS). The recommended scope for the project TIS was based on coordination with City staff, the City of Anaheim Criteria for Preparation of Traffic Impact Studies (herein referenced as Anaheim TIS Criteria) and the characteristics of the proposed project. The project description, trip generation, trip distribution, study area and scope, traffic volumes, and methodology are described.

Project Description

The project is located on the north side of W Broadway between S Gilbert Street and Brookhurst Street. The site currently has a General Plan designation of School and requires a General Plan Amendment for a Low-Medium Residential designation.

The proposed project includes up to 112 townhomes. Primary access to the site would be provided via the eastern driveway along W Broadway. An emergency vehicle access would also be provided to the west along W Broadway. The proposal includes a total of 350 parking spaces with 224 garage spaces and 126 guest/open parking stalls. Figure 1 illustrates the project site plan.

The existing Cornelia Connelly School, private high school, would be removed as part of the project development.

It is anticipated that the development would be constructed and occupied by 2024.

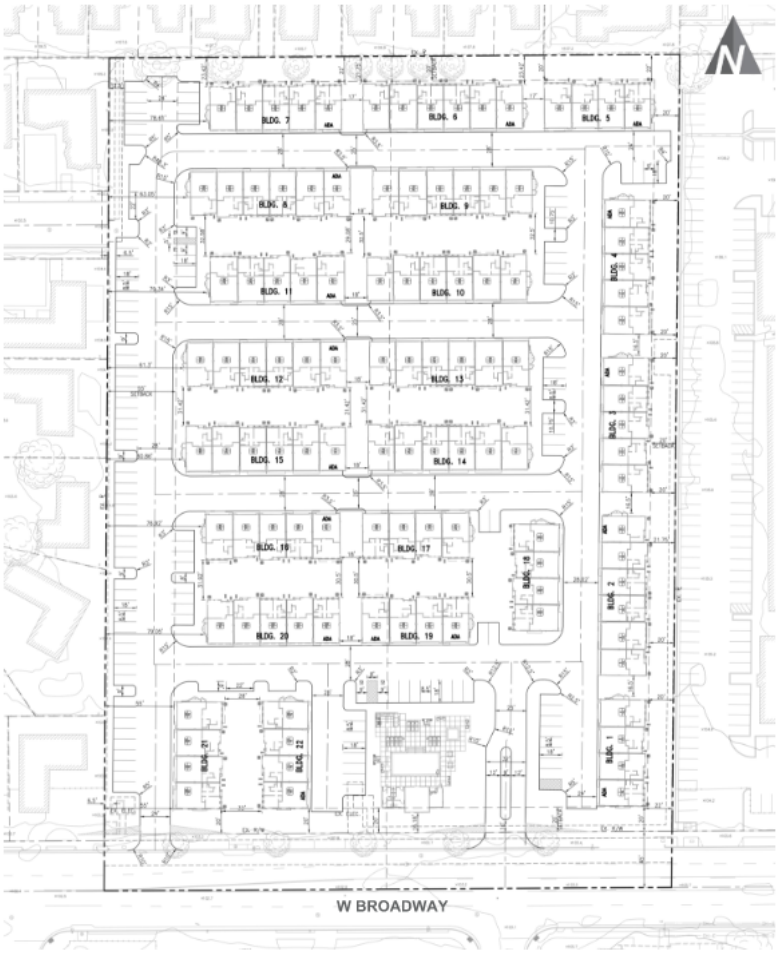


Figure 1 – Preliminary Site Plan

Trip Generation

Project trip generation was estimated based on trip rates in the Institute of Transportation Engineers (ITE) *Trip Generation Manual,10th Edition*. The proposed use trip rates were based on the Multifamily Housing (Mid-Rise) (LU #221) general urban/suburban equations. The existing private high school land use was based on average trip rates for the High School (LU #530) general urban/ suburban use. The use of the High School (LU #530) to determine existing trips was used for the existing private high school because the ITE Private School (LU #536) is for grades K-12. It is noted that the ITE Private School trip rates are higher than the High School trip rates; therefore, the estimate of existing trip generation could be conservative.

The detailed trip generation calculations are provided in Attachment A. Table 1 summarizes the estimated weekday daily and AM and PM peak hour trip generation for the proposed project.

Table 1. Estimated Weekday Vehicle Project Trip Generation

			AM Peak-Hour Trips			PM Peak-Hour Trips		
Land Use	**Size**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed								
Multifamily Housing[1]	112 DUs	610	9	29	38	31	18	49
Existing								
Private High School[2]	120 Students	244	42	20	62	8	9	17
Total Net New		***366***	***-33***	***9***	***-24***	***23***	***9***	***32***

Note: DUs = dwelling units

1. Estimated weekday vehicle trip generation based on Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition Multifamily Housing (Mid-Rise) land use 221 equation trip rates.
2. Estimated weekday vehicle trip generation based on Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition High School land use 530 average trip rates.

As shown in Table 1, the proposed project is anticipated to generate approximately 366 net new weekday daily vehicle trips with a reduction of approximately 24 trips during the weekday AM peak hour and the addition of 32 trips during the weekday PM peak hour.

Trip Distribution

Travel patterns for vehicular traffic to and from the proposed site were based on guidance from *OnTheMap*. *OnTheMap* is a US Census web-based mapping and reporting application showing where residents are employed and workers live based on census data. The *OnTheMap* census data for where people work that live within a quarter-mile radius of the proposed project was reviewed. The zip codes where people work and live were evaluated to determine if a person would be more likely to travel to the zip code via vehicle or by other means. Trips closer to the proposed project site or in more transit-oriented locations are more likely to use transit, walk, bike, or other non-SOV modes. The proposed project trip distribution is shown on Figure 2.

Based on the *OnTheMap* travel patterns, the majority of the proposed project vehicle trips are anticipated to be oriented to/from I-5 and downtown Anaheim. The resulting travel patterns show 75 percent of the traffic from the site to/from the east with 40 percent along W Broadway towards I-5 and Downtown Anaheim and 25 percent to/from the north towards I-5. The current trip assignment shows project trips oriented to the east making a left-turn out of the driveway; however, Transpo will refine this assumption if needed based on the outcome of the traffic operations analysis. It is assumed that if making a left-turn out of the driveway is difficult vehicles will make a right-turn and then circle back towards the east.

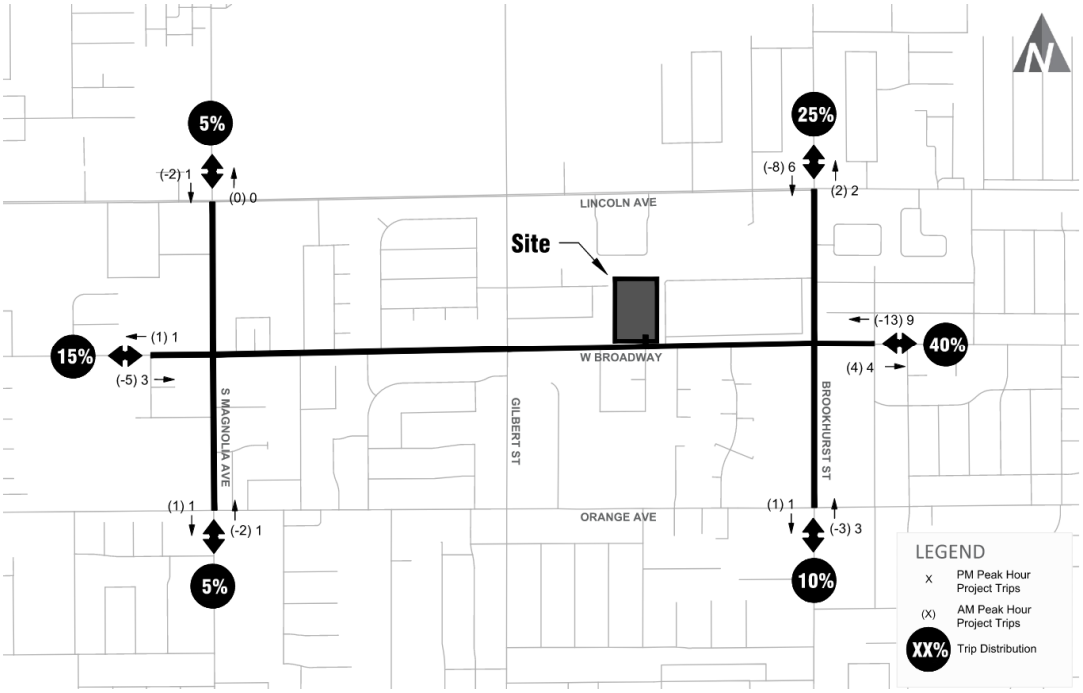


Figure 2 – Future With-Project Weekday Peak Hour Traffic Volumes

Study Area and Scope

This analysis will focus on the weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak period. These periods represent the highest cumulative total traffic for the adjacent street system. The Anaheim TIS Criteria identifies the study area as locations where the proposed project adds 51 or more weekday peak hour trips. Based on the trip generation and trip distribution, there are no locations where the project adds 51 or more weekday peak hour trips. The following study intersection is recommended for evaluation for the weekday AM and PM peak hours based on its proximity to the site:

1. Brookhurst Street/W Broadway
2. Project Driveway/W Broadway

The project driveway along W Broadway will be analyzed under with-project conditions only.

Roadway segment operations will also be evaluated along the following segments:

1. W Broadway between site driveway and Brookhurst Street
2. W Broadway between site driveway and S Gilbert Street

Analysis Scenarios

Since the proposed project would require a General Plan Amendment, the Anaheim TIS Criteria requires the following analysis scenarios:

- Existing Conditions
- Existing plus Project
- Existing plus Cumulative Projects
- Existing plus Cumulative Projects plus Project
- Opening Year plus Cumulative Projects
- Opening Year plus Cumulative Projects plus Project
- General Plan Buildout
- General Plan Buildout plus Project

The study intersection and roadway segments will be evaluated for the eight analysis scenarios.

Traffic Counts and Future Volumes

The following describes traffic volumes for the analysis scenarios described above.

Existing Conditions will be based on traffic counts either be provided by City of Anaheim or collected at the study intersection. Due to the current COVID conditions, if traffic counts are collected then they will be calibrated based on historical count data. The counts will be factored by determining an approximate reduction in volumes under COVID conditions relative to typical conditions. The City will provide historical traffic counts and confirm the factor applied to the count data. If the City has recent count data (prior to COVID conditions), an annual growth rate of one (1) percent is proposed to be used to grow past counts to existing conditions.

Existing Plus Cumulative Projects traffic volume volumes will be based on trip generation and distribution for approved and proposed developments in the project vicinity. The proposed project traffic will be added to the Existing plus Cumulative Projects conditions to form the basis of the Existing plus Cumulative Projects plus Project conditions. Based on a review of the City's Andy Map and consideration of the study intersection and roadway segments, the following Cumulative Projects have been identified for inclusion in the analysis:

- **331 N Brookhurst Street** – Expand an existing motel with 12 new rooms
- **2301-2331 W Lincoln Avenue** – Development of a 48-unit, three story attached and detached single family residential project.
- **2280 W Lincoln Avenue** – Demolition of an existing single-family residence and construction a 12-unit condominium complex.
- **9812 W Orange Avenue** – Development of 8 new 2-story single family homes.

Opening Year (2024) plus Cumulative Projects traffic volumes will be determined by adding a growth rate of one percent per year to the existing traffic volumes and adding traffic from cumulative development projects identified above.

General Plan Buildout traffic volumes will be provided by the City of Anaheim. The no-project traffic volumes will assume the existing General Plan designation for School. The project proposes a General Plan amendment to change the designation of the site to Low-Medium Residential.

Methodology

The analysis method to evaluate intersections and roadway segments is described below.

Intersections

Signalized intersections. The operational characteristics of an intersection are determined by calculating the intersection's level of service (LOS). The intersection as a whole and its individual turning movements can be described alphabetically with a range of levels of service (A through F), with LOS A indicating free-flow traffic and LOS F indicating extreme congestion and long vehicle delays. At signalized intersections, LOS was calculated using the *Intersection Capacity Utilization* methodology. LOS at signalized intersections is measured based on the sum of the volume to capacity (v/c) ratio of the critical movements. Table 2 shows the relationship between v/c ratio and LOS for signalized intersections.

Table 2. Level of Service Criteria for Signalized Intersections using ICU Methodology

Level of Service	V/C Ratio	General Description (Signalized Intersections)
A	≤0.60	Free Flow
B	0.61 to ≤ 0.70	Stable Flow (slight delays)
C	0.71 to ≤ 0.80	Stable flow (acceptable delays)
D	0.81 to ≤ 0.90	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	0.91 to ≤ 1.00	Unstable flow (intolerable delay)
F	>1.00	Forced flow (jammed)

Unsignalized intersections LOS at unsignalized intersections is classified by two intersection types: all-way stop-controlled and two-way stop-controlled. LOS for unsignalized intersections was calculated using the *Highway Capacity Manual, 6th Edition* methodology. All-way, stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all of the movements, much like that of a signalized intersection. Two-way, stop-controlled intersection LOS is defined in terms of the average vehicle delay of an individual movement(s). This is because the performance of a two-way, stop-controlled intersection is more closely reflected in terms of its individual movements, rather than its performance overall. For this reason, LOS for a two-way, stop-controlled intersection is defined in terms of its individual movements. With this in mind, total average vehicle delay (i.e., average delay of all movements) for a two-way, stop-controlled intersection should be viewed with discretion. Table 3 shows the relationship between vehicle delay and LOS for unsignalized intersections (both all-way and two-way, stop-controlled).

Table 3. Level of Service Criteria for Unsignalized Intersections

Level of Service	Two-Way and All-Way Stop Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: *Highway Capacity Manual*, Transportation Research Board, 2016.

Roadway Segments

The analysis of roadway segments is based on the average daily traffic volumes and daily roadway capacity. Roadway operations are determined by calculating the volume-to-capacity (V/C) ratio.

Significance Criteria

The City of Anaheim, in the General Plan Circulation Element, has adopted a performance standard of LOS D (peak hour ICU less than or equal to 0.90) for all signalized intersections with the exception that LOS E is acceptable at designated Congestion Management Program (CMP) intersections. There are no designated CMP intersections within the project study area, therefore LOS D is applied as the maximum acceptable LOS at all study area intersections. A significant impact would occur if the project increases the v/c ratio at a study area intersection as shown below.

With Project LOS	Project-Related Increase in V/C Ratio
LOS C	equal to or greater than 0.050
LOS D	equal to or greater than 0.030
LOS E or F	equal to or greater than 0.010

We trust this memorandum provides the information to confirm the scope of the TIS for the proposed project at 2323 W Broadway. Please provide available weekday peak hour and daily traffic counts for the study locations, approved and proposed development trip generation and assignment, and confirm the study assumptions and approach described in this document.

Attachment A: Trip Generation Worksheets

Attachment A: Trip Generation

2323 W Broadway Project Trip Generation

Land Use	Setting	Size	Units	Equation[1]	Avg. Rate[1]	Inbound %	Trips Inbound	Trips Outbound	Trips Total
Proposed Use									
Multifamily (Mid-Rise) (LU 221)		**112**	du						
Daily	General Urban/Suburban			T = 5.45X - 1.75	-	50%	305	305	610
AM Peak Hour	General Urban/Suburban			Ln(T) = 0.98*Ln(X) - 0.98	-	23%	9	29	38
PM Peak Hour	General Urban/Suburban			Ln(T) = 0.96*Ln(X) - 0.63	-	63%	31	18	49
Existing Use									
High School (LU 530)		**120**	students						
Daily	General Urban/Suburban			-	2.03	50%	122	122	244
AM Peak Hour	General Urban/Suburban			-	0.52	67%	42	20	62
PM Peak Hour	General Urban/Suburban			-	0.14	48%	8	9	17
Net New Trips									
Daily							183	183	366
AM Peak Hour							-33	9	-24
PM Peak Hour							23	9	32

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation* 10th Edition equation and average trip rate as shown above.

Jonathan Shuster

From: Eunice Lee <EuLee@anaheim.net>
Sent: Monday, January 11, 2021 11:59 AM
To: Jonathan Shuster; Stefanie Herzstein; Chad Brown
Cc: Vincent Tran
Subject: RE: 2323 Broadway VMT Analysis and TIS Scoping
Attachments: Appendix F - Traffic Impact Analysis_Final.pdf; Trip Generation Memo.pdf

Hi,

I am including TIA for 227 N Magnolia and approved Trip generation for 2720 W Lincoln Ave. Please see the status of the project below.

1	420 N Magnolia Ave	completed
2	227 N Magnolia Ave	TIA attached.
3	2651 W Lincoln Ave	completed
5	2726 W Lincoln Ave	completed
6	2720 W Lincoln Ave	Trip gen attached
7	2620 W Orange Ave	completed
8	511 N Brookhurst St	completed
9	331 N Brookhurst St	withdrawn
10	9812 W Orange Ave	
11	2280 W Lincoln Ave	not approved yet
12	2301-2331 W Lincoln Ave	Not active
13	138 S Gilbert St	not approved yet

As we discussed previously, please submit the intro of TIA when it is available to begin RFP process for TIA peer review. Please allow min. 2 weeks to complete the selection of the peer reviewer process.

Let me know if you have any question.

Thanks,

Eunice

From: Jonathan Shuster <jonathan.shuster@transpogroup.com>
Sent: Thursday, January 7, 2021 2:10 PM
To: Eunice Lee <EuLee@anaheim.net>; Stefanie Herzstein <stefanie.herzstein@transpogroup.com>; Chad Brown <chad@melia-homes.com>
Cc: Vincent Tran <VTran2@anaheim.net>
Subject: RE: 2323 Broadway VMT Analysis and TIS Scoping

Hi Eunice,

Thanks for sending this over. I reviewed Andy's Map within a mile of the site and an updated pipeline list is below. We need you to tell us the size of some of the developments, as they were not provided on Andy's Map.

Pipeline #	Address	Description
1	420 N Magnolia Ave	The development of a 25-unit small-lot single family residential project

2	227 N Magnolia Ave	A request to demolish an existing church and construct a new multifamily residential
3	2651 W Lincoln Ave	A conditional use permit to construct a 41-unit single family attached residential proje
5	2726 W Lincoln Ave	A variance to allow reduced building and landscape setbacks to construct a 34-unit co
6	2720 W Lincoln Ave	A conditional use permit to establish an outdoor recreational vehicle (RV) storage faci
7	2620 W Orange Ave	To permit and retain an existing church within a multi-tenant office building.
8	511 N Brookhurst St	A Minor CUP request to establish a private vocational/career college (North-West Col
9	331 N Brookhurst St	Expand an existing motel with 12 new rooms (detached 3 story building)
10	9812 W Orange Ave	Permit the development of 8 new 2-story single family homes
11	2280 W Lincoln Ave	CUP and TTM to demolish an existing single family residence and construct a 12-unit c
12	2301-2331 W Lincoln Ave	The development of a 48-unit, three story attached and detached single family reside
13	138 S Gilbert St	CUP for Transitional Living Home

If any of these projects have traffic studies already completed, please send them over. We will move forward with the information we have at the moment.

Additionally, I noticed that the CIP includes a signal coordination project along Brookhurst Street. Since we are only studying the one signal at W Broadway, we will optimize the signal timing in future scenarios. Let us know if we need to do something differently.

-Jonathan

Jonathan Shuster, EIT | Transportation Engineer
425-896-5267 206-947-2229

From: Eunice Lee <EuLee@anaheim.net>
Sent: Thursday, January 7, 2021 12:22 PM
To: Stefanie Herzstein <stefanie.herzstein@transpogroup.com>; Chad Brown <chad@melia-homes.com>
Cc: Jonathan Shuster <jonathan.shuster@transpogroup.com>; Vincent Tran <VTran2@anaheim.net>
Subject: RE: 2323 Broadway VMT Analysis and TIS Scoping

Hi,

Please see attached for the existing volumes for 2020 and General Plan buildout volumes.

For cumulative projects, please use 1 mile radius instead of 0.25 mile used in the scoping agreement.

For Annual Growth Rate, please use 0.55%.

Thanks,

Eunice

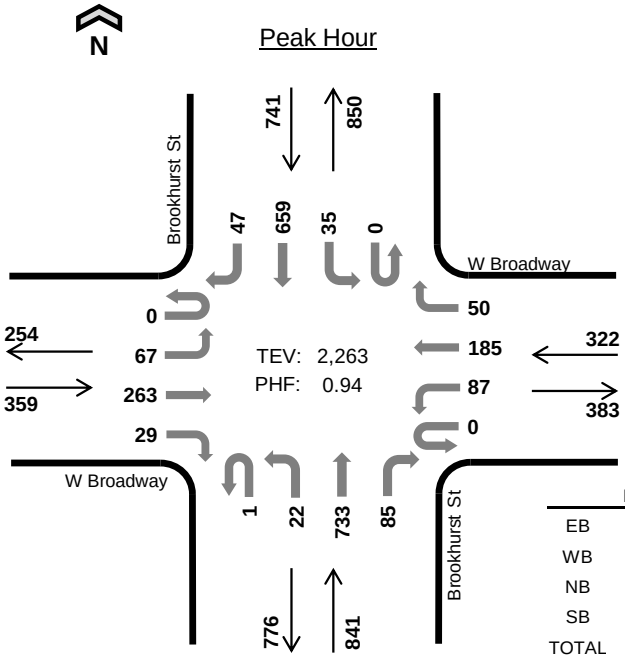
From: Stefanie Herzstein <stefanie.herzstein@transpogroup.com>
Sent: Tuesday, January 5, 2021 12:21 PM
To: Chad Brown <chad@melia-homes.com>; Eunice Lee <EuLee@anaheim.net>
Cc: Jonathan Shuster <jonathan.shuster@transpogroup.com>
Subject: RE: 2323 Broadway VMT Analysis and TIS Scoping

Thanks Chad. Yes we still need the traffic volume data from David.

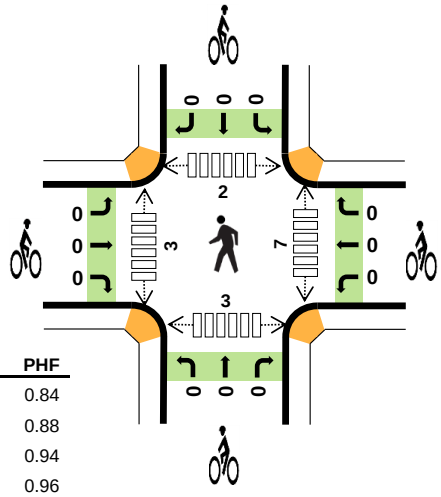
Appendix B: Traffic Counts

Brookhurst St
W Broadway

Date: 12-17-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	0.8%	0.84
WB	1.9%	0.88
NB	1.5%	0.94
SB	3.1%	0.96
TOTAL	2.0%	0.94



Two-Hour Count Summaries

Interval Start		W Broadway Eastbound				W Broadway Westbound				Brookhurst St Northbound				Brookhurst St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	12	44	10	0	17	41	9	0	3	151	17	0	3	117	7	431	0
7:15 AM		0	21	82	8	0	15	43	10	0	5	166	22	0	7	116	8	503	0
7:30 AM		0	23	50	9	0	12	44	5	0	9	195	18	0	9	157	4	535	0
7:45 AM		**0**	**14**	**85**	**8**	**0**	**28**	**50**	**13**	**1**	**5**	**190**	**27**	**0**	**8**	**155**	**16**	**600**	2,069
8:00 AM		**0**	**17**	**67**	**8**	**0**	**15**	**40**	**15**	**0**	**9**	**187**	**18**	**0**	**9**	**175**	**9**	**569**	2,207
8:15 AM		**0**	**16**	**59**	**4**	**0**	**24**	**52**	**9**	**0**	**1**	**177**	**18**	**0**	**6**	**166**	**15**	**547**	2,251
8:30 AM		**0**	**20**	**52**	**9**	**0**	**20**	**43**	**13**	**0**	**7**	**179**	**22**	**0**	**12**	**163**	**7**	**547**	**2,263**
8:45 AM		0	15	42	12	0	15	43	16	0	6	179	19	0	12	173	10	542	2,205
Count Total		0	138	481	68	0	146	356	90	1	45	1,424	161	0	66	1,222	76	4,274	0
Peak Hour	**All**	**0**	**67**	**263**	**29**	**0**	**87**	**185**	**50**	**1**	**22**	**733**	**85**	**0**	**35**	**659**	**47**	**2,263**	**0**
	HV	**0**	**1**	**2**	**0**	**0**	**0**	**4**	**2**	**0**	**0**	**13**	**0**	**0**	**1**	**21**	**1**	**45**	**0**
	HV%	**-**	**1%**	**1%**	**0%**	**-**	**0%**	**2%**	**4%**	**0%**	**0%**	**2%**	**0%**	**-**	**3%**	**3%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	3	3	*8*	0	0	0	0	*0*	0	1	0	3	*4*
7:15 AM	0	1	2	3	*6*	0	0	0	0	*0*	0	2	0	3	*5*
7:30 AM	0	0	2	3	*5*	0	0	0	0	*0*	1	0	2	1	*4*
7:45 AM	**0**	**3**	**5**	**2**	***10***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**2**	**2**	*7*
8:00 AM	**1**	**0**	**3**	**5**	***9***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:15 AM	**2**	**1**	**2**	**7**	***12***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	*3*
8:30 AM	**0**	**2**	**3**	**9**	***14***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**1**	***4***
8:45 AM	1	0	5	5	*11*	0	0	0	1	*1*	0	1	0	0	*1*
Count Total	5	8	25	37	*75*	0	0	0	1	*1*	8	7	4	10	*29*
Peak Hour	**3**	**6**	**13**	**23**	***45***	**0**	**0**	**0**	**0**	***0***	**7**	**3**	**2**	**3**	***15***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	W Broadway Eastbound				W Broadway Westbound				Brookhurst St Northbound				Brookhurst St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	1	0	0	0	3	0	0	0	3	0	8	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	2	0	0	0	3	0	6	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	5	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**10**	29
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**9**	30
8:15 AM	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**6**	**1**	**12**	36
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**8**	**0**	**14**	**45**
8:45 AM	0	0	1	0	0	0	0	0	0	0	5	0	0	0	5	0	11	46
Count Total	0	2	3	0	0	0	6	2	0	0	24	1	0	1	35	1	75	0
Peak Hour	**0**	**1**	**2**	**0**	**0**	**0**	**4**	**2**	**0**	**0**	**13**	**0**	**0**	**1**	**21**	**1**	**45**	**0**

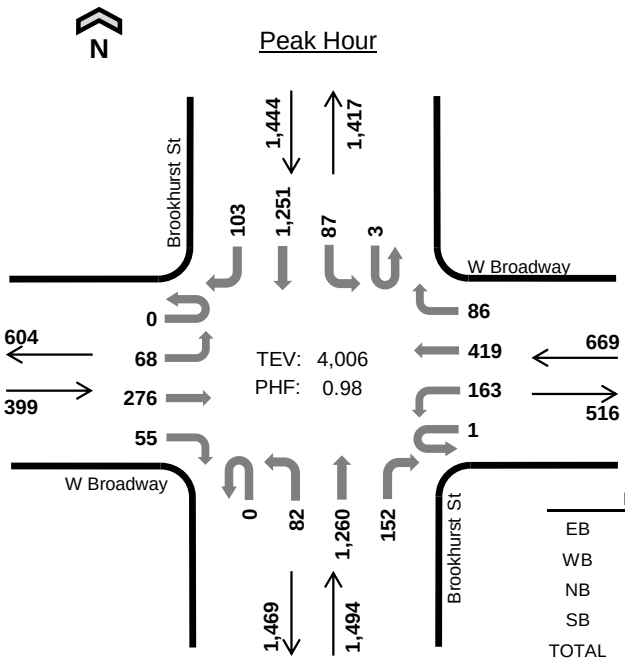
Two-Hour Count Summaries - Bikes

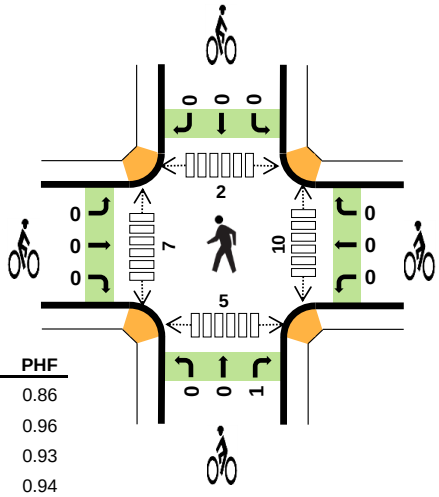
Interval Start	W Broadway Eastbound			W Broadway Westbound			Brookhurst St Northbound			Brookhurst St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Brookhurst St
W Broadway

Date: 12-17-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.3%	0.86
WB	0.1%	0.96
NB	0.9%	0.93
SB	0.9%	0.94
TOTAL	0.7%	0.98

Two-Hour Count Summaries

Interval Start		W Broadway Eastbound				W Broadway Westbound				Brookhurst St Northbound				Brookhurst St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	8	61	10	0	31	93	19	1	17	259	38	0	22	278	16	853	0
4:15 PM		0	13	48	11	0	34	95	14	1	10	282	35	2	20	288	25	878	0
4:30 PM		0	14	73	14	0	46	109	25	0	16	270	32	0	12	302	21	934	0
4:45 PM		**0**	**12**	**69**	**7**	**0**	**45**	**105**	**24**	**0**	**11**	**289**	**31**	**0**	**20**	**335**	**28**	**976**	3,641
5:00 PM		**0**	**25**	**75**	**16**	**0**	**45**	**98**	**25**	**0**	**19**	**308**	**48**	**0**	**24**	**292**	**25**	**1,000**	3,788
5:15 PM		**0**	**14**	**68**	**19**	**1**	**34**	**106**	**19**	**0**	**31**	**330**	**40**	**3**	**23**	**309**	**28**	**1,025**	3,935
5:30 PM		**0**	**17**	**64**	**13**	**0**	**39**	**110**	**18**	**0**	**21**	**333**	**33**	**0**	**20**	**315**	**22**	**1,005**	**4,006**
5:45 PM		0	8	68	15	0	38	91	16	0	23	266	37	0	19	286	38	905	3,935
Count Total		0	111	526	105	1	312	807	160	2	148	2,337	294	5	160	2,405	203	7,576	0
Peak Hour	**All**	**0**	**68**	**276**	**55**	**1**	**163**	**419**	**86**	**0**	**82**	**1,260**	**152**	**3**	**87**	**1,251**	**103**	**4,006**	**0**
	HV	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**9**	**3**	**0**	**1**	**12**	**0**	**28**	**0**
	HV%	**-**	**0%**	**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**-**	**1%**	**1%**	**2%**	**0%**	**1%**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	2	*4*	0	0	0	0	*0*	1	3	0	0	*4*
4:15 PM	0	1	3	2	*6*	0	0	0	0	*0*	4	2	2	1	*9*
4:30 PM	0	0	6	1	*7*	0	0	0	0	*0*	5	0	4	1	*10*
4:45 PM	**1**	**0**	**1**	**3**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**4**	**0**	**0**	*6*
5:00 PM	**0**	**0**	**5**	**4**	***9***	**0**	**0**	**1**	**0**	***1***	**2**	**0**	**1**	**1**	*4*
5:15 PM	**0**	**1**	**3**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**5**	**1**	**0**	**3**	*9*
5:30 PM	**0**	**0**	**4**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**1**	**1**	***5***
5:45 PM	0	0	1	3	*4*	0	0	0	0	*0*	3	0	0	1	*4*
Count Total	1	2	25	21	*49*	0	0	1	0	*1*	23	12	8	8	*51*
Peak Hour	**1**	**1**	**13**	**13**	***28***	**0**	**0**	**1**	**0**	***1***	**10**	**7**	**2**	**5**	***24***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	W Broadway Eastbound				W Broadway Westbound				Brookhurst St Northbound				Brookhurst St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	4	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	2	0	6	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	7	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**5**	22
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**4**	**0**	**9**	27
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**1**	**0**	**6**	27
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**0**	**8**	**28**
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	4	27
Count Total	0	0	0	1	0	1	1	0	0	1	20	4	0	1	19	1	49	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**9**	**3**	**0**	**1**	**12**	**0**	**28**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	W Broadway Eastbound			W Broadway Westbound			Brookhurst St Northbound			Brookhurst St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**

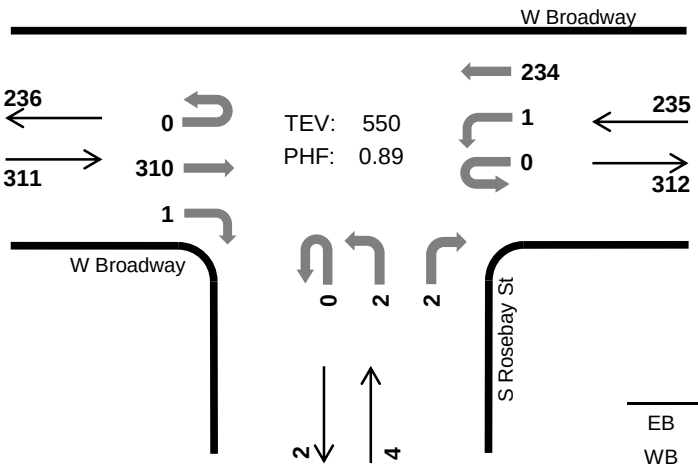
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

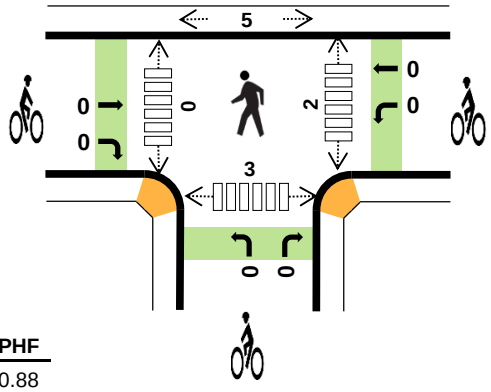
S Rosebay St
W Broadway

N

Peak Hour

Date: 12-17-2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	0.3%	0.88
WB	0.9%	0.90
NB	0.0%	0.50
SB	-	-
TOTAL	0.5%	0.89

Two-Hour Count Summaries

Interval Start		W Broadway Eastbound				W Broadway Westbound				S Rosebay St Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	69	0	0	0	52	0	0	1	0	1	0	0	0	0	123	0
7:15 AM		**0**	**0**	**76**	**0**	**0**	**0**	**58**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**134**	0
7:30 AM		**0**	**0**	**71**	**0**	**0**	**0**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**127**	0
7:45 AM		**0**	**0**	**88**	**0**	**0**	**1**	**64**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**155**	539
8:00 AM		**0**	**0**	**75**	**1**	**0**	**0**	**56**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**134**	**550**
8:15 AM		0	0	69	0	0	0	60	0	0	2	0	0	0	0	0	0	131	547
8:30 AM		1	0	65	0	0	1	57	0	0	1	0	0	0	0	0	0	125	545
8:45 AM		0	0	66	1	0	1	55	0	0	3	0	1	0	0	0	0	127	517
Count Total		1	0	579	2	0	3	458	0	0	9	0	4	0	0	0	0	1,056	0
Peak Hour	**All**	**0**	**0**	**310**	**1**	**0**	**1**	**234**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**550**	**0**
	HV	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
	HV%	**-**	**-**	**0%**	**0%**	**-**	**0%**	**1%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	3	0	*3*
7:15 AM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**3**	*4*
7:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
7:45 AM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**3**	**0**	*5*
8:00 AM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	4	0	*4*
8:30 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	2	0	*2*
Count Total	4	5	0	0	*9*	0	0	0	0	*0*	2	0	14	3	*19*
Peak Hr	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**5**	**3**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	W Broadway				W Broadway				S Rosebay St				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
8:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	4
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
Count Total	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	9	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	W Broadway			W Broadway			S Rosebay St			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

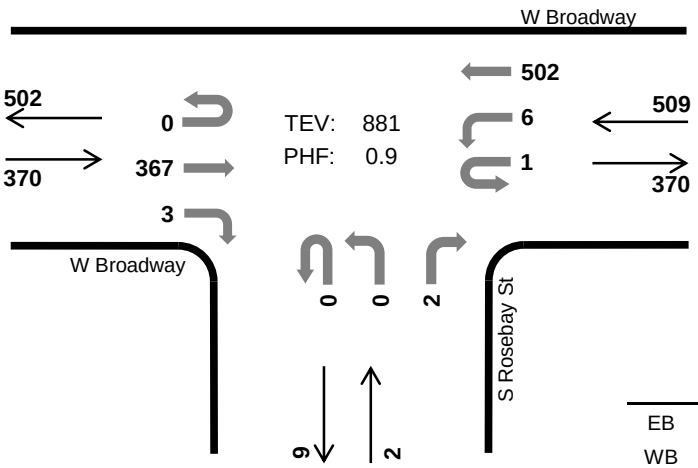
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

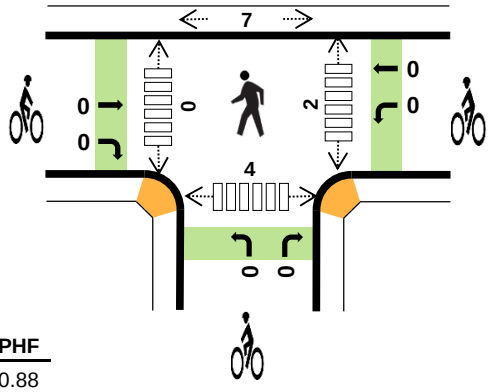
S Rosebay St
W Broadway

N

Peak Hour

Date: 12-17-2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.5%	0.88
WB	0.4%	0.92
NB	0.0%	0.50
SB	-	-
TOTAL	0.5%	0.90

Two-Hour Count Summaries

Interval Start		W Broadway Eastbound				W Broadway Westbound				S Rosebay St Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	70	2	0	2	114	0	0	0	0	2	0	0	0	0	190	0
4:15 PM		1	0	82	0	0	2	107	0	0	1	0	1	0	0	0	0	194	0
4:30 PM		**0**	**0**	**87**	**3**	**0**	**2**	**123**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**216**	0
4:45 PM		**0**	**0**	**82**	**0**	**0**	**1**	**135**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**218**	818
5:00 PM		**0**	**0**	**93**	**0**	**1**	**2**	**107**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**203**	831
5:15 PM		**0**	**0**	**105**	**0**	**0**	**1**	**137**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**244**	**881**
5:30 PM		0	0	76	0	0	3	124	0	0	0	0	1	0	0	0	0	204	869
5:45 PM		0	0	78	0	0	1	106	0	0	0	0	1	0	0	0	0	186	837
Count Total		1	0	673	5	1	14	953	0	0	1	0	7	0	0	0	0	1,655	0
Peak Hour	**All**	**0**	**0**	**367**	**3**	**1**	**6**	**502**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**881**	**0**
	HV	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**
	HV%	**-**	**-**	**1%**	**0%**	**0%**	**0%**	**0%**	**-**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	2	0	*2*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	2	0	6	2	*10*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**5**	**0**	*5*
4:45 PM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**2**	*4*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**2**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**2**	***4***
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	5	1	*6*
5:45 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	2	3	0	0	*5*	0	0	0	0	*0*	4	0	21	7	*32*
Peak Hr	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**7**	**4**	***13***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	W Broadway				W Broadway				S Rosebay St				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	W Broadway			W Broadway			S Rosebay St			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Location: W Broadway, W of Thistle Rd
Date Range: 12/17/2020 - 12/23/2020
Site Code: 01

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	12/17/2020			12/18/2020			12/19/2020			12/20/2020			12/21/2020			12/22/2020			12/23/2020					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	31	44	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	44	75
1:00 AM	22	22	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	22	44
2:00 AM	13	15	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	15	28
3:00 AM	19	25	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	25	44
4:00 AM	59	27	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	27	86
5:00 AM	143	80	223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143	80	223
6:00 AM	221	125	346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	221	125	346
7:00 AM	**326**	214	540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**326**	214	540
8:00 AM	291	216	507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	291	216	507
9:00 AM	250	213	463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	213	463
10:00 AM	245	251	496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	245	251	496
11:00 AM	293	**286**	**579**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	293	**286**	**579**
12:00 PM	293	323	616	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	293	323	616
1:00 PM	317	338	655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	317	338	655
2:00 PM	334	374	708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	334	374	708
3:00 PM	**392**	348	740	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**392**	348	740
4:00 PM	337	462	799	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	337	462	799
5:00 PM	367	**476**	**843**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	367	**476**	**843**
6:00 PM	262	378	640	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262	378	640
7:00 PM	231	286	517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	286	517
8:00 PM	171	250	421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171	250	421
9:00 PM	142	185	327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	142	185	327
10:00 PM	79	133	212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	133	212
11:00 PM	62	71	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	71	133
Total	4,900	5,142	10,042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,900	5,142	10,042
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	07:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	11:00	11:00
Vol.	326	286	579	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	326	286	579
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	392	476	843	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	392	476	843

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: W Broadway, W of S Corner St
Date Range: 12/17/2020 - 12/23/2020
Site Code: 02

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	12/17/2020			12/18/2020			12/19/2020			12/20/2020			12/21/2020			12/22/2020			12/23/2020					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	29	37	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	37	66
1:00 AM	21	20	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	20	41
2:00 AM	12	15	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	15	27
3:00 AM	18	26	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	26	44
4:00 AM	54	27	81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	27	81
5:00 AM	124	81	205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	124	81	205
6:00 AM	204	132	336	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	132	336
7:00 AM	**291**	233	524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**291**	233	524
8:00 AM	274	233	507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	274	233	507
9:00 AM	231	217	448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	231	217	448
10:00 AM	227	255	482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227	255	482
11:00 AM	270	**274**	**544**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	**274**	**544**
12:00 PM	257	308	565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	257	308	565
1:00 PM	299	327	626	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	299	327	626
2:00 PM	318	353	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	318	353	671
3:00 PM	358	356	714	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	358	356	714
4:00 PM	326	**478**	804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	326	**478**	804
5:00 PM	**363**	459	**822**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**363**	459	**822**
6:00 PM	259	366	625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	259	366	625
7:00 PM	218	291	509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	218	291	509
8:00 PM	160	237	397	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	237	397
9:00 PM	148	181	329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	148	181	329
10:00 PM	82	135	217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	135	217
11:00 PM	63	64	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	64	127
Total	4,606	5,105	9,711	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,606	5,105	9,711
Percent	47%	53%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47%	53%	-
AM Peak	07:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	07:00	11:00	11:00
Vol.	291	274	544	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	291	274	544
PM Peak	17:00	16:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:00	16:00	17:00
Vol.	363	478	822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	363	478	822

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Final 2020 Numbers- AM Peak

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Brookhurst/Broadway	30	964	112	46	867	62	90	354	39	117	249	67	2997
Rosebay/Broadway	3	0	3	0	0	0	0	417	2	2	315	0	742

Final 2020 Numbers- PM Peak

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Brookhurst/Broadway	85	1304	157	93	1294	107	72	292	58	173	443	91	4169
Rosebay/Broadway	0	0	2	0	0	0	0	388	3	7	531	0	931

Final GP Buildout Numbers- AM Peak

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Brookhurst/Broadway	33	881	170	35	1327	66	128	485	67	108	207	50	3557
Rosebay/Broadway	3	0	3	0	0	0	0	476	2	2	359	0	845

Final GP Buildout Numbers- AM Peak

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
Brookhurst/Broadway	81	1341	118	103	1389	201	92	319	61	141	485	109	4440
Rosebay/Broadway	0	0	2	0	0	0	0	415	3	8	568	0	996

Street	Count Location	2020 Adjust	GP Buildout
BROADWAY	W/O BROOKHURST ST	14,200	15,800

Appendix C: LOS Worksheets

PROJECT:		**Anaheim**						
SCENARIO:		**Existing**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0	1,700	30	0.02		1,700	85	0.05	
NBT	3.0	5,100	964	0.21	*	5,100	1,304	0.29	*
NBR	0.0		112	0.00			157	0.00	
SBL	1.0	1,700	46	0.03	*	1,700	93	0.05	*
SBT	3.0	5,100	867	0.18		5,100	1,294	0.27	
SBR	0.0		62	0.00			107	0.00	
EBL	1.0	1,700	90	0.05		1,700	72	0.04	
EBT	2.0	3,400	354	0.12	*	3,400	292	0.10	*
EBR	0.0		39	0.00			58	0.00	
WBL	1.0	1,700	117	0.07	*	1,700	173	0.10	*
WBT	2.0	3,400	249	0.09		3,400	443	0.16	
WBR	0.0		67	0.00			91	0.00	
		N/S Movements		0.24				0.34	
		E/W Movements		0.18				0.20	
		Rt. Turn Component		0.00				0.00	
		Yellow Clearance		0.05				0.05	
TOTAL CAPACITY UTILIZATION				**0.47**				**0.60**	
LEVEL OF SERVICE (LOS)				**A**				**A**	

PROJECT:		**Anaheim**						
SCENARIO:		**Existing + Project**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0	1,700	27	0.02		1,700	88	0.05	
NBT	3.0	5,100	964	0.21	*	5,100	1,304	0.29	*
NBR	0.0		112	0.00			157	0.00	
SBL	1.0	1,700	46	0.03	*	1,700	93	0.05	*
SBT	3.0	5,100	867	0.18		5,100	1,294	0.28	
SBR	0.0		54	0.00			113	0.00	
EBL	1.0	1,700	92	0.05		1,700	74	0.04	
EBT	2.0	3,400	358	0.12	*	3,400	296	0.10	*
EBR	0.0		40	0.00			59	0.00	
WBL	1.0	1,700	117	0.07	*	1,700	173	0.10	*
WBT	2.0	3,400	236	0.09		3,400	452	0.16	
WBR	0.0		67	0.00			91	0.00	
		N/S Movements		0.24				0.34	
		E/W Movements		0.19				0.21	
		Rt. Turn Component		0.00				0.00	
		Yellow Clearance		0.05				0.05	
TOTAL CAPACITY UTILIZATION				**0.47**				**0.60**	
LEVEL OF SERVICE (LOS)				**A**				**A**	

PROJECT: Anaheim
SCENARIO: Existing + Cumulative
INTERSECTION: 62 Brookhurst St / Broadway

		AM PEAK HOUR			PM PEAK HOUR		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**	**CAPACITY**	**VOLUME**	**V/C**
NBL	1.0	1,700	30	0.02	1,700	85	0.05
NBT	3.0	5,100	965	0.21 *	5,100	1,305	0.29 *
NBR	0.0		115	0.00		160	0.00
SBL	1.0	1,700	45	0.03 *	1,700	95	0.06 *
SBT	3.0	5,100	870	0.18	5,100	1,300	0.28
SBR	0.0		60	0.00		105	0.00
EBL	1.0	1,700	90	0.05	1,700	70	0.04
EBT	2.0	3,400	360	0.12 *	3,400	295	0.10 *
EBR	0.0		40	0.00		60	0.00
WBL	1.0	1,700	115	0.07 *	1,700	175	0.10 *
WBT	2.0	3,400	250	0.09	3,400	445	0.16
WBR	0.0		65	0.00		90	0.00
		N/S Movements		0.24			0.34
		E/W Movements		0.19			0.21
		Rt. Turn Component		0.00			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				**0.47**			**0.60**
LEVEL OF SERVICE (LOS)				**A**			**A**

PROJECT:		**Anaheim**						
SCENARIO:		**Existing + Cumulative + Project**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0	1,700	27	0.02		1,700	88	0.05	
NBT	3.0	5,100	965	0.21	*	5,100	1,305	0.29	*
NBR	0.0		115	0.00			160	0.00	
SBL	1.0	1,700	45	0.03	*	1,700	95	0.06	*
SBT	3.0	5,100	870	0.18		5,100	1,300	0.28	
SBR	0.0		52	0.00			111	0.00	
EBL	1.0	1,700	92	0.05		1,700	72	0.04	
EBT	2.0	3,400	364	0.12	*	3,400	299	0.11	*
EBR	0.0		41	0.00			61	0.00	
WBL	1.0	1,700	115	0.07	*	1,700	175	0.10	*
WBT	2.0	3,400	237	0.09		3,400	454	0.16	
WBR	0.0		65	0.00			90	0.00	
		N/S Movements		0.24				0.34	
		E/W Movements		0.19				0.21	
		Rt. Turn Component		0.00				0.00	
		Yellow Clearance		0.05				0.05	
TOTAL CAPACITY UTILIZATION				**0.48**				**0.60**	
LEVEL OF SERVICE (LOS)				**A**				**A**	

PROJECT:		**Anaheim**						
SCENARIO:		**Opening Year + Cumulative**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0	1,700	35	0.02		1,700	90	0.05	
NBT	3.0	5,100	990	0.22	*	5,100	1,335	0.29	*
NBR	0.0		115	0.00			160	0.00	
SBL	1.0	1,700	45	0.03	*	1,700	95	0.06	*
SBT	3.0	5,100	890	0.19		5,100	1,325	0.28	
SBR	0.0		65	0.00			110	0.00	
EBL	1.0	1,700	90	0.05		1,700	75	0.04	
EBT	2.0	3,400	365	0.12	*	3,400	300	0.11	*
EBR	0.0		45	0.00			60	0.00	
WBL	1.0	1,700	120	0.07	*	1,700	180	0.11	*
WBT	2.0	3,400	260	0.10		3,400	455	0.16	
WBR	0.0		70	0.00			95	0.00	
		N/S Movements		0.24				0.35	
		E/W Movements		0.19				0.21	
		Rt. Turn Component		0.00				0.00	
		Yellow Clearance		0.05				0.05	
TOTAL CAPACITY UTILIZATION				**0.48**				**0.61**	
LEVEL OF SERVICE (LOS)				**A**				**B**	

PROJECT:		**Anaheim**						
SCENARIO:		**Opening Year + Cumulative + Project**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**	
NBL	1.0	1,700	32	0.02		1,700	93	0.05	
NBT	3.0	5,100	990	0.22	*	5,100	1,335	0.29	*
NBR	0.0		115	0.00			160	0.00	
SBL	1.0	1,700	45	0.03	*	1,700	95	0.06	*
SBT	3.0	5,100	890	0.19		5,100	1,325	0.28	
SBR	0.0		57	0.00			116	0.00	
EBL	1.0	1,700	92	0.05		1,700	77	0.05	
EBT	2.0	3,400	369	0.12	*	3,400	304	0.11	*
EBR	0.0		46	0.00			61	0.00	
WBL	1.0	1,700	120	0.07	*	1,700	180	0.11	*
WBT	2.0	3,400	247	0.09		3,400	464	0.16	
WBR	0.0		70	0.00			95	0.00	
		N/S Movements		0.24				0.35	
		E/W Movements		0.19				0.21	
		Rt. Turn Component		0.00				0.00	
		Yellow Clearance		0.05				0.05	
TOTAL CAPACITY UTILIZATION				**0.49**				**0.61**	
LEVEL OF SERVICE (LOS)				**A**				**B**	

PROJECT:		**Anaheim**						
SCENARIO:		**General Plan Buildout**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**
NBL	1.0	1,700	33	0.02	*	1,700	81	0.05 *
NBT	3.0	5,100	881	0.21		5,100	1,341	0.29
NBR	0.0		170	0.00			118	0.00
SBL	1.0	1,700	35	0.02		1,700	103	0.06
SBT	3.0	5,100	1,327	0.27	*	5,100	1,389	0.31 *
SBR	0.0		66	0.00			201	0.00
EBL	1.0	1,700	128	0.08		1,700	92	0.05 *
EBT	2.0	3,400	485	0.16	*	3,400	319	0.11
EBR	0.0		67	0.00			61	0.00
WBL	1.0	1,700	108	0.06	*	1,700	141	0.08
WBT	2.0	3,400	207	0.08		3,400	485	0.17 *
WBR	0.0		50	0.00			109	0.00
		N/S Movements		0.29				0.36
		E/W Movements		0.23				0.23
		Rt. Turn Component		0.00				0.00
		Yellow Clearance		0.05				0.05
TOTAL CAPACITY UTILIZATION				**0.57**				**0.64**
LEVEL OF SERVICE (LOS)				**A**				**B**

PROJECT:		**Anaheim**						
SCENARIO:		**General Plan Buildout + Project**						
INTERSECTION:		**62**	**Brookhurst St / Broadway**					
			AM PEAK HOUR			**PM PEAK HOUR**		
MOVEMENT	**LANES**	**CAPACITY**	**VOLUME**	**V/C**		**CAPACITY**	**VOLUME**	**V/C**
NBL	1.0	1,700	32	0.02	*	1,700	83	0.05 *
NBT	3.0	5,100	880	0.21		5,100	1,340	0.29
NBR	0.0		170	0.00			120	0.00
SBL	1.0	1,700	35	0.02		1,700	105	0.06
SBT	3.0	5,100	1,325	0.27	*	5,100	1,390	0.31 *
SBR	0.0		57	0.00			206	0.00
EBL	1.0	1,700	132	0.08		1,700	92	0.05 *
EBT	2.0	3,400	489	0.16	*	3,400	324	0.11
EBR	0.0		66	0.00			61	0.00
WBL	1.0	1,700	110	0.06	*	1,700	140	0.08
WBT	2.0	3,400	192	0.07		3,400	494	0.18 *
WBR	0.0		50	0.00			110	0.00
		N/S Movements		0.29				0.36
		E/W Movements		0.23				0.23
		Rt. Turn Component		0.00				0.00
		Yellow Clearance		0.05				0.05
TOTAL CAPACITY UTILIZATION				**0.57**				**0.64**
LEVEL OF SERVICE (LOS)				**A**				**B**

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	417	2	2	315	7	3	0	3	22	0	7
Future Vol, veh/h	2	417	2	2	315	7	3	0	3	22	0	7
Conflicting Peds, #/hr	5	0	3	5	0	7	3	0	5	7	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	2	469	2	2	354	8	3	0	3	25	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	476	0	0	665	852	248	615	849	193
Stage 1	-	-	-	-	-	-	479	479	-	369	369	-
Stage 2	-	-	-	-	-	-	186	373	-	246	480	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.21	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1201	-	-	1090	-	-	349	299	758	379	300	822
Stage 1	-	-	-	-	-	-	542	558	-	629	624	-
Stage 2	-	-	-	-	-	-	804	622	-	742	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1193	-	-	1085	-	-	341	294	749	371	295	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	437	399	-	474	400	-
Stage 1	-	-	-	-	-	-	539	554	-	624	618	-
Stage 2	-	-	-	-	-	-	791	616	-	733	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	11.6	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	552	1193	-	-	1085	-	-	527
HCM Lane V/C Ratio	0.012	0.002	-	-	0.002	-	-	0.062
HCM Control Delay (s)	11.6	8	-	-	8.3	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	388	3	7	531	23	0	0	2	14	0	4
Future Vol, veh/h	8	388	3	7	531	23	0	0	2	14	0	4
Conflicting Peds, #/hr	7	0	4	6	0	9	4	0	6	9	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	431	3	8	590	26	0	0	2	16	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	625	0	0	440	0	0	775	1098	232	871	1086	324
Stage 1	-	-	-	-	-	-	457	457	-	628	628	-
Stage 2	-	-	-	-	-	-	318	641	-	243	458	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.21	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	959	-	-	1131	-	-	291	215	776	248	218	678
Stage 1	-	-	-	-	-	-	558	571	-	442	479	-
Stage 2	-	-	-	-	-	-	673	473	-	745	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	951	-	-	1125	-	-	282	208	765	240	211	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	399	323	-	345	327	-
Stage 1	-	-	-	-	-	-	550	562	-	434	471	-
Stage 2	-	-	-	-	-	-	659	465	-	729	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	9.7	14.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	765	951	-	-	1125	-	-	387
HCM Lane V/C Ratio	0.003	0.009	-	-	0.007	-	-	0.052
HCM Control Delay (s)	9.7	8.8	-	-	8.2	-	-	14.8
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	425	0	0	320	7	5	0	5	22	0	7
Future Vol, veh/h	2	425	0	0	320	7	5	0	5	22	0	7
Conflicting Peds, #/hr	5	0	3	5	0	7	3	0	5	7	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	2	478	0	0	360	8	6	0	6	25	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	375	0	0	483	0	0	672	862	251	621	858	196
Stage 1	-	-	-	-	-	-	487	487	-	371	371	-
Stage 2	-	-	-	-	-	-	185	375	-	250	487	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.21	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1195	-	-	1083	-	-	345	295	755	376	297	819
Stage 1	-	-	-	-	-	-	536	554	-	627	623	-
Stage 2	-	-	-	-	-	-	805	621	-	738	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1187	-	-	1078	-	-	338	291	746	368	293	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	433	397	-	472	399	-
Stage 1	-	-	-	-	-	-	533	550	-	622	619	-
Stage 2	-	-	-	-	-	-	793	617	-	726	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11.7	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	548	1187	-	-	1078	-	-	525
HCM Lane V/C Ratio	0.021	0.002	-	-	-	-	-	0.062
HCM Control Delay (s)	11.7	8	-	-	0	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	395	5	5	535	23	0	0	0	14	0	4
Future Vol, veh/h	8	395	5	5	535	23	0	0	0	14	0	4
Conflicting Peds, #/hr	7	0	4	6	0	9	4	0	6	9	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	439	6	6	594	26	0	0	0	16	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	629	0	0	451	0	0	782	1107	238	875	1097	326
Stage 1	-	-	-	-	-	-	466	466	-	628	628	-
Stage 2	-	-	-	-	-	-	316	641	-	247	469	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.21	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	956	-	-	1120	-	-	288	212	769	247	215	676
Stage 1	-	-	-	-	-	-	551	566	-	442	479	-
Stage 2	-	-	-	-	-	-	675	473	-	741	564	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	948	-	-	1114	-	-	279	206	758	240	209	666
Mov Cap-2 Maneuver	-	-	-	-	-	-	396	322	-	345	326	-
Stage 1	-	-	-	-	-	-	543	558	-	434	472	-
Stage 2	-	-	-	-	-	-	662	466	-	728	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	0	14.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	948	-	-	1114	-	-	386
HCM Lane V/C Ratio	-	0.009	-	-	0.005	-	-	0.052
HCM Control Delay (s)	0	8.8	-	-	8.2	-	-	14.8
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	435	0	0	325	7	5	0	5	22	0	7
Future Vol, veh/h	2	435	0	0	325	7	5	0	5	22	0	7
Conflicting Peds, #/hr	5	0	3	5	0	7	3	0	5	7	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	2	489	0	0	365	8	6	0	6	25	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	494	0	0	686	878	257	632	874	199
Stage 1	-	-	-	-	-	-	498	498	-	376	376	-
Stage 2	-	-	-	-	-	-	188	380	-	256	498	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.21	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1190	-	-	1073	-	-	338	289	748	369	290	815
Stage 1	-	-	-	-	-	-	528	548	-	623	620	-
Stage 2	-	-	-	-	-	-	801	617	-	732	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1182	-	-	1068	-	-	331	285	739	361	286	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	426	392	-	466	393	-
Stage 1	-	-	-	-	-	-	525	544	-	618	616	-
Stage 2	-	-	-	-	-	-	789	613	-	720	544	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11.8	12.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	540	1182	-	-	1068	-	-	519
HCM Lane V/C Ratio	0.021	0.002	-	-	-	-	-	0.063
HCM Control Delay (s)	11.8	8.1	-	-	0	-	-	12.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	400	5	5	550	23	0	0	0	14	0	4
Future Vol, veh/h	8	400	5	5	550	23	0	0	0	14	0	4
Conflicting Peds, #/hr	7	0	4	6	0	9	4	0	6	9	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	444	6	6	611	26	0	0	0	16	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	646	0	0	456	0	0	796	1129	240	894	1119	335
Stage 1	-	-	-	-	-	-	471	471	-	645	645	-
Stage 2	-	-	-	-	-	-	325	658	-	249	474	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.21	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	942	-	-	1115	-	-	281	206	767	239	209	667
Stage 1	-	-	-	-	-	-	548	563	-	432	471	-
Stage 2	-	-	-	-	-	-	667	464	-	739	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	934	-	-	1109	-	-	273	200	756	232	203	657
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	316	-	338	321	-
Stage 1	-	-	-	-	-	-	540	554	-	424	464	-
Stage 2	-	-	-	-	-	-	655	458	-	726	552	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	0	15
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	934	-	-	1109	-	-	379
HCM Lane V/C Ratio	-	0.01	-	-	0.005	-	-	0.053
HCM Control Delay (s)	0	8.9	-	-	8.3	-	-	15
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	475	0	0	360	7	5	0	5	22	0	7
Future Vol, veh/h	2	475	0	0	360	7	5	0	5	22	0	7
Conflicting Peds, #/hr	5	0	3	5	0	7	3	0	5	7	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	2	534	0	0	404	8	6	0	6	25	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	539	0	0	750	962	279	693	958	218
Stage 1	-	-	-	-	-	-	543	543	-	415	415	-
Stage 2	-	-	-	-	-	-	207	419	-	278	543	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.21	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1151	-	-	1032	-	-	304	258	724	334	259	792
Stage 1	-	-	-	-	-	-	497	523	-	591	596	-
Stage 2	-	-	-	-	-	-	781	593	-	711	523	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1143	-	-	1027	-	-	298	254	716	327	255	783
Mov Cap-2 Maneuver	-	-	-	-	-	-	398	367	-	438	368	-
Stage 1	-	-	-	-	-	-	494	519	-	586	592	-
Stage 2	-	-	-	-	-	-	769	589	-	699	519	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.2	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	512	1143	-	-	1027	-	-	490
HCM Lane V/C Ratio	0.022	0.002	-	-	-	-	-	0.066
HCM Control Delay (s)	12.2	8.2	-	-	0	-	-	12.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	415	5	10	570	23	0	0	0	14	0	4
Future Vol, veh/h	8	415	5	10	570	23	0	0	0	14	0	4
Conflicting Peds, #/hr	7	0	4	6	0	9	4	0	6	9	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	0	0	0	0	0	0	0	0	0
Mvmt Flow	9	461	6	11	633	26	0	0	0	16	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	668	0	0	473	0	0	834	1178	249	935	1168	346
Stage 1	-	-	-	-	-	-	488	488	-	677	677	-
Stage 2	-	-	-	-	-	-	346	690	-	258	491	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.21	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	924	-	-	1099	-	-	264	192	757	223	195	656
Stage 1	-	-	-	-	-	-	535	553	-	414	455	-
Stage 2	-	-	-	-	-	-	649	449	-	730	552	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	916	-	-	1093	-	-	255	185	746	216	188	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	302	-	323	306	-
Stage 1	-	-	-	-	-	-	527	544	-	407	446	-
Stage 2	-	-	-	-	-	-	634	440	-	717	543	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	0	15.5
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	916	-	-	1093	-	-	363
HCM Lane V/C Ratio	-	0.01	-	-	0.01	-	-	0.055
HCM Control Delay (s)	0	9	-	-	8.3	-	-	15.5
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Appendix D: Trip Generation

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2323 W Broadway Project Trip Generation

Land Use	Setting	Size	Units	Equation[1]	Avg. Rate[1]	Inbound %	Trips Inbound	Trips Outbound	Trips Total
Proposed Use									
Multifamily (Mid-Rise) (LU 221)		**112**	du						
Daily	General Urban/Suburban			T = 5.45X - 1.75	-	50%	305	305	610
AM Peak Hour	General Urban/Suburban			Ln(T) = 0.98*Ln(X) - 0.98	-	23%	9	29	38
PM Peak Hour	General Urban/Suburban			Ln(T) = 0.96*Ln(X) - 0.63	-	63%	31	18	49
Existing Use									
High School (LU 530)		**120**	students						
Daily	General Urban/Suburban			-	2.03	50%	122	122	244
AM Peak Hour	General Urban/Suburban			-	0.52	67%	42	20	62
PM Peak Hour	General Urban/Suburban			-	0.14	48%	8	9	17
Net New Trips									
Daily							183	183	366
AM Peak Hour							-33	9	-24
PM Peak Hour							23	9	32

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation* 10th Edition equation and average trip rate as shown above.