

ACCESS ANALYSIS
AIRWAY LOGISTICS CENTER
City of San Diego, California
October 23, 2020
PTS 665589

LLG Ref. 3-20-3219

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EXECUTIVE SUMMARY

Linscott, Law & Greenspan Engineers (LLG) has prepared this access analysis to assess the potential impacts associated with the Badiée Airway Industrial Project (“Project”) in the Otay Mesa Community within the City of San Diego. The Project site is a vacant site zoned IBT-1-1 located on the south side of Airway Road, west of La Media Road and east of Britannia Boulevard in the Otay Mesa Community in the City of San Diego. The project requires a Site Development Permit.

The Project proposes the construction of 235,480 square feet (sf) of warehousing and distribution use for up to eight (8) tenants, and 12,000 sf of multi-tenant office use, for a total of 247,480 sf. The Project site is located on the south side of Airway Road, west of La Media Road, east of Britannia Boulevard in the Otay Mesa Community in the City of San Diego. Access to the site is proposed via two (2) driveways along Airway Road. The proposed Project land uses were deemed consistent with the Otay Mesa Community Plan and therefore, the Proposed Project will be preparing an Addendum to the approved Otay Mesa Community Plan EIR, and thereby focuses on Level of Service as the appropriate CEQA metric to evaluate transportation impacts.

Existing traffic counts for the project were developed using available Year 2019 counts and historical counts from approved projects in the area using a growth factor to reflect a Year 2019 traffic volume baseline.

Based on the proposed land use types, the rates for “warehousing” and “commercial office” found in the City of San Diego’s *Trip Generation Manual, May 2003* were used for the proposed Project. The total Project is calculated to generate approximately 1,518 ADT with 222 trips (165 inbound / 57 outbound) during the AM peak hour and 237 trips (86 inbound / 151 outbound) during the PM peak hour. Access to the Project site is proposed via two (2) driveways on Airway Road. The eastern driveway will be used by trucks accessing the site while the western driveway will be used by light vehicles. Project traffic was distributed and assigned to the street system based on the number of loading docks (66), existing traffic patterns in the area, review of trip distribution of similar land uses from recently approved development projects in the vicinity, anticipated traffic patterns to and from the site, and the Project’s proximity to state highways and arterials.

A total of eighteen (18) cumulative projects were identified for consideration in the Near-Term (Opening Year 2021) scenarios.

Based on the City of San Diego’s significance criteria, a **significant direct project impact** is identified on the following segment as the project traffic contribution exceeds the allowable threshold.

- La Media Road, from SR 905 EB Ramps to Airway Road (LOS E)

Mitigation Measure MM-TRA-1: To mitigate the project’s impact to below a level of significance, the project will widen La Media Road on the east side to construct a second northbound through lane from Airway Road to approximately 600 feet north of Airway Road, where the road is already widened to three through lanes. This mitigation measure has already been proposed as part of the La

Media Retail TIS. This mitigation will be permitted and bonded prior to the issuance of the first building permit and will be constructed prior to the issuance of certificate of occupancy.

As a part of the Project frontage improvements, consistent with the Airway Road ultimate classification of a 4-lane Major (76 feet curb-to-curb), per the City of San Diego Street Design Manual, the Project is proposing to widen Airway Road along the Project frontage by 39 feet from the centerline and provide a 21-foot parkway (7-foot non-contiguous sidewalk and 15-foot parkway) to provide the ultimate roadway width. The Project proposes to construct the frontage improvements and relocate the curb to the south similar to the neighboring properties to the west. While the ultimate width would be provided for a raised median, it is noted that there are currently no raised medians on Airway Road along this stretch. Therefore, the project proposes to maintain the existing 2-lanes (with no median) on its frontage along Airway Road. Consistent with the adjacent properties on Airway Road, the westerly driveway would allow full movements until the time raised median is constructed on Airway Road.

The City of San Diego minimum parking requirements for the proposed project were also evaluated. The project meets the City's parking requirements and it is concluded that sufficient parking will be provided on the project site.

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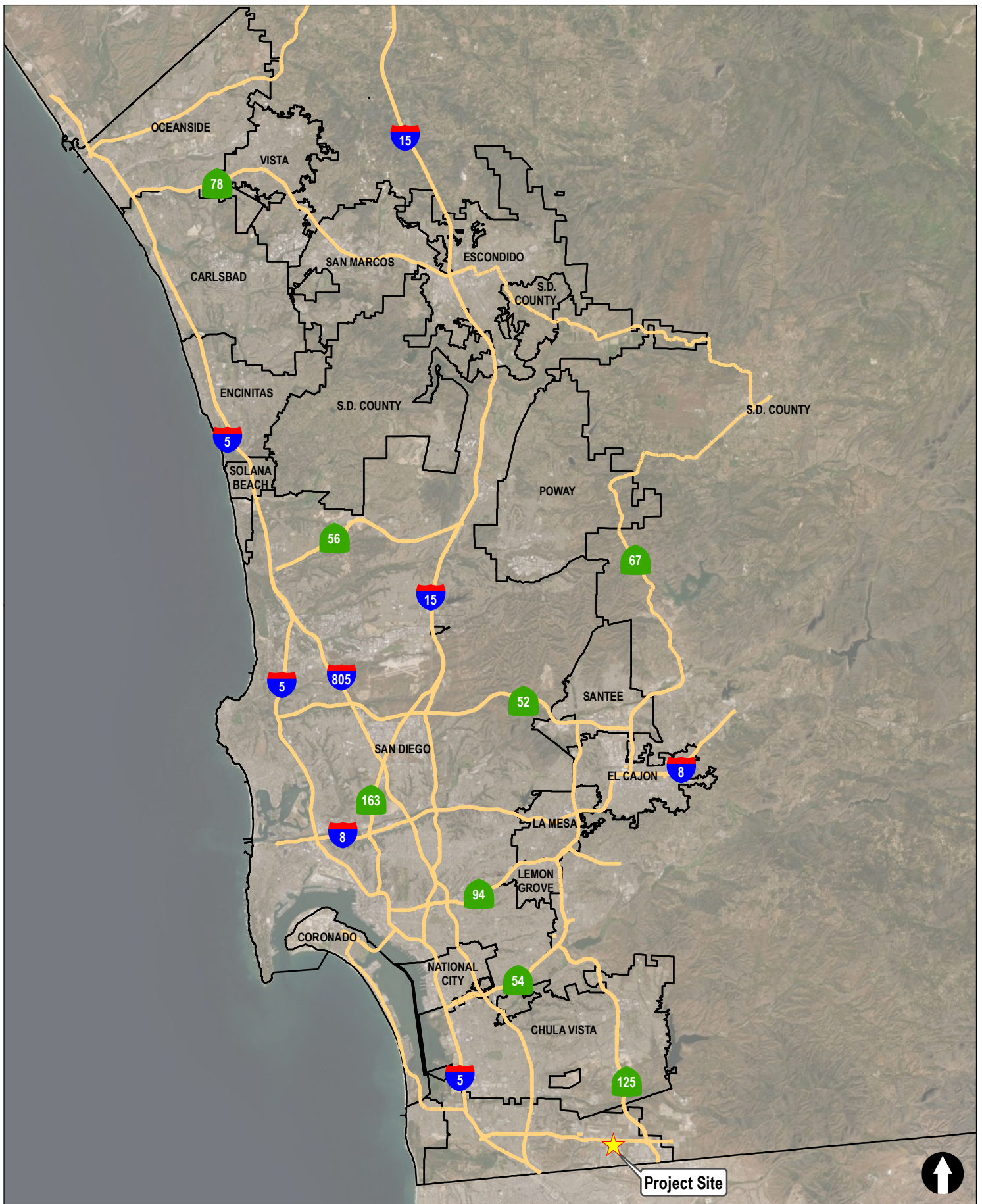
ACCESS ANALYSIS
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1.0 INTRODUCTION

Linscott, Law & Greenspan Engineers (LLG) has prepared this access analysis to assess the potential impacts associated with the Airway Logistics Center (“Project”) in the Otay Mesa Community within the City of San Diego. The Project site is vacant site zoned IBT-1-1 located on the south side of Airway Road, west of La Media Road and east of Britannia Boulevard in the Otay Mesa Community in the City of San Diego. The project requires a Site Development Permit. *Figure 1-1* shows the vicinity map. *Figure 1-2* shows a more detailed project area map.

The following items are included in this access analysis:

- Project Description
- Existing Conditions Discussion
- Analysis Approach and Methodology
- Significance Criteria
- Existing Conditions Analysis
- Cumulative Projects Discussion
- Trip Generation/Distribution/Assignment
- Near-Term Analysis
- Site Access and Active Transportation
- Parking
- Significant Project Impacts and Mitigation Measures



Project Site



Figure 1-1

Vicinity Map

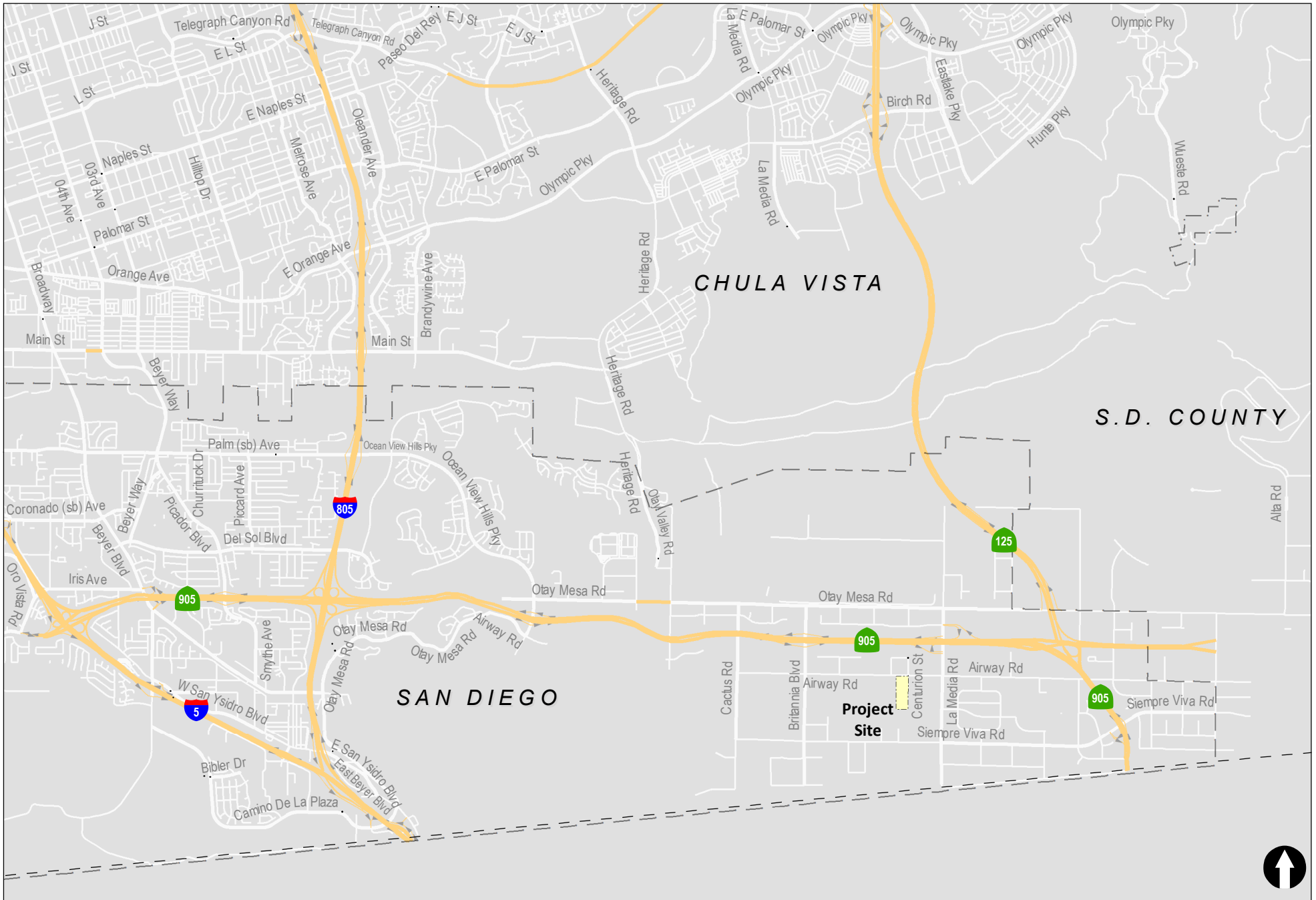


Figure 1-2
Project Area Map

2.0 PROJECT DESCRIPTION

The Project proposes the construction of 235,480 square feet (sf) of warehousing and distribution use for up to eight (8) tenants, and 12,000 sf of multi-tenant office use, for a total of 247,480 sf. The Project site is located on the south side of Airway Road, west of La Media Road, east of Britannia Boulevard in the Otay Mesa Community in the City of San Diego. Access to the site is proposed via two (2) driveways along Airway Road. The proposed Project land uses were deemed consistent with the Otay Mesa Community Plan and therefore, the Proposed Project will be preparing an Addendum to the approved Otay Mesa Community Plan EIR, and thereby focuses on Level of Service as the appropriate CEQA metric to evaluate transportation impacts. *Figure 2-1* shows the proposed site plan.

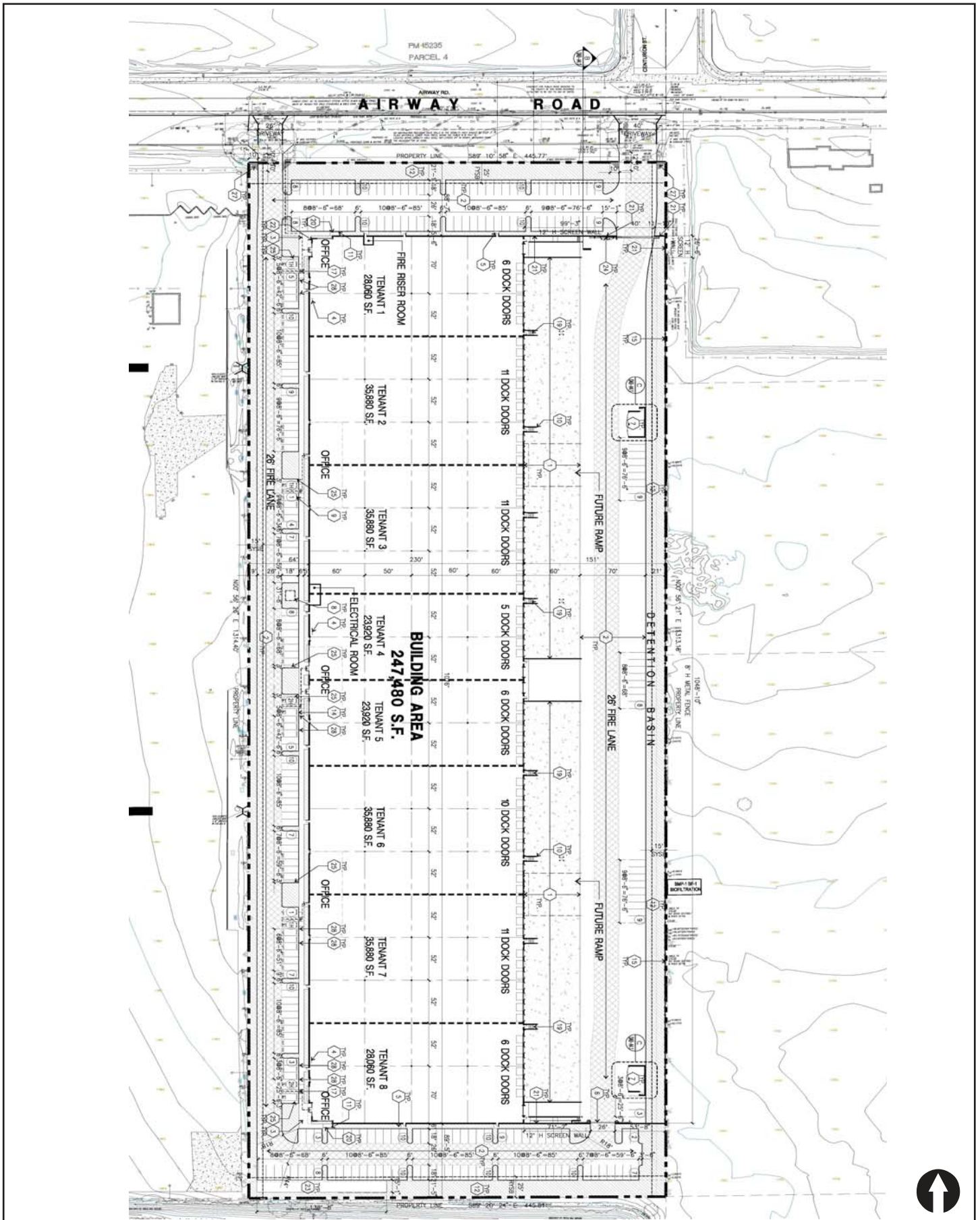


Figure 2-1
Site Plan

3.0 EXISTING CONDITIONS

Evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. *Figure 3-1* shows an existing conditions diagram, including intersection traffic control type and lane configurations. The study area includes the following intersections and street segments based on the anticipated distribution of the project traffic:

Intersections:

1. Britannia Boulevard / SR 905 WB Ramps
2. Britannia Boulevard / SR 905 EB Ramps
3. La Media Road / SR 905 WB Ramps
4. La Media Road / SR 905 EB Ramps
5. Airway Road / Britannia Boulevard
6. Airway Road / Project Driveway (west) (*Does not Exist*)
7. Airway Road / Centurion Street / Project Driveway (east) (*Does not Exist*)
8. Airway Road / La Media Road

Segments:

Britannia Boulevard

- SR 905 WB Ramps to SR 905 EB Ramps
- SR 905 EB Ramps to Airway Road

La Media Road

- SR 905 WB Ramps/St. Andrews Avenue to SR 905 EB Ramps
- SR 905 EB Ramps to Airway Road

Airway Road

- Britannia Boulevard to Project Driveway (west)
- Project Driveway (west) to Centurion Street/Project Driveway (east)
- Centurion Street/Project Driveway (east) to La Media Road

3.1 Existing Street Network

The following is a description of the existing street network in the study area.

State Route 905 (SR 905) is a 6-lane freeway that provides a direct east-west connection from I-805 to the Otay Mesa Port of Entry. The posted speed limit is 65mph.

Airway Road is currently constructed as a 2-lane Collector between Britannia Boulevard and La Media Road. Airway Road between Britannia Boulevard and La Media Road is classified as a 4-lane Major Road in the City's *Otay Mesa Community Plan Mobility Element*. Curbside parking is

prohibited, and bike lanes are not provided. Per the Otay Mesa Community Plan, Class II bicycle lanes are proposed on Airway Road. Contiguous sidewalks are provided intermittently on Airway Road between Britannia Boulevard and La Media Road. The current curb-to-curb width is 38' with curb and gutter provided on the north side and intermittently on the south side. A bus stop for MTS Route 909 are located on Airway Road within ¼ mile of the project site. The posted speed limit is 35 mph.

Britannia Boulevard is currently constructed as a 6-lane Prime Arterial between SR 905 WB Ramps and SR 905 EB Ramps and as a 5-lane (3 southbound lanes and 2 northbound lanes) Major Arterial between SR 905 EB Ramps and and Airway Road. Britannia Boulevard is classified as a 6-lane Prime Arterial from SR 905 to Airway Road in the City's *Otay Mesa Community Plan Mobility Element*. Curbside parking is prohibited. Bike lanes are provided in both directions. Contiguous sidewalks are provided on both sides of Britannia Boulevard between SR 905 and Airway Road. Bus stops for MTS Route 909 are provided on the Britannia Boulevard, approximately 160' south of Otay Mesa Road. The posted speed limit is 40 mph.

La Media Road is currently constructed as a 6-lane Prime Arterial between SR 905 WB Ramps and SR 905 EB Ramps and as a 3-lane Collector (2 southbound lanes and 1 northbound lane) between SR 905 EB Ramps and Airway Road. La Media Road is classified as a 6-lane Prime Arterial from SR 905 to Airway Road in the City's *Otay Mesa Community Plan Mobility Element*. Curbside parking is prohibited. Bike lanes are provided on both sides of La Media Road between Otay Mesa Road and SR 905 EB ramps; however, only a southbound bike lane exists between SR 905 EB ramps and Airway Road. Contiguous sidewalks are provided on both sides of La Media Road between Otay Mesa Road and SR 905 EB ramps; however, a sidewalk exists only on the west side of La Media Road between SR 905 EB ramps and Airway Road. Bus stops for MTS Route 905 are provided on La Media Road. The posted speed limit is 35 mph.

3.2 Existing Traffic Volumes

Given the changes in travel patterns and lower activity due to the CoVid-19 pandemic, existing traffic counts were unable to be conducted. Therefore, historical traffic count data was obtained and used for the proposed project as explained below.

Britannia Boulevard Corridor – Year 2019 (May 22, 2019, Wednesday) traffic counts were available for the listed street segments and intersections below and used as counted as they are within a two-year timeframe and considered current:

- Britannia Boulevard between SR 905 EB Ramps and Airway Road
- Britannia Boulevard / SR 905 WB Ramps Intersection
- Britannia Boulevard / SR 905 EB Ramps Intersection
- Britannia Boulevard / Airway Road Intersection

La Media Road and Airway Road Corridor – The traffic counts from development projects that were recently approved or currently in process were reviewed. These include the approved Sunroad Transportation Impact Study (February 2018) and, Plaza La Media Retail TIS (pending approval, March 13, 2020).

The traffic counts from the above projects were conducted in 2015 and 2016. Based on a comparison of street segment counts along La Media Road (from SR 905 and Airway Road) between the Years 2015/2016 and 2019, a growth rate of 1.6% per year was calculated. Therefore, a growth rate of 2% per year was used and applied to the Year 2016 intersection counts for the SR 905 WB and SR 905 EB Ramps/ La Media Road intersection from the Plaza La Media Retail TIS to reflect a Year 2019 traffic volume baseline.

Similarly, on Airway Road, east of La Media Road, based on a comparison of 2019 count and 2015 count, a growth rate of -4.8% per year was calculated. However, to be conservative, a growth rate of 2% per year was used and applied to the Year 2015 counts for the La Media Road / Airway Road intersection and Airway Road segment between Britannia Boulevard and La Media Road from the Plaza La Media Retail TIS to reflect a Year 2019 traffic volume baseline to ensure traffic volumes as they are within a two-year timeframe and considered current.

Historical traffic count data was unavailable at the Airway Road / Centurion Street intersection. Therefore, traffic volumes at this intersection were forecasted based on the adjacent land use and balanced with the traffic volumes at the adjacent Airway Road / La Media Road intersection.

Figure 3–2 shows the Existing Traffic Volumes. **Appendix A** contains the count sheets, the historical count comparison, and the Centurion Street volumes forecast.

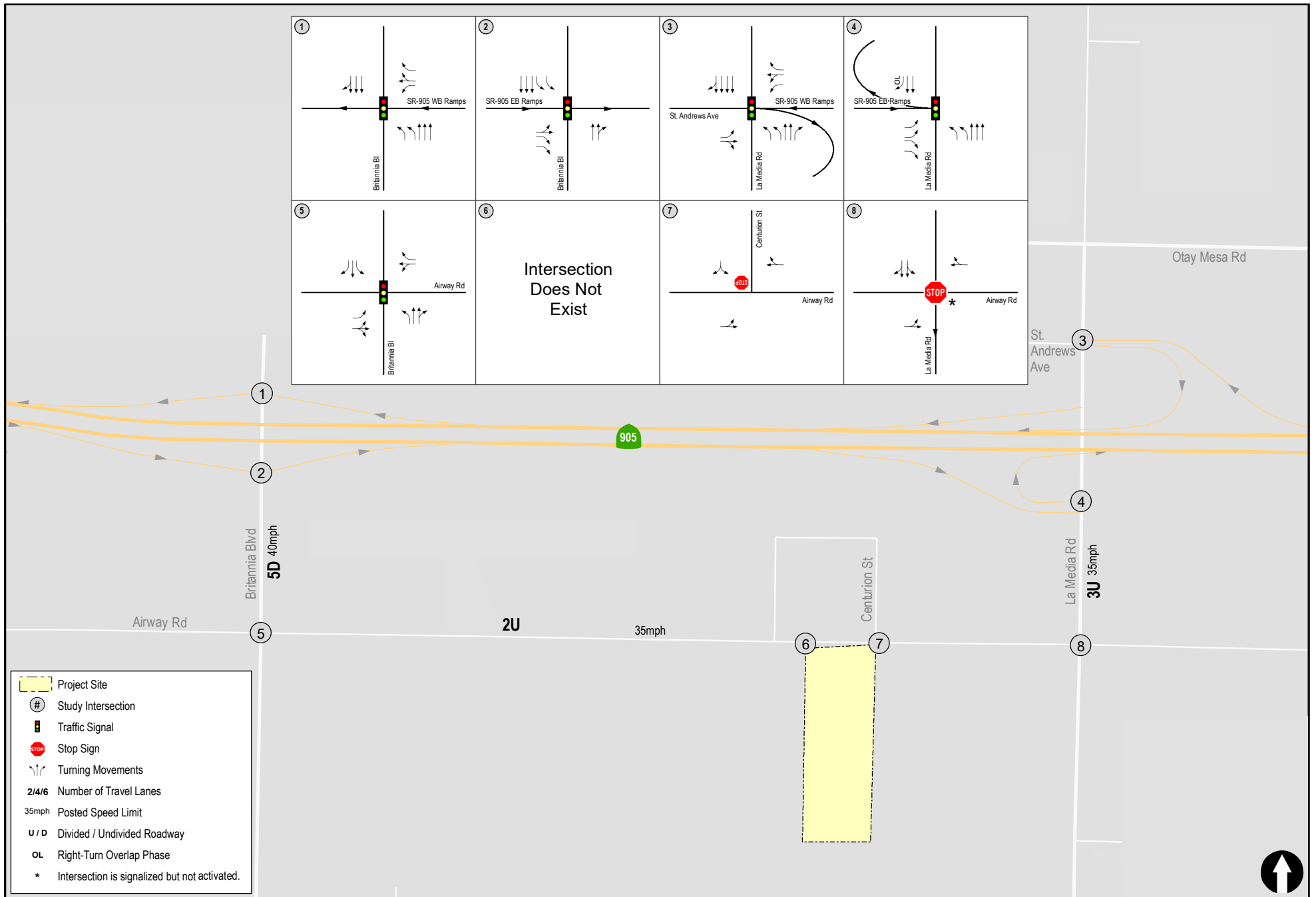


Figure 3-1

Existing Conditions Diagram

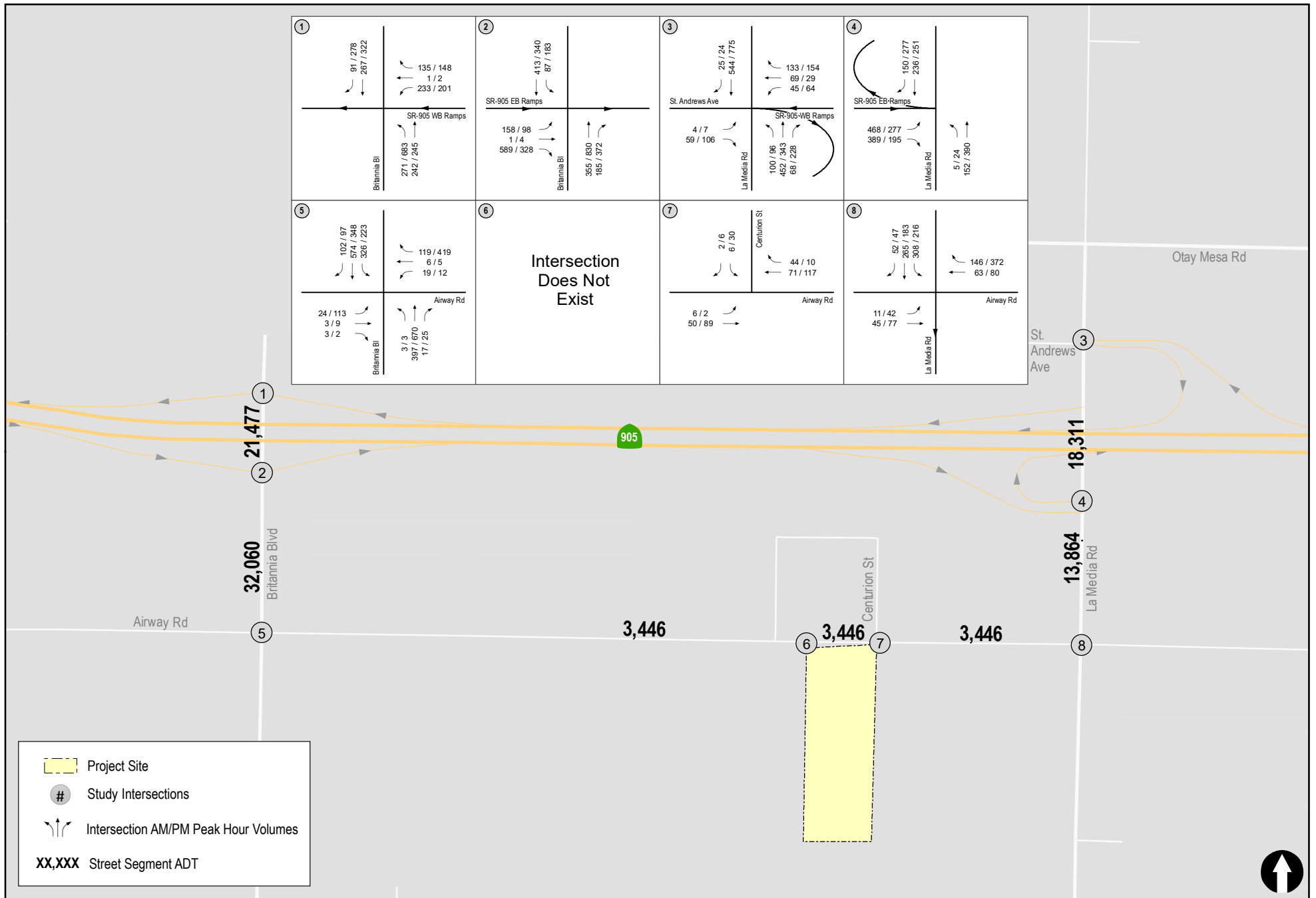


Figure 3-2

Existing Traffic Volumes

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4.0 ANALYSIS APPROACH AND METHODOLOGY

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.1 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 19 of the *Highway Capacity Manual 6th Edition (HCM 6)*, with the assistance of the *Synchro 10* computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B*.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 20 of the *Highway Capacity Manual 6th Edition (HCM 6)*, with the assistance of the *Synchro 10* computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B*.

Vehicle classification counts were reviewed from the Sunroad Otay Mesa Transportation Impact Analysis (February 2018). Based on the vehicle classification counts and to maintain consistency with other transportation studies conducted in the area, a 16% heavy vehicle factor was applied to all study intersections for this analysis.

4.2 Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of San Diego's *Roadway Classification, Level of Service, and ADT Table* is attached in *Appendix C*.

5.0 SIGNIFICANCE CRITERIA

According to the City of San Diego's *Significance Determination Thresholds* dated July 2016, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. The City defined thresholds are shown in **Table 5-1**.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds*,

"Direct traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."

"Cumulative traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."

It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5-1*, then the project is considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5-1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

**TABLE 5-1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS**

Level of Service with Project^b	Allowable Increase Due to Project Impacts^a	
	Roadway Segments	Intersections
	V/C	Delay (sec.)
E	0.02	2.0
F	0.01	1.0

Footnotes:

- a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.
- b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for roadways and intersections is generally "D" ("C" for undeveloped locations).

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections or minutes for ramp meters
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 Peak Hour Intersection Levels of Service

Table 6-1 summarizes the peak hour intersection operations under Existing conditions. As seen in *Table 6-1*, the study intersections are calculated to currently operate at LOS D or better.

Appendix D contains the existing intersection analysis worksheets.

6.2 Daily Street Segment Levels of Service

Table 6-2 summarizes the street segment operations under the Existing conditions. As seen in *Table 6-2*, the following study segment is calculated to currently operate at LOS E:

- La Media Road, from SR 905 EB Ramps to Airway Road

**TABLE 6-1
EXISTING INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
1. Britannia Boulevard / SR 905 WB Ramps	Signal	AM	29.5	C
		PM	27.4	C
2. Britannia Boulevard / SR 905 EB Ramps	Signal	AM	25.6	C
		PM	25.4	C
3. La Media Road / SR 905 WB Ramps	Signal	AM	21.2	C
		PM	23.0	C
4. La Media Road / SR 905 EB Ramps	Signal	AM	26.3	C
		PM	17.8	B
5. Airway Road / Britannia Boulevard	Signal	AM	25.8	C
		PM	44.0	D
6. Airway Road / Project Driveway (west, DNE ¹)	TWSC ^c	AM	–	–
		PM	–	–
7. Airway Road / Centurion Street / Project Driveway (east, DNE ¹)	OWSC ^d / TWSC ^c	AM	9.8	A
		PM	10.5	B
8. Airway Road / La Media Road ^e	AWSC ^f	AM	17.6	C
		PM	17.8	C

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. TWSC – Two-Way Stop Controlled intersection. Worst movement delay is reported.
- d. OWSC – One-Way Stop Controlled intersection. Worst movement delay is reported.
- e. A traffic signal is in place at this intersection, however, it is not in operation. Therefore, it is analyzed as an all-way stop controlled intersection.
- f. AWSC – All-Way Stop Controlled intersection. Average delay is reported.

General Notes:

- 1. DNE – Project driveways do not currently exist.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

**TABLE 6-2
EXISTING STREET SEGMENT OPERATIONS**

Street Segment	Classification	Capacity (LOS E) ^a	ADT ^b	LOS ^c	V/C ^d
Britannia Boulevard					
SR 905 WB Ramps to SR 905 EB Ramps	6-lane Prime Arterial	60,000	21,477	A	0.358
SR 905 EB Ramps to Airway Road	5-lane Major Arterial	45,000	32,060	C	0.712
La Media Road					
SR 905 WB Ramps/St. Andrews Ave. to SR 905 EB Ramps	6-lane Prime Arterial	60,000	18,311	A	0.305
SR 905 EB Ramps to Airway Road	3-lane Collector	15,000	13,864	E	0.924
Airway Road					
Britannia Boulevard to Project Driveway (west)	2-Lane Collector (with commercial fronting)	8,000	3,446	B	0.431
Project Driveway (west) to Centurion Street/Project Driveway (east)	2-Lane Collector (with commercial fronting)	8,000	3,446	B	0.431
Centurion Street/Project Driveway (east) to La Media Road	2-Lane Collector (with commercial fronting)	8,000	3,446	B	0.431

Footnotes:

- a. Capacities based on City of San Diego's Roadway Classification Table.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

7.1 Trip Generation

The Project proposes the construction of 235,480 square feet (sf) of warehousing and distribution use for up to eight (8) tenants, and 12,000 sf of multi-tenant office use. Based on the proposed land use types, the rates for “warehousing” and “commercial office” found in the City of San Diego’s *Trip Generation Manual, May 2003* were used for the proposed Project.

Table 7-1 tabulates the total Project traffic generation. The total Project is calculated to generate approximately 1,518 ADT with 222 trips (165 inbound / 57 outbound) during the AM peak hour and 237 trips (86 inbound / 151 outbound) during the PM peak hour.

TABLE 7-1
PROJECT TRIP GENERATION

Land Use	Size		Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour						
			Rate ^a	Volume	% of ADT	In:Out		Volume			% of ADT	In:Out		Volume		
						Split	In	Out	Total	Split		In	Out	Total		
Warehousing	235.48	KSF	5 /KSF	1,178	15%	70:30	124	53	177	16%	40:60	76	113	189		
Commercial Office	12.00	KSF	Log formula ^b	340	13%	90:10	41	4	45	14%	20:80	10	38	48		
Total			—	1,518	—	—	165	57	222	—	—	86	151	237		

Footnotes:

a. Rate is based on City of San Diego’s Trip Generation Manual.

b. $Ln(ADT) = 0.756 Ln(KSF) + 3.95$

7.2 Trip Distribution/Assignment

Access to the Project site is proposed via two (2) driveways on Airway Road. The eastern driveway will be used by trucks accessing the site while the western driveway will be used by light vehicles. Project traffic was distributed and assigned to the street system based on the number of loading docks (66), existing traffic patterns in the area, review of trip distribution of similar land uses from recently approved development projects in the vicinity, anticipated traffic patterns to and from the site, and the Project’s proximity to state highways and arterials. **Figure 7-1** shows the Project traffic distribution. **Figure 7-2** shows the total Project traffic volumes.

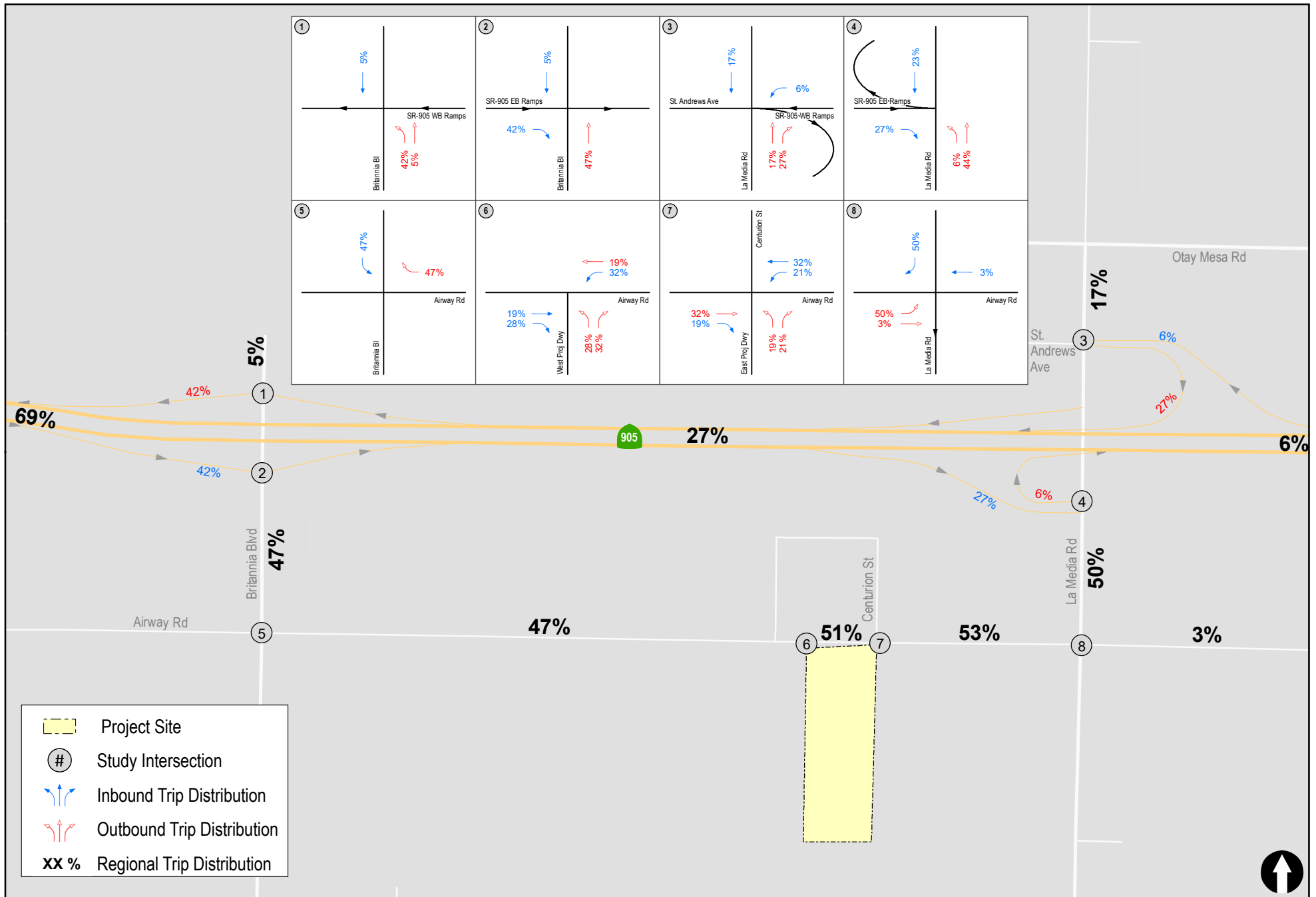


Figure 7-1

Project Trip Distribution

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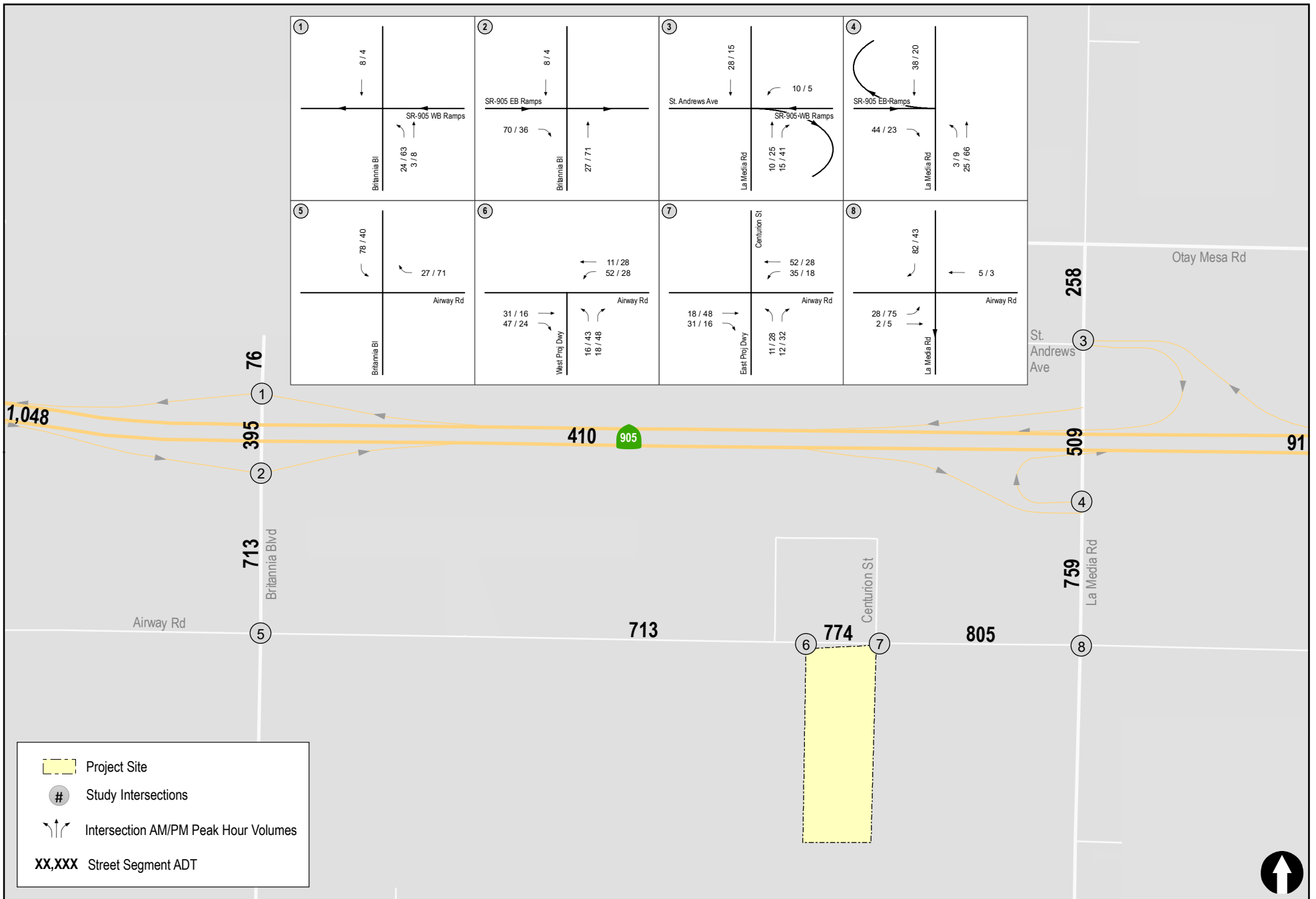


Figure 7-2

Project Traffic Volumes

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8.0 ANALYSIS OF EXISTING + PROJECT CONDITIONS

Project traffic was added onto existing traffic volumes to determine Existing + Project volumes. *Figure 8-1* shows the Existing + Project traffic volumes.

8.1 Peak Hour Intersection Levels of Service

Table 8-1 summarizes the peak hour intersection operations under the Existing + Project scenario. As seen in *Table 8-1*, with the addition of Project traffic, the study intersections are calculated to continue operating at LOS D or better.

Appendix E contains the Existing + Project intersection analysis worksheets.

8.2 Daily Street Segment Levels of Service

Table 8-2 summarizes the street segment operations under the Existing + Project scenario. As seen in *Table 8-2*, with the addition of Project traffic, the following study segment is calculated to continue operating at LOS E:

- La Media Road, from SR 905 EB Ramps to Airway Road

Based on the City of San Diego's significance criteria, a **significant direct project impact** is identified on the following segment as the project traffic contribution exceeds the allowable threshold.

- La Media Road, from SR 905 EB Ramps to Airway Road (LOS E)

Mitigation measures for these impacts are discussed in detail in *Section 12.2*.

**TABLE 8-1
EXISTING + PROJECT INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
1. Britannia Boulevard / SR 905 WB Ramps	Signal	AM	29.5	C	29.8	C	0.3	No
		PM	27.4	C	27.6	C	0.2	No
2. Britannia Boulevard / SR 905 EB Ramps	Signal	AM	25.6	C	28.5	C	2.9	No
		PM	25.4	C	30.2	C	4.8	No
3. La Media Road / SR 905 WB Ramps	Signal	AM	21.2	C	21.9	C	0.7	No
		PM	23.0	C	24.1	C	1.1	No
4. La Media Road / SR 905 EB Ramps	Signal	AM	26.3	C	26.8	C	0.5	No
		PM	17.8	B	18.3	B	0.5	No
5. Airway Road / Britannia Boulevard	Signal	AM	25.8	C	35.3	D	9.5	No
		PM	44.0	D	47.2	D	3.2	No
6. Airway Road / Project Driveway (west)	TWSC ^c	AM	DNE	–	10.3	B	–	No
		PM	DNE	–	11.0	B	–	No
7. Airway Road / Centurion Street / Project Driveway (east)	OWSC ^d / TWSC ^c	AM	9.8	A	11.1	B	1.3	No
		PM	10.5	B	12.2	B	1.7	No
8. Airway Road / La Media Road ^e	AWSC ^f	AM	17.6	C	18.5	C	0.9	No
		PM	17.8	C	19.7	C	1.9	No

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. TWSC – Two-Way Stop Controlled intersection. Worst movement delay is reported.
- d. OWSC – One-Way Stop Controlled intersection. Worst movement delay is reported.
- e. A traffic signal is in place at this intersection, however, it is not in operation. Therefore, it is analyzed as an all-way stop controlled intersection.
- f. AWSC – All-Way Stop Controlled intersection. Average delay is reported.

General Notes:

- 1. DNE – does not exist.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

TABLE 8-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Classification	Existing Capacity (LOS E) ^a	Existing			Existing + Project			Δ ^e	Sig?
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
Britannia Boulevard										
SR 905 WB Ramps to SR 905 EB Ramps	6-lane Prime Arterial	60,000	21,477	A	0.358	21,872	A	0.365	0.007	No
SR 905 EB Ramps to Airway Road	5-lane Major Arterial	45,000	32,060	C	0.712	32,773	C	0.728	0.016	No
La Media Road										
SR 905 WB Ramps / St. Andrews Ave. to SR 905 EB Ramps	6-lane Prime Arterial	60,000	18,311	A	0.305	18,820	A	0.314	0.009	No
SR 905 EB Ramps to Airway Road	3-lane Collector	15,000	13,864	E	0.924	14,623	E	0.975	0.051	Yes
Airway Road										
Britannia Boulevard to Project Driveway (west)	2-Lane Collector (with commercial fronting)	8,000	3,446	B	0.431	4,159	C	0.520	0.089	No
Project Driveway (west) to Centurion Street/Project Driveway (east)	2-Lane Collector (with commercial fronting)	8,000	3,446	B	0.431	4,220	C	0.528	0.097	No
Centurion Street/Project Driveway (east) to La Media Road	2-Lane Collector (with commercial fronting)	8,000	3,446	B	0.431	4,251	C	0.531	0.101	No

Footnotes:

- a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).
- b. Average Daily Traffic
- c. Level of Service
- d. Volume to Capacity ratio
- e. Δ denotes a project-induced increase in the Volume to Capacity ratio

General Notes:

BOLD typeface indicates a potentially significant impact.

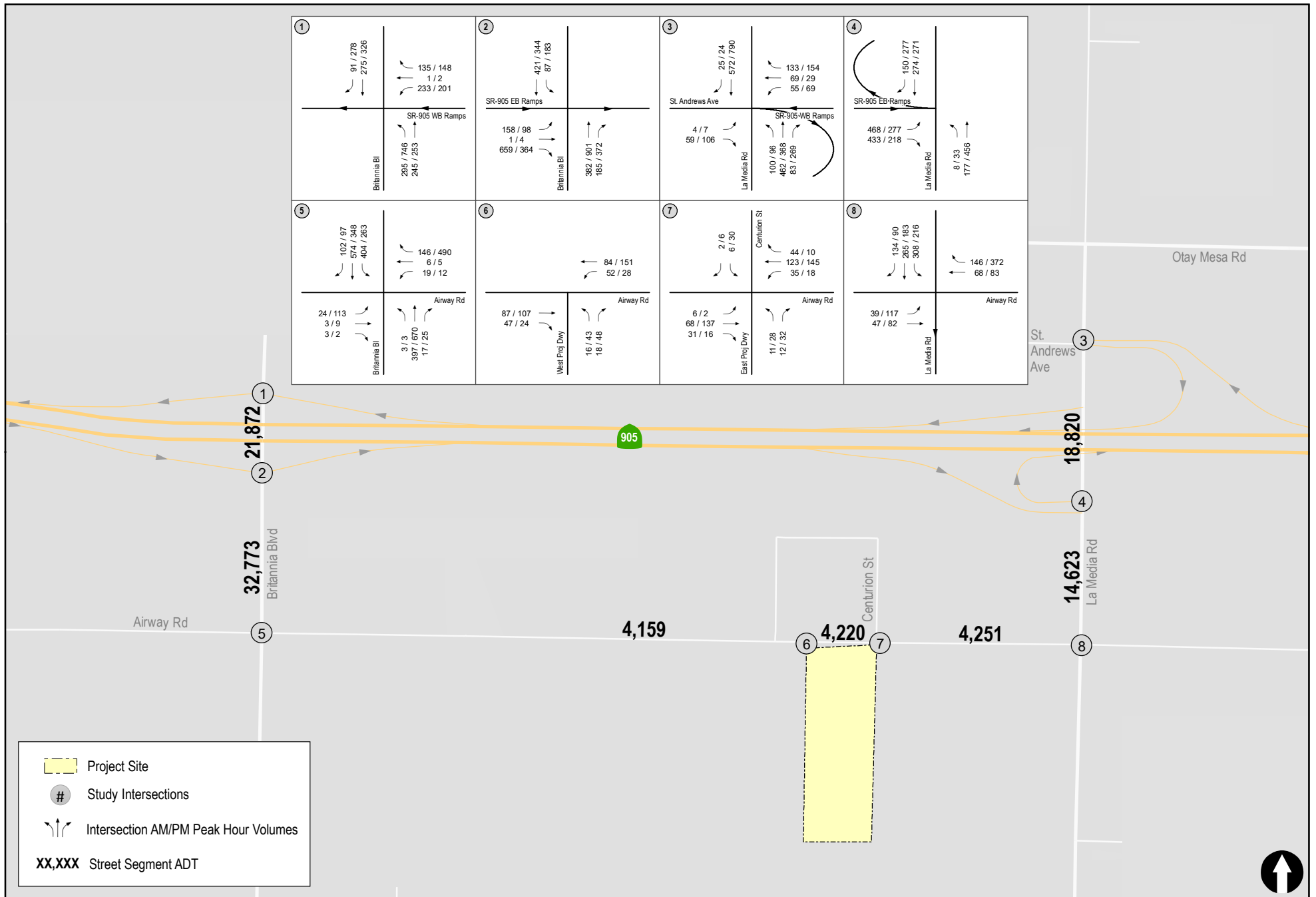


Figure 8-1

Existing + Project Traffic Volumes

9.0 CUMULATIVE PROJECTS

Cumulative projects represent reasonably foreseeable planned development that contributes to background traffic conditions for the Near-Term (Opening Year 2021) scenarios. LLG researched ongoing cumulative project development in the study area that were recently approved or projects that are currently under review. A total of eighteen (18) cumulative projects were identified for consideration in the Near-Term (Opening Year 2021) scenarios.

Table 9-1 contains a list of cumulative projects that were considered in the Near-Term (Opening Year 2021) analysis. *Figure 9-1* shows the locations of the cumulative projects. *Figure 9-2* shows the cumulative projects traffic volumes. *Appendix F* contains additional information regarding the cumulative projects.

**TABLE 9-1
CUMULATIVE PROJECTS**

Project Name	Land Use	Estimated ADT ^a	AM Peak Hour (In/Out) ^a	PM Peak Hour (In/Out) ^a	Status
1. 7-Eleven (PTS 540084)	Convenience Store	1,800	144 (72 / 72)	144 (72 / 72)	Approved
2. Azul Playa Del Sol/Luna (California Terraces PA 61)	Residential	4,440	356 (71 / 285)	400 (280 / 120)	Approved
3. Cesar Solis Park	Park	750	30 (0 / 30)	60 (0 / 60)	Constructed and Open
4. Candlelight (PTS #40329)	Residential	2,850	228 (46 / 182)	257 (180 / 77)	Approved
5. Southview (PTS370044)	Residential	1,662	133 (27 / 106)	299 (105 / 194)	Constructed and Open
6. Southview East (PTS #371807)	Residential	816	65 (13 / 51)	220 (51 / 169)	Under construction
7. Southwind (PTS 412529)	Residential	800	64 (13 / 51)	80 (56 / 24)	Under Review
8. Handler Retail Center (PTS 659064)	Motel	1,701	136 (54 / 82)	153 (61 / 92)	Under review
	Restaurant (sit-down high turnover)	3,120	250 (125 / 125)	250 (150 / 100)	
	Fast-food (with drive-through)	4,200	168 (101 / 67)	336 (168 / 168)	
9. Arco #5770 (PTS 110390)	Gas Station	60	4 (2 / 2)	4 (2 / 2)	Constructed and Open
10. Marijuana Production Facility (PTS 585510)	Marijuana Facility	346	69 (62 / 7)	69 (14 / 55)	Approved
11. California Terraces PA 61 (PTS #605191)	Mixed Use Residential / Commercial	4,716	252 (101 / 151)	486 (271 / 215)	Approved
12. Cross Border Facility (Phase 2) ^b	Cross Border Facility	24,700	1,056 (606 / 450)	1,167 (587 / 580)	Approved
13. Metro Airpark (Phase 1)	Airport / Retail	1,000	99 (77 / 22)	106 (34 / 72)	Approved
14. La Media Retail (PTS #334235)	Commercial / Retail	8,660	310 (183 / 127)	812 (407 / 405)	Pending Approval
15. Sunroad Otay Mesa (Phase 1 and Phase 2) (PTS #538140)	Warehouse	4,225	633 (444 / 189)	676 (270 / 406)	Approved
16. Lumina (Phase 1) (PTS #555609) ^c	Mixed Use Residential / Commercial	11,151	673 (187 / 486)	1,048 (646 / 402)	Approved

**TABLE 9-1
CUMULATIVE PROJECTS**

Project Name	Land Use	Estimated ADT^a	AM Peak Hour (In/Out)^a	PM Peak Hour (In/Out)^a	Status
17. Lumina (Phase 2) (PTS #555609) ^c	Mixed Use Residential / Commercial	15,181	1,214 (390 / 824)	1,532 (944 / 588)	Approved
18. Otay 250 (East Otay Mesa Specific Plan Amendment) ^d	Mixed Use Residential / Commercial	34,124	2,785 (1,090 / 1,695)	3,474 (2,000 / 1,474)	Approved

Footnotes:

- a. Trip generation obtained from *Otay Mesa Lumina TIS*, February 20, 2019
- b. Phase 2 of the Cross Border Facility Project is not expected to be completed until the Year 2023, according to the information provided in the Final Lumina TIA (February 2019). Therefore, this project is not expected to generate additional trips to the study area prior to the Proposed Project's Opening Day by Year 2021.
- c. Phase 1 and 2 of the Lumina Project is not expected to be completed until the Year 2023 (Phase 1) and Year 2027 (Phase 2), according to the information provided in the Final Lumina TIA (February 2019). Therefore, this project is not expected to generate additional trips to the study area prior to the Proposed Project's Opening Day by Year 2021.
- d. Otay 250 project expected opening day is late Year 2022. Therefore, this project is not expected to generate additional trips to the study area prior to the Proposed Project's Opening Day by Year 2021.

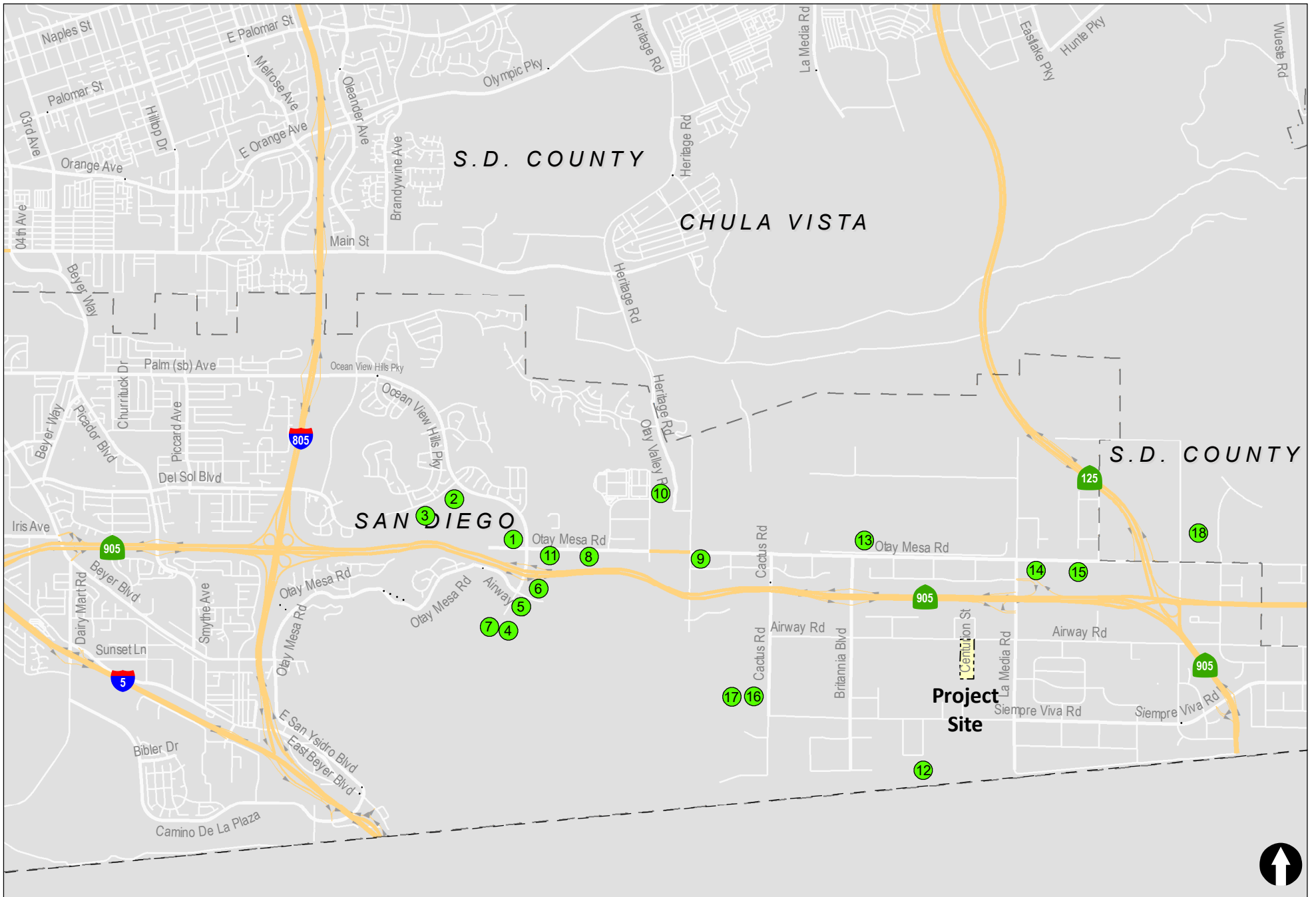


Figure 9-1
Cumulative Projects Location Map

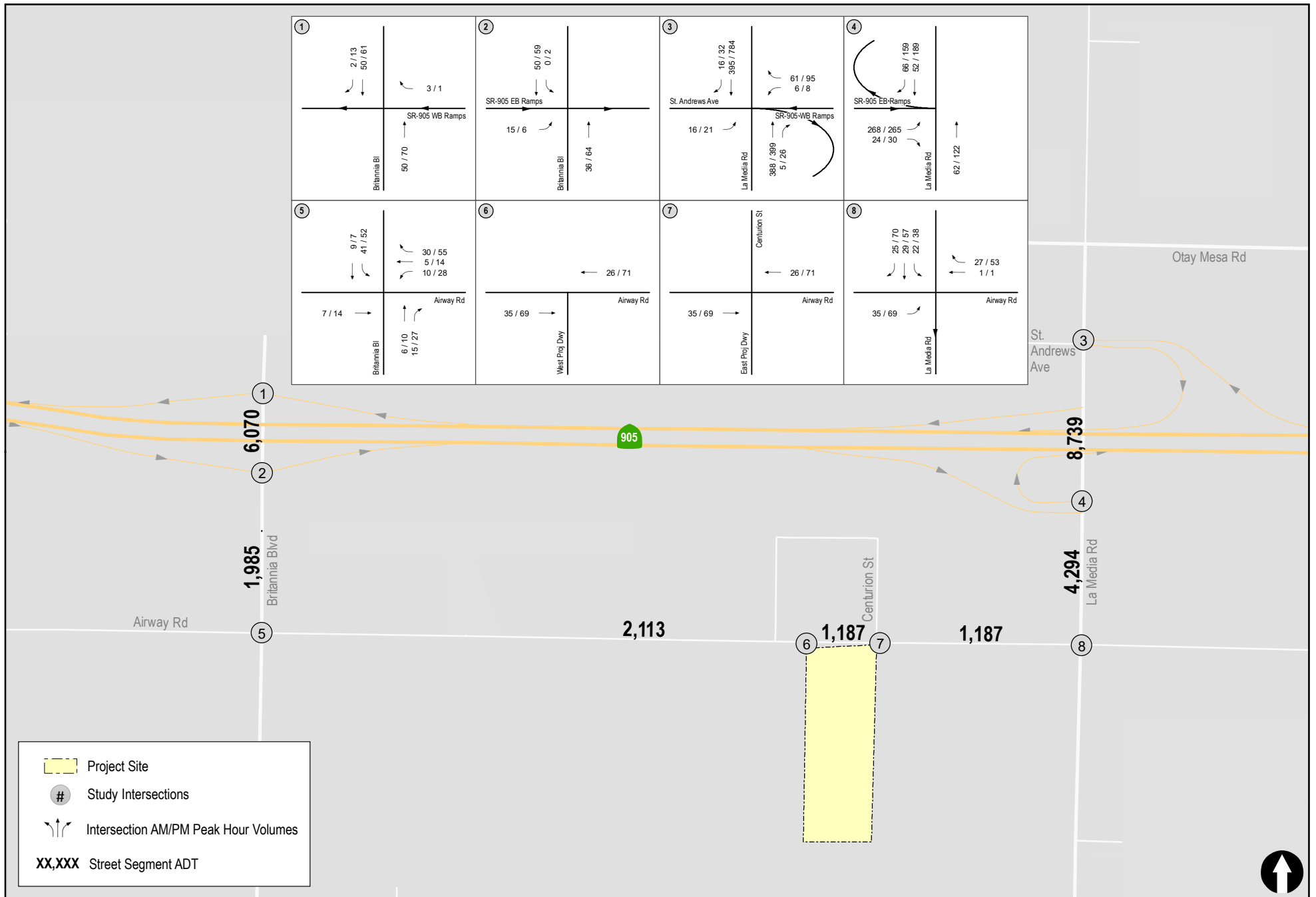


Figure 9-2

Cumulative Projects Traffic Volumes

10.0 ANALYSIS OF NEAR-TERM (OPENING YEAR 2021) CONDITIONS

10.1 Near-Term Network Assumptions

No changes to the street network or intersection geometry from existing conditions were assumed for the analysis of this scenario.

10.2 Near-Term Traffic Volumes

Near-Term (Opening Year 2021) traffic volumes were calculated for the study area by adding the total cumulative projects traffic volumes shown on *Figure 9-1* onto the existing traffic volumes.

Figure 10-1 shows the Near-Term (Opening Year 2021) traffic volumes.

10.3 Near-Term (Opening Year 2021) Analysis

10.3.1 Peak Hour Intersection Levels of Service

Table 10-1 summarizes the peak hour intersection operations under the Near-Term (Opening Year 2021) conditions. As seen in *Table 10-1*, the study intersections are calculated to operate at LOS D or better.

Appendix G contains the Near-Term (Opening Year 2021) intersection analysis worksheets.

10.3.2 Daily Street Segment Levels of Service

Table 10-2 summarizes the street segment operations under the Near-Term (Opening Year 2021) conditions. As seen in *Table 10-2*, the following study segment is calculated to operate at LOS F:

- La Media Road, from SR 905 EB Ramps to Airway Road

10.4 Near-Term (Opening Year 2021) + Project Analysis

Near-Term (Opening Year 2021) + Project traffic volumes were calculated by adding the Project traffic volumes to the Near-Term (Opening Year 2021) traffic volumes. *Figure 10-2* shows the Near-Term (Opening Year 2021) + Project traffic volumes.

10.4.1 Peak Hour Intersection Levels of Service

Table 10-1 summarizes the peak hour intersection operations under the Near-Term (Opening Year 2021) + Project conditions. As seen in *Table 10-1*, with the addition of Project traffic, the study intersections are calculated to continue to operate at LOS D or better.

Appendix H contains the Near-Term (Opening Year 2021) + Project intersection analysis worksheets.

10.4.2 *Daily Street Segment Levels of Service*

Table 10–2 summarizes the street segment operations under the Near-Term (Opening Year 2021) + Project conditions. As seen in *Table 10–2*, with the addition of Project traffic, the following study segment is calculated to continue to operate at LOS F:

- La Media Road, from SR 905 EB Ramps to Airway Road

Based on the City of San Diego’s significance criteria, a **significant direct project impact** is identified on the following segment as the project traffic contribution exceeds the allowable threshold.

- La Media Road, from SR 905 EB Ramps to Airway Road (LOS F)

Mitigation measures for these impacts are discussed in detail in *Section 12.2*.

**TABLE 10-1
NEAR-TERM INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Near-Term (Opening Year 2021)		Near-Term (Opening Year 2021) + Project		Δ ^c	Sig?
			Delay ^a	LOS ^b	Delay	LOS		
1. Britannia Boulevard / SR 905 WB Ramps	Signal	AM	29.8	C	30.1	C	0.3	No
		PM	27.9	C	28.2	C	0.3	No
2. Britannia Boulevard / SR 905 EB Ramps	Signal	AM	26.2	C	32.0	C	5.8	No
		PM	26.9	C	32.5	C	5.6	No
3. La Media Road / SR 905 WB Ramps	Signal	AM	22.1	C	22.6	C	0.5	No
		PM	27.6	C	28.0	C	0.4	No
4. La Media Road / SR 905 EB Ramps	Signal	AM	26.6	C	27.1	C	0.5	No
		PM	19.1	B	19.6	B	0.5	No
5. Airway Road / Britannia Boulevard	Signal	AM	31.2	C	49.1	D	17.9	No
		PM	48.0	D	50.7	D	2.7	No
6. Airway Road / Project Driveway (west)	TWSC ^c	AM	DNE	–	10.8	B	–	No
		PM	DNE	–	12.3	B	–	No
7. Airway Road / Centurion Street / Project Driveway (east)	OWSC ^d / TWSC ^c	AM	10.2	B	11.7	B	1.5	No
		PM	12.0	B	14.2	B	2.2	No
8. Airway Road / La Media Road ^e	AWSC ^f	AM	22.9	C	23.8	C	0.9	No
		PM	28.6	D	33.5	D	4.9	No

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. TWSC – Two-Way Stop Controlled intersection. Worst movement delay is reported.
- d. OWSC – One-Way Stop Controlled intersection. Worst movement delay is reported.
- e. A traffic signal is in place at this intersection, however, it is not in operation. Therefore, it is analyzed as an all-way stop controlled intersection.
- f. AWSC – All-Way Stop Controlled intersection. Average delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

General Notes:

- 1. DNE – does not exist.

**TABLE 10-2
NEAR-TERM STREET SEGMENT OPERATIONS**

Street Segment	Classification	Existing Capacity (LOS E) ^a	Near-Term			Near-Term + Project			Δ ^e	Sig?
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
Britannia Boulevard										
SR 905 WB Ramps to SR 905 EB Ramps	6-lane Prime Arterial	60,000	27,547	B	0.459	27,942	B	0.466	0.007	No
SR 905 EB Ramps to Airway Road	5-lane Major Arterial	45,000	34,045	C	0.757	34,758	C	0.772	0.016	No
La Media Road										
SR 905 WB Ramps / St. Andrews Ave. to SR 905 EB Ramps	6-lane Prime Arterial	60,000	27,050	B	0.451	27,559	B	0.459	0.008	No
SR 905 EB Ramps to Airway Road	3-lane Collector	15,000	18,158	F	1.211	18,917	F	1.261	0.051	Yes
Airway Road										
Britannia Boulevard to Project Driveway (west)	2-Lane Collector (with commercial fronting)	8,000	5,559	D	0.695	6,272	D	0.784	0.089	No
Project Driveway (west) to Centurion Street/Project Driveway (east)	2-Lane Collector (with commercial fronting)	8,000	4,633	C	0.579	5,407	D	0.676	0.097	No
Centurion Street/Project Driveway (east) to La Media Road	2-Lane Collector (with commercial fronting)	8,000	4,633	C	0.579	5,438	D	0.680	0.101	No

Footnotes:

- a. Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).
- b. Average Daily Traffic
- c. Level of Service
- d. Volume to Capacity Ratio
- e. Δ denotes a project-induced increase in the Volume to Capacity ratio

General Notes:

BOLD typeface indicates a potentially significant impact.

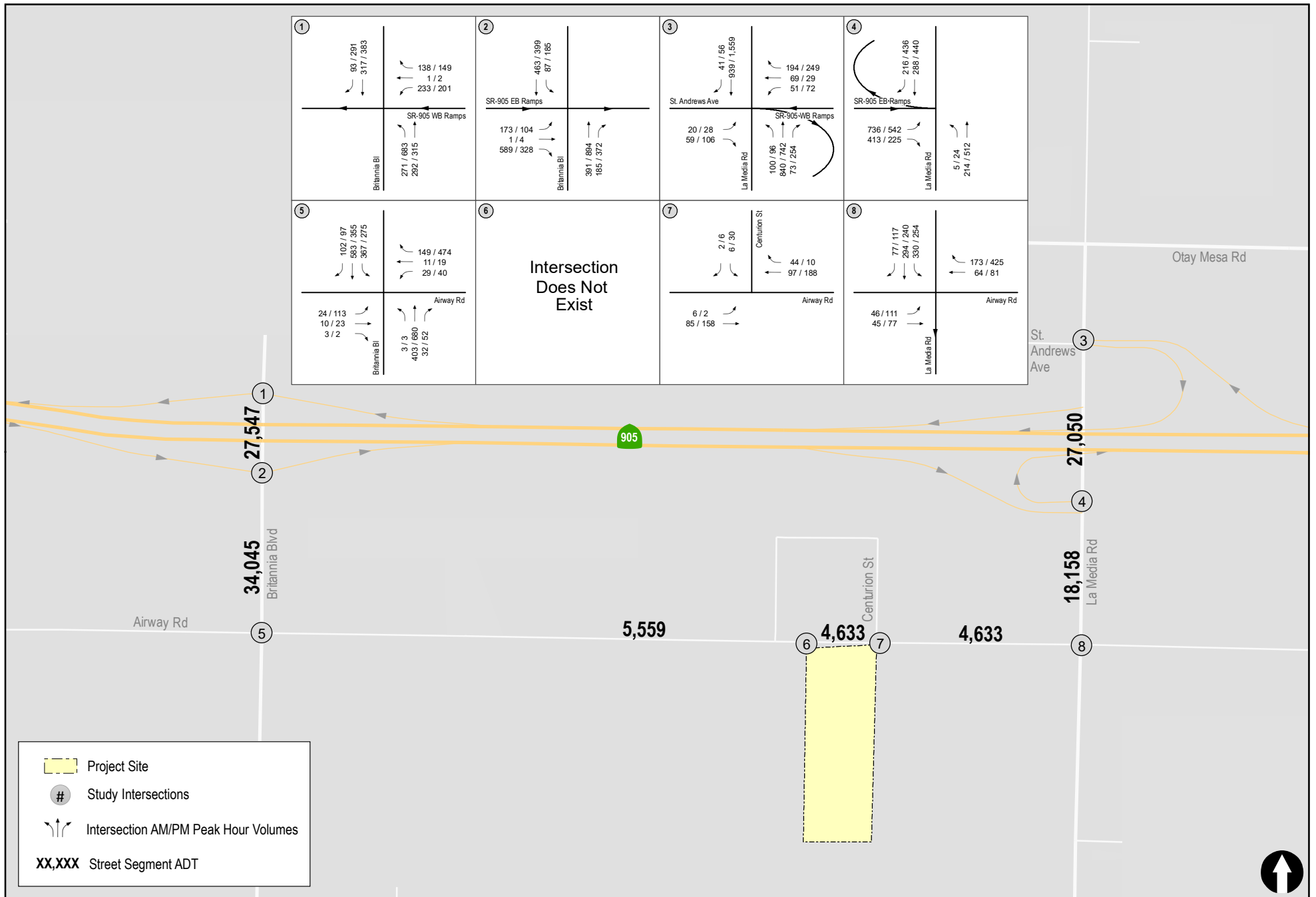


Figure 10-1

Near-Term (Opening Day 2021) Traffic Volumes

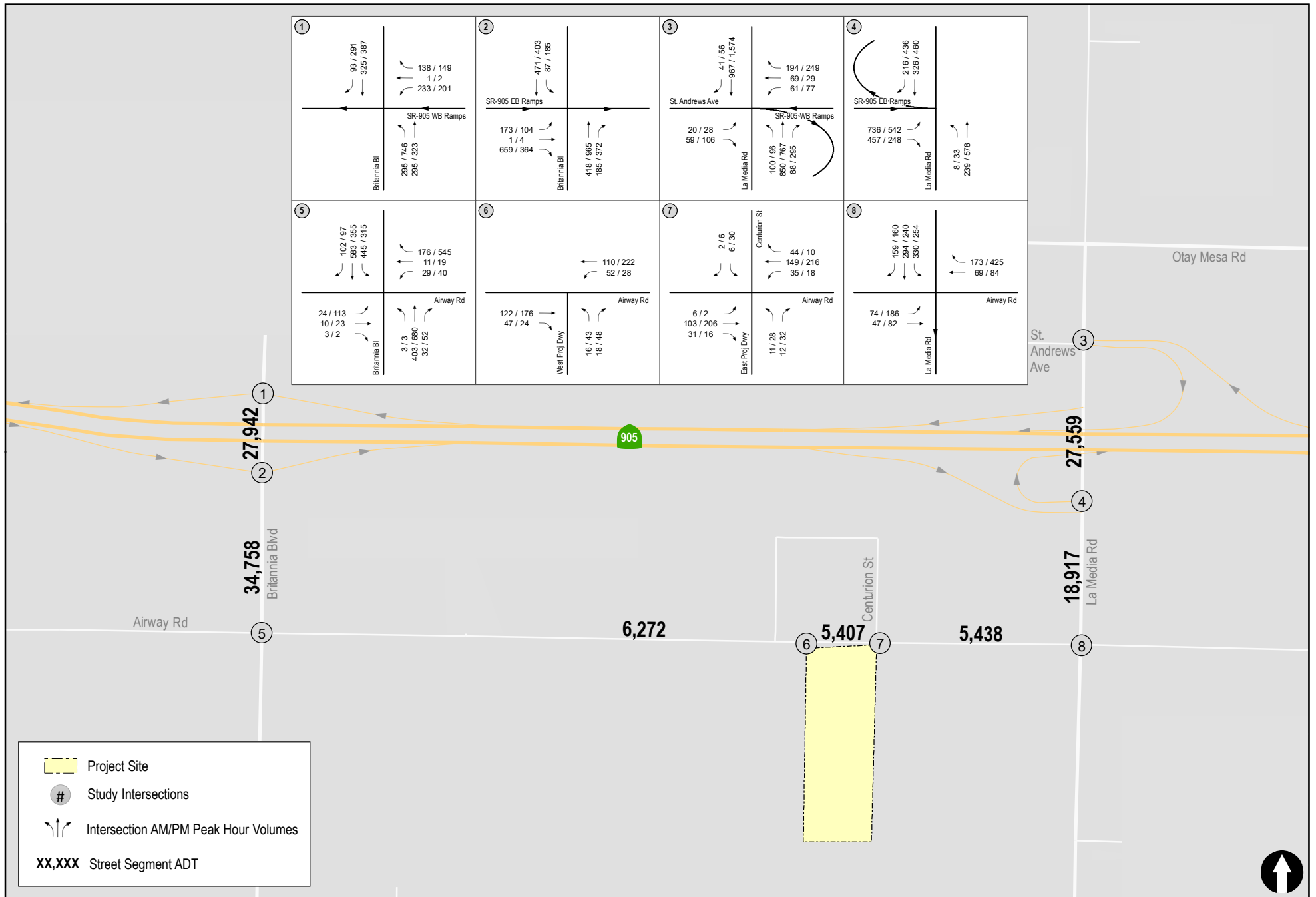


Figure 10-2

11.0 ACCESS AND ACTIVE TRANSPORTATION

11.1 Access and Frontage Improvements

The Project proposes access to the site via two (2) driveways on Airway Road. The eastern driveway will be used by trucks accessing the site. The western driveway will be used by light vehicles only. Both driveways would provide full access.

As a part of the Project frontage improvements, consistent with the Airway Road ultimate classification of a 4-lane Major (76 feet curb-to-curb), per the City of San Diego Street Design Manual, the Project is proposing to widen Airway Road along the Project frontage by 39 feet from the centerline and provide a 21-foot parkway to provide the ultimate roadway width.

The Project proposes to construct the frontage improvements and relocate the curb to the south similar to the neighboring properties to the west. While the ultimate width would be provided for a raised median, it is noted that there are currently no raised medians on Airway Road along this stretch. Therefore, the project proposes to maintain the existing 2-lanes (with no median) on its frontage along Airway Road. Consistent with the adjacent properties on Airway Road, the westerly driveway would allow full movements until the time raised median is constructed on Airway Road. *Appendix I* contains a drawing showing the driveway and frontage improvement designs.

11.2 Pedestrian, Bicycle and Transit Mobility

Along Airway Road between La Media Road and Britannia Boulevard, a contiguous sidewalk currently exists on the north side. However, sidewalks are only provided intermittently on the south side. As a part of the project frontage improvements, per the current Street Design Manual, the Project will provide half-width improvements to meet the ultimate classification of a 4-lane Major on Airway Road. This improvement would include a 21-foot parkway, which would consist of a 6-foot non-contiguous sidewalk and a 15-foot parkway.

There are no bicycle facilities currently provided along Airway Road. As a part of the project frontage requirements, the project will provide half-width improvements to accommodate the ultimate classification of Airway Road as a 4-lane Major with a 76' curb to curb width within a 98' right-of-way that would provide buffered bike lanes on both sides of the roadway.

There are two (2) existing bus stops located within ¼ mile walking distance from the Project site, which are described below:

- A bus stop for MTS Route 909 is located on Gigante Street in front of Southwestern Higher Education Center Otay Mesa. Route 909 provides service between Southwestern Higher Education Center Otay Mesa and the Otay Mesa Transit Center. Weekday service begins at 5:05 AM with 1-hour headways and ends at 7:46 PM.
- A bus stop for MTS Route 909, is located just west of the Airway Road / Excellante Street intersection. Route 909 provides service between the Southwestern Higher Education Center

Otay Mesa and the Otay Mesa Transit Center. Weekday service begins at 5:05 AM with 1-hour headways and ends at 7:46 PM.

- In the project study area, a bus stop for MTS Route 905 is also located on west side of La Media Road at the SR 905 EB Ramps intersection. Route 905 provides service between the Iris Avenue Transit Center and Otay Mesa Transit Center. Weekday service begins at 4:10 AM with 30-minute headways and ends at 10:00 PM.

12.0 PARKING

The section below discusses the City of San Diego parking requirements for the proposed project.

12.1 Automobile Parking Requirements

According to Table 142.05E in the *San Diego Municipal Code, Chapter 14: General Regulation, Article 2: General Development Regulation, Division 5: Parking Regulations*, a minimum of 3.3 parking spaces per 1,000 square-feet is required for office uses and 1 space per 1,000 square-feet is required for warehouse use. Based on the above minimum parking requirements, the project required parking is calculated as 276 spaces with 40 parking spaces for the office and 236 spaces for the warehouse use. The City's minimum required parking for accessible parking spaces is provided on SDM-117 of the City of San Diego's Standard Drawings (1/31/2012). According to SDM-117 of the City of San Diego's Standard Drawings, 7 accessible parking spaces are required for uses where the total required number of parking spaces provided are 300 or less.

The proposed project will provide a total of 276 automobile parking spaces, which includes a total of 7 accessible parking spaces. Therefore, the proposed project meet's the City's overall minimum parking and accessible parking requirements.

12.2 Motorcycle Parking Requirements

The City requires that motorcycle parking be provided at a ratio of 2% of the total automobile parking required, or two spaces, whichever is greater. Based on the City's parking requirements, a minimum of 6 motorcycle parking spaces are required. The project will provide a total of 6 motorcycle parking spaces, therefore meeting the City's minimum parking requirements.

12.3 Bicycle Parking Requirements

Per Municipal Code Section 142.0530(e)(1)(A), the project would provide the minimum requirement of two short-term bicycle parking spaces for the proposed office use. Per Municipal Code Section 142.0530(e)(1)(D), the proposed industrial use would be exempt from providing short-term bicycle parking spaces. The project would also be subject to 2019 California Green Building Code Section 5.106.4.1.1, which requires non-residential projects provide short-term bicycle parking spaces equal to either five percent of new visitor vehicle parking spaces or a one, two-bike capacity rack, whichever is greater. The future tenants have not been identified yet. Therefore, employee parking spaces and visitor parking spaces have not been differentiated. As the project proposes warehouse tenant spaces, visitor parking is anticipated to be minimal. The project would provide a total of ten short-term bicycle parking spaces by installing one, five-space rack adjacent to the north end of the building, and one, five-space rack adjacent to the south of the building. This number of short-term bicycle parking spaces is anticipated to exceed the project requirements described above; the additional eight short-term bicycle parking spaces beyond the two required for the office use per the Municipal Code would satisfy the 2019 California Green Building Code requirement under a scenario in which 160 out of 276 vehicle parking spaces provided by the project would be used as

visitor parking. Per Section 142.0530(e)(2)(A), the project would be required to provide 14 long-term bicycle parking spaces (5% of required vehicle parking [276 spaces]). To exceed this requirement, the project would provide at least 15 long-term bicycle parking spaces.

12.4 Carpool, Electric Vehicles (EV's) and Zero Emission Vehicles Parking Requirements

The City requires that carpool and zero emission vehicle parking be provided at a ratio of 8% of the total automobile parking required if there are more than 201 automobile parking spaces provided on the project site. Based on the City's parking requirements, a minimum of 23 carpool and zero emission vehicle parking spaces are required. The project will provide a total of 28 carpool and zero emission parking spaces, therefore exceeding the City's minimum parking requirements.

13.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

13.1 Significance of Impacts

Per the City's significance thresholds and the analysis methodology presented in this report, project related traffic is calculated to cause significant impacts within the study area at the one location:

Intersections

- None

Street Segments

- La Media Road between SR 905 EB Ramps and Airway Road

13.2 Mitigation

The following mitigation measures will mitigate the significant impact to below a level of significance.

- **Mitigation Measure MM-TRA-1: La Media Road between SR 905 EB Ramps and Airway Road** – To mitigate the project's impact to below a level of significance, the project will widen La Media Road on the east side to construct a second northbound through lane from Airway Road to approximately 600 feet north of Airway Road, where the road is already widened to three through lanes. This mitigation measure has already been proposed as part of the La Media Retail TIS.
- This mitigation will be permitted and bonded prior to the issuance of the first building permit and will be constructed prior to the issuance of occupancy. **Appendix J** contains a conceptual drawing of this improvement.

Tables 13-1 and **13-2** shows the post mitigation analysis reducing the project impacts to less than significant.

**TABLE 13-1
EXISTING + PROJECT POST-MITIGATION STREET SEGMENT ANALYSIS**

Street Segment	Functional Classification	Capacity (LOS E) ^a	Existing			Existing + Project			Improvement Classification	Mitigation Capacity	Existing + Project with Mitigation		
			ADT ^b	LOS ^c	V/C ^d	ADT ^b	LOS ^c	V/C ^d			ADT	LOS	V/C
La Media Road SR 905 EB Ramps to Airway Road	3-Lane Collector	15,000	13,864	E	0.924	14,623	E	0.975	4-Lane Collector	30,000	14,623	C	0.487

Footnotes:

- a. Capacities based on City of San Diego Roadway Classification & LOS table.
- b. Average Daily Traffic
- c. Level of Service
- d. Volume to Capacity ratio

**TABLE 13-2
NEAR-TERM (OPENING YEAR 2021) POST-MITIGATION STREET SEGMENT ANALYSIS**

Street Segment	Functional Classification	Capacity (LOS E) ^a	Near-Term			Near-Term+ Project			Improvement Classification	Mitigation Capacity	Near-Term+ Project with Mitigation		
			ADT ^b	LOS ^c	V/C ^d	ADT ^b	LOS ^c	V/C ^d			ADT	LOS	V/C
La Media Road SR 905 EB Ramps to Airway Road	3-Lane Collector	15,000	18,158	F	1.211	18,917	F	1.261	4-Lane Collector	30,000	18,158	C	0.605

Footnotes:

- a. Capacities based on City of San Diego Roadway Classification & LOS table.
- b. Average Daily Traffic
- c. Level of Service
- d. Volume to Capacity ratio

TECHNICAL APPENDICES
AIRWAY LOGISTICS CENTER
City of San Diego, California
October 23, 2020

LLG Ref. 3-20-3219

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APPENDICES

APPENDIX

- A. Intersection and Segment Manual Count Sheets, Historical Counts Comparison, and Centurion Street Volumes Forecast
- B. Intersection Methodology and Analysis Sheets
- C. City of San Diego Roadway Classification Table
- D. Existing Intersection Analysis Worksheets
- E. Existing + Project Intersection Analysis Worksheets
- F. Cumulative Projects Information
- G. Near-Term (Opening Year 2021) Intersection Analysis Worksheets
- H. Near-Term (Opening Year 2021) + Project Intersection Analysis Worksheets
- I. Project Driveways and Frontage Improvement Design
- J. Conceptual Striping Plan

APPENDIX A

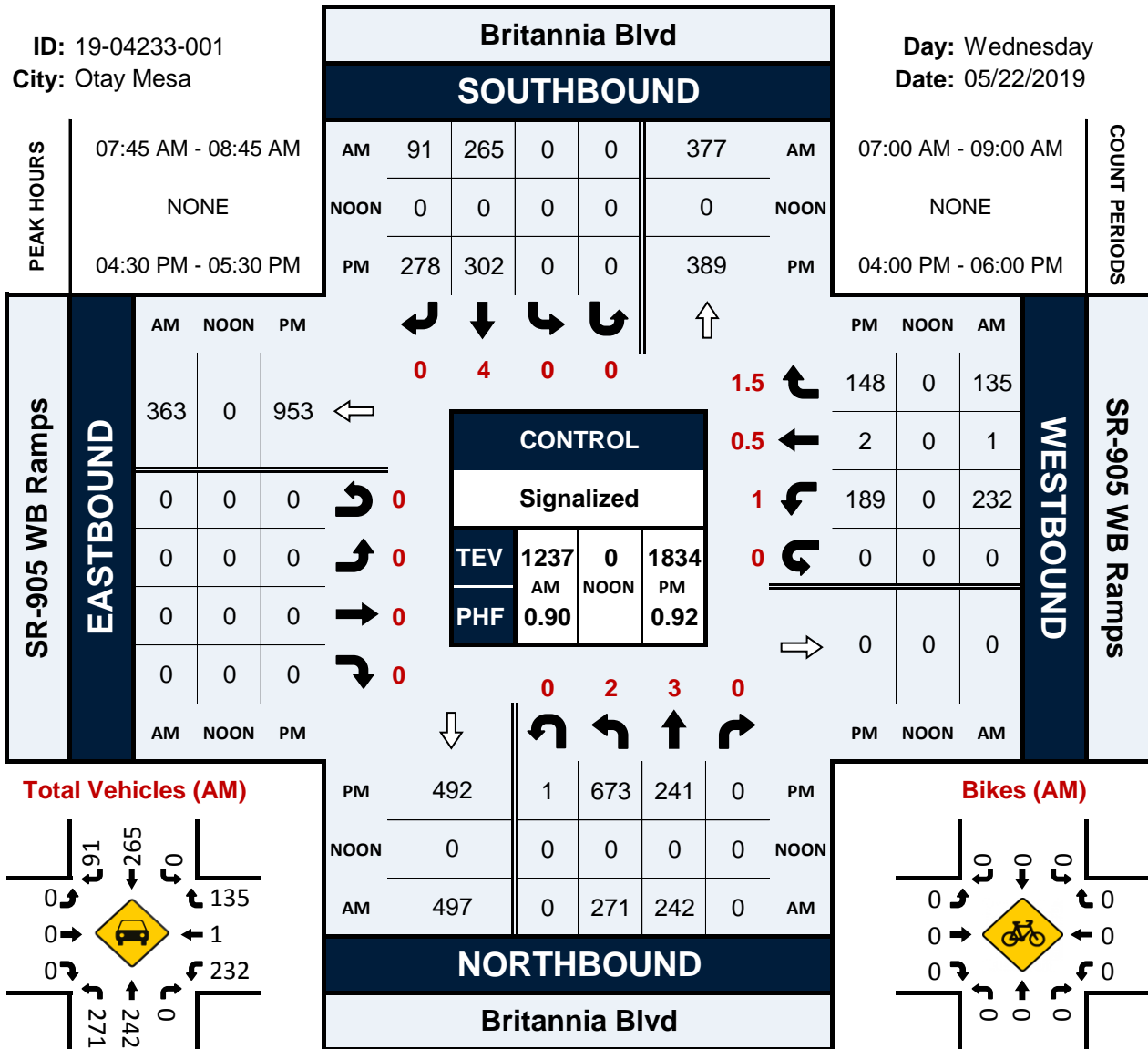
INTERSECTION AND SEGMENT MANUAL COUNT SHEETS, HISTORICAL COUNTS COMPARISON, AND CENTURION STREET VOLUMES FORECAST

Britannia Blvd & SR-905 WB Ramps

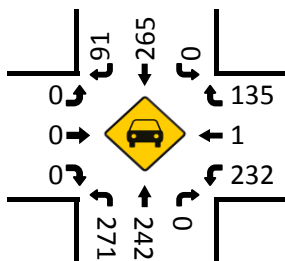
Peak Hour Turning Movement Count

ID: 19-04233-001
City: Otay Mesa

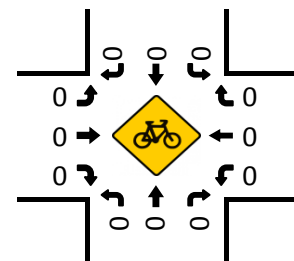
Day: Wednesday
Date: 05/22/2019



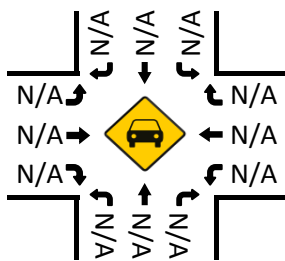
Total Vehicles (AM)



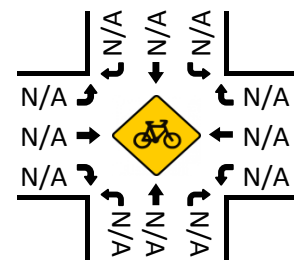
Bikes (AM)



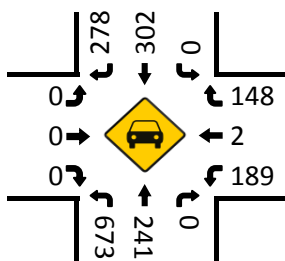
Total Vehicles (Noon)



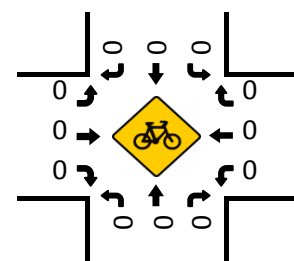
Bikes (NOON)



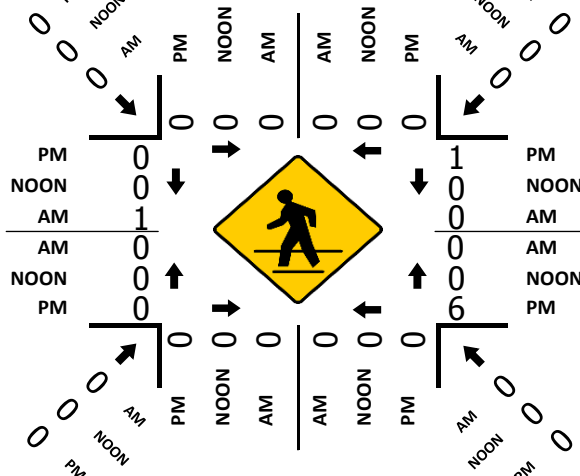
Total Vehicles (PM)



Bikes (PM)



Pedestrians (Crosswalks)

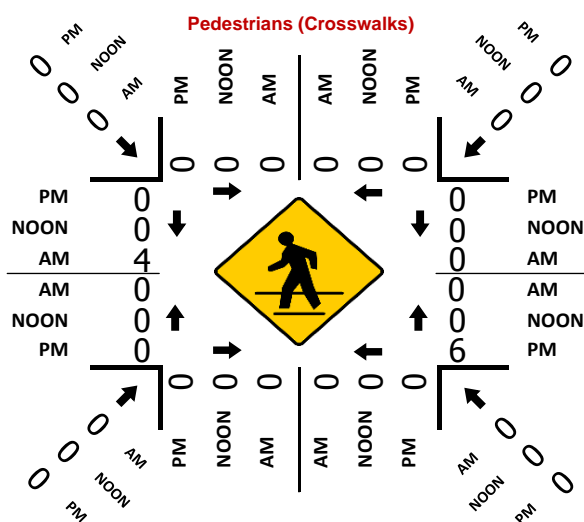
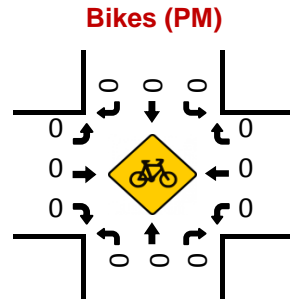
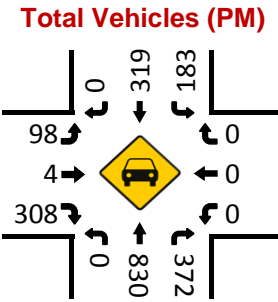
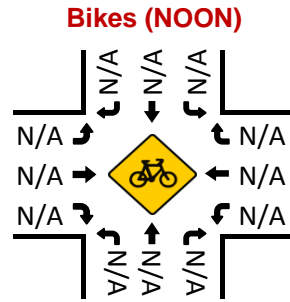
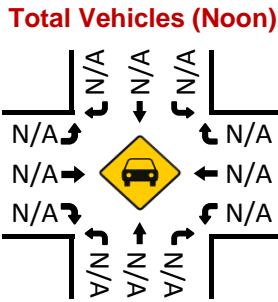
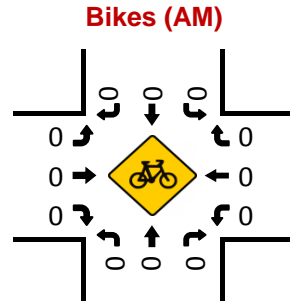
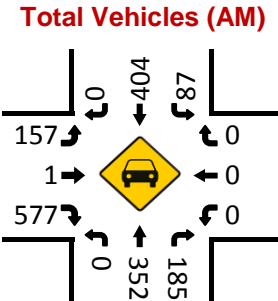
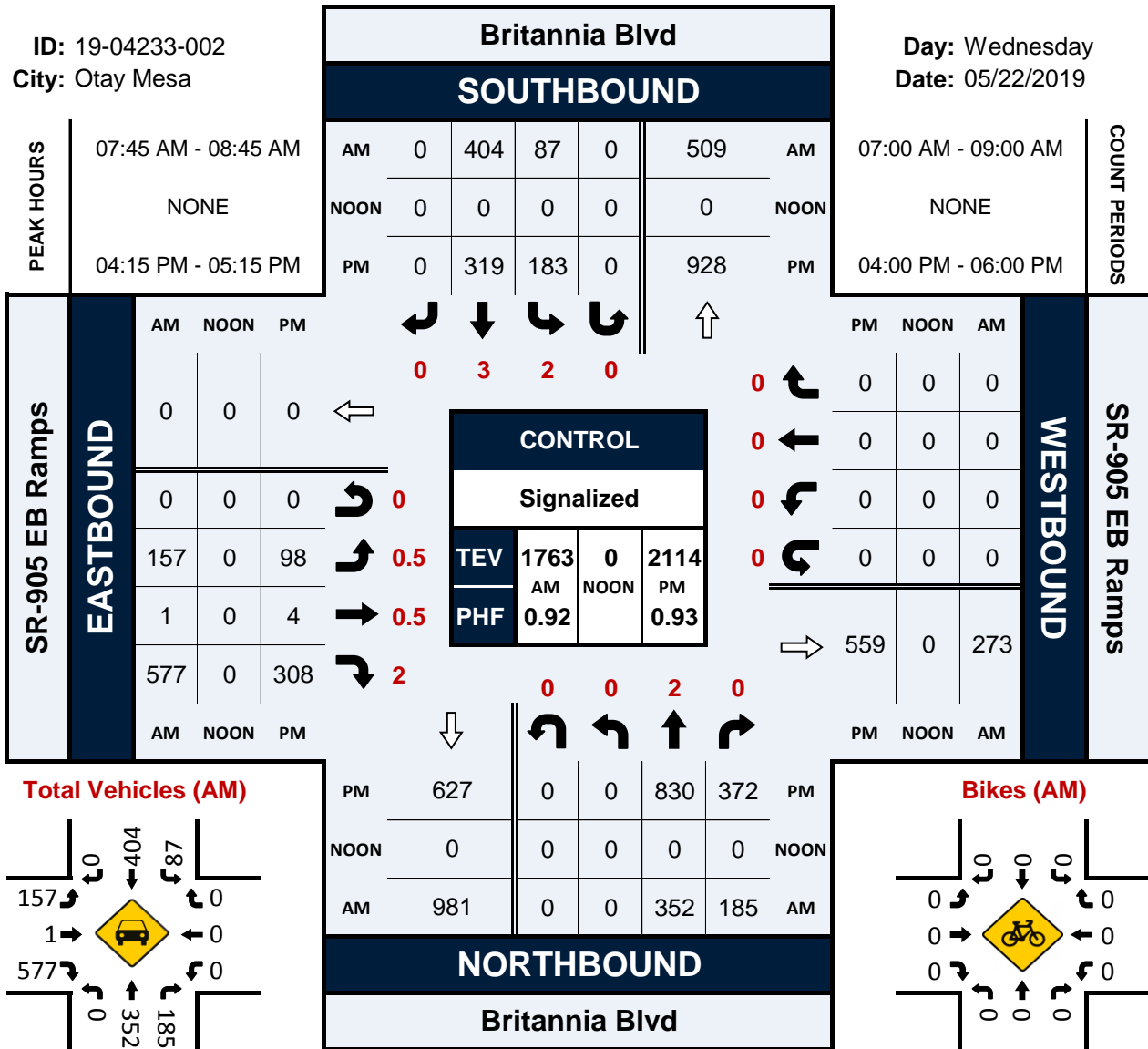


Britannia Blvd & SR-905 EB Ramps

Peak Hour Turning Movement Count

ID: 19-04233-002
City: Otay Mesa

Day: Wednesday
Date: 05/22/2019



ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

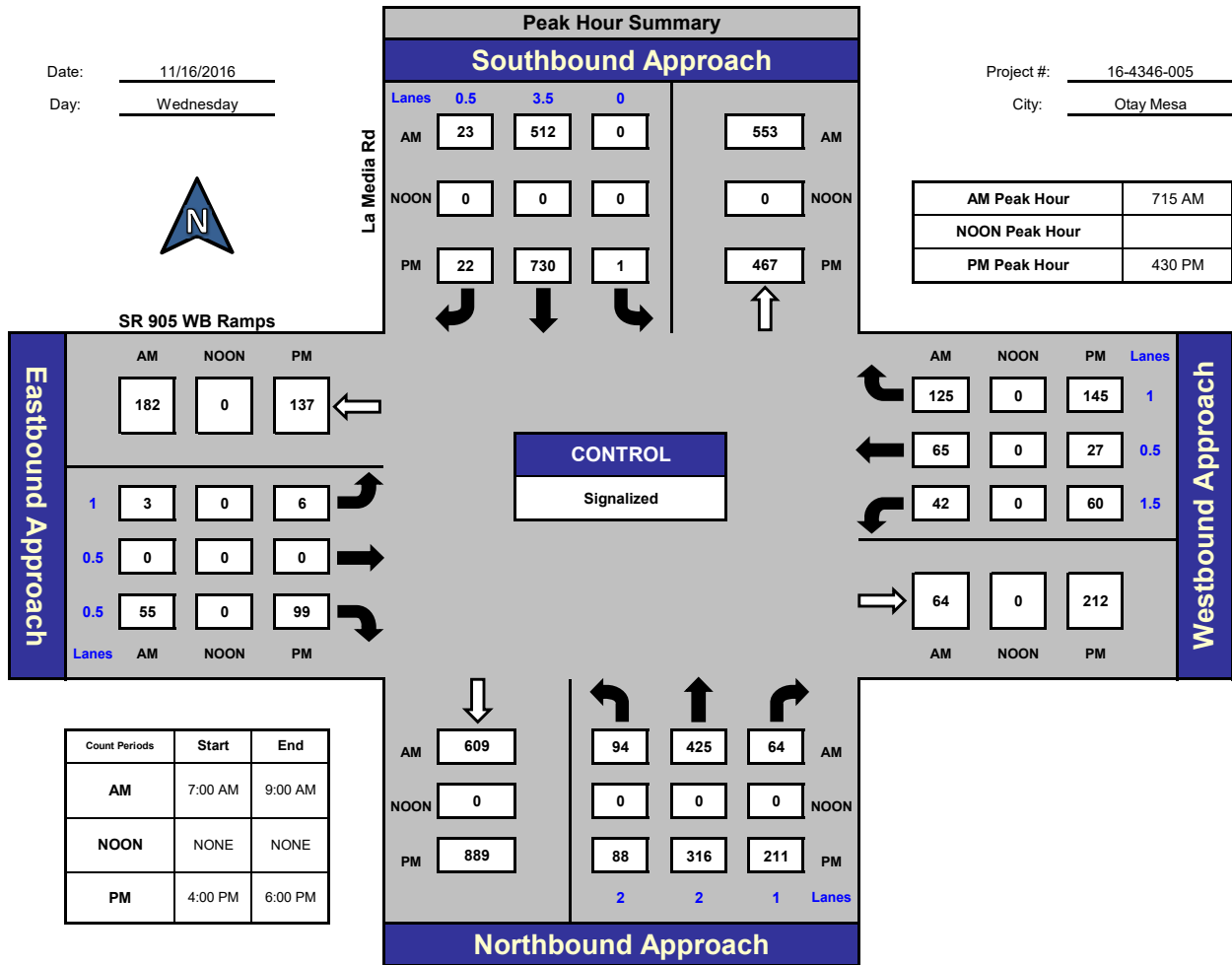
La Media Rd and SR 905 WB Ramps, Otay Mesa

Date: 11/16/2016

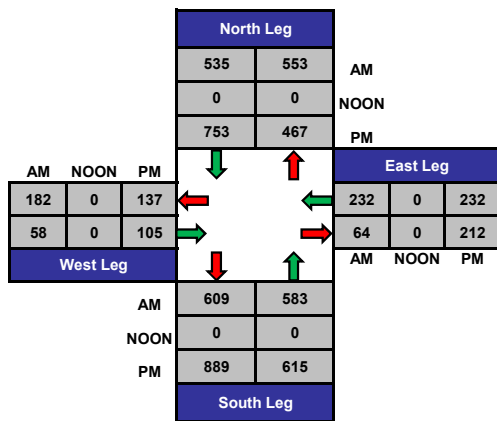
Day: Wednesday

Project #: 16-4346-005

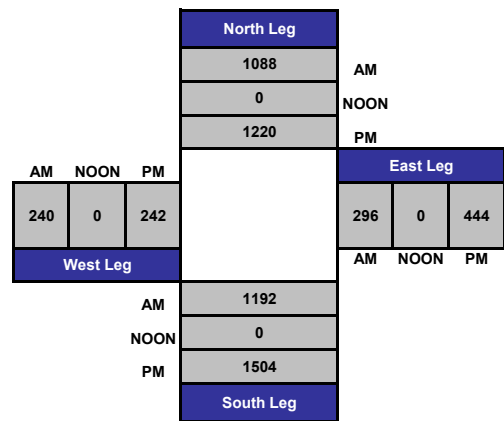
City: Otay Mesa



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-4346-005

Day: Wednesday

City: Otay Mesa

Date: 11/16/2016

		AM												
NS/EW Streets:		La Media Rd			La Media Rd			SR 905 WB Ramps			SR 905 WB Ramps			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
		2	2	1	0	3.5	0.5	1	0.5	0.5	1.5	0.5	1	
7:00 AM		13	73	29	0	93	4	0	0	12	3	9	38	274
7:15 AM		10	99	15	0	121	6	1	0	12	10	31	34	339
7:30 AM		36	110	16	0	120	8	0	0	17	7	9	22	345
7:45 AM		20	111	18	0	161	6	1	0	15	14	12	37	395
8:00 AM		28	105	15	0	110	3	1	0	11	11	13	32	329
8:15 AM		24	77	22	0	111	8	0	1	11	7	16	46	323
8:30 AM		22	58	28	0	117	8	1	0	11	8	8	36	297
8:45 AM		23	83	26	0	123	9	1	1	11	5	10	35	327
TOTAL VOLUMES :		176	716	169	0	956	52	5	2	100	65	108	280	2629
APPROACH %'s :		16.59%	67.48%	15.93%	0.00%	94.84%	5.16%	4.67%	1.87%	93.46%	14.35%	23.84%	61.81%	
PEAK HR START TIME :		7:15 AM												TOTAL
PEAK HR VOL :		94	425	64	0	512	23	3	0	55	42	65	125	1408
PEAK HR FACTOR :		0.900			0.801			0.853			0.773			0.891

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-4346-005

Day: Wednesday

City: Otay Mesa

Date: 11/16/2016

PM

NS/EW Streets:	La Media Rd			La Media Rd			SR 905 WB Ramps			SR 905 WB Ramps			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	2	1	0	3.5	0.5	1	0.5	0.5	1.5	0.5	1	
4:00 PM	24	81	62	0	173	8	1	0	19	24	9	26	427
4:15 PM	27	64	51	1	178	8	0	0	30	22	9	27	417
4:30 PM	19	74	58	1	176	5	2	0	30	9	6	37	417
4:45 PM	28	84	43	0	182	4	2	0	16	18	7	36	420
5:00 PM	19	78	52	0	206	5	0	0	25	16	9	36	446
5:15 PM	22	80	58	0	166	8	2	0	28	17	5	36	422
5:30 PM	15	46	49	0	147	7	2	2	21	13	12	33	347
5:45 PM	14	60	41	0	129	3	1	0	13	9	2	31	303
TOTAL VOLUMES :	168	567	414	2	1357	48	10	2	182	128	59	262	3199
APPROACH %'s :	14.62%	49.35%	36.03%	0.14%	96.45%	3.41%	5.15%	1.03%	93.81%	28.51%	13.14%	58.35%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	88	316	211	1	730	22	6	0	99	60	27	145	1705
PEAK HR FACTOR :	0.961		0.892			0.820			0.951			0.956	

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

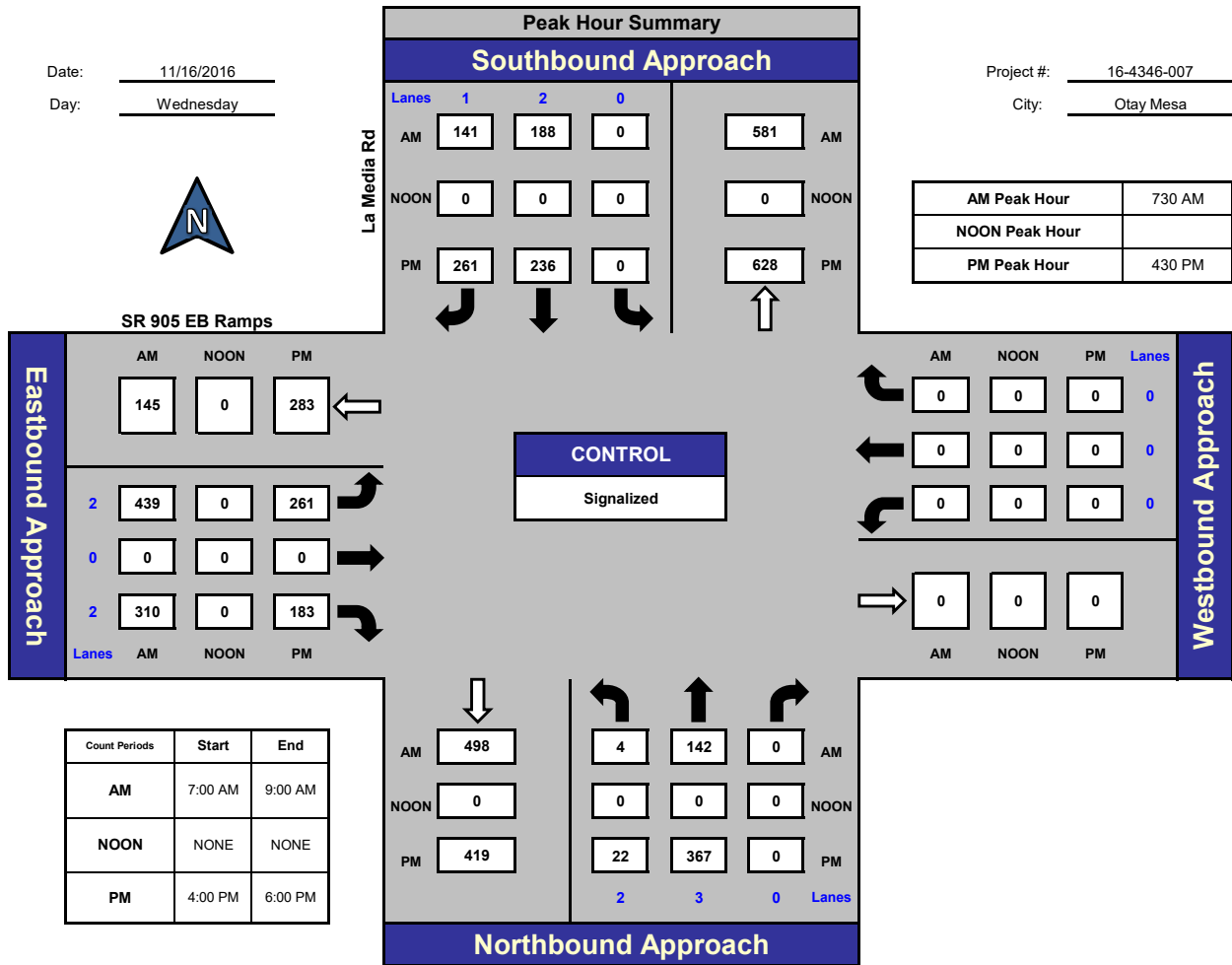
La Media Rd and SR 905 EB Ramps, Otay Mesa

Date: 11/16/2016

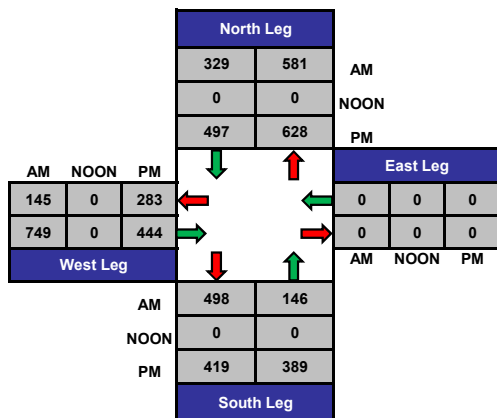
Day: Wednesday

Project #: 16-4346-007

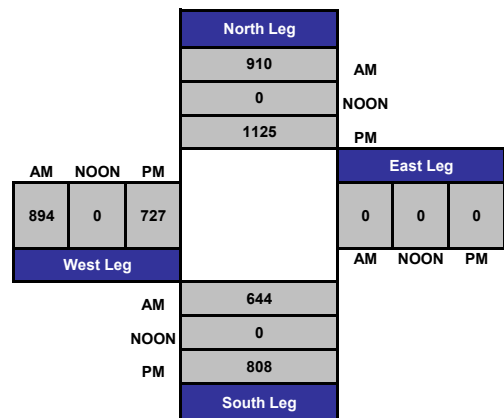
City: Otay Mesa



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-4346-007

Day: Wednesday

City: Otay Mesa

Date: 11/16/2016

AM

NS/EW Streets:	La Media Rd			La Media Rd			SR 905 EB Ramps			SR 905 EB Ramps			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	0	0	2	1	2	0	2	0	0	0	
7:00 AM	0	44	0	0	26	19	70	0	64	0	0	0	223
7:15 AM	3	31	0	0	34	32	92	0	62	0	0	0	254
7:30 AM	1	33	0	0	34	34	130	0	61	0	0	0	293
7:45 AM	0	36	0	0	68	37	112	0	85	0	0	0	338
8:00 AM	2	33	0	0	51	34	117	0	85	0	0	0	322
8:15 AM	1	40	0	0	35	36	80	0	79	0	0	0	271
8:30 AM	0	51	0	0	45	34	55	0	59	0	0	0	244
8:45 AM	2	50	0	0	43	33	87	0	60	0	0	0	275
TOTAL VOLUMES :	9	318	0	0	336	259	743	0	555	0	0	0	2220
APPROACH %'s :	2.75%	97.25%	0.00%	0.00%	56.47%	43.53%	57.24%	0.00%	42.76%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	4	142	0	0	188	141	439	0	310	0	0	0	1224
PEAK HR FACTOR :	0.890		0.783			0.927			0.000			0.905	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-4346-007

Day: Wednesday

City: Otay Mesa

Date: 11/16/2016

PM

NS/EW Streets:	La Media Rd			La Media Rd			SR 905 EB Ramps			SR 905 EB Ramps			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	0	0	2	1	2	0	2	0	0	0	
4:00 PM	3	108	0	0	47	53	59	0	44	0	0	0	314
4:15 PM	2	82	0	0	66	45	57	0	57	0	0	0	309
4:30 PM	5	95	0	0	61	56	63	0	62	0	0	0	342
4:45 PM	5	80	0	0	56	59	73	0	46	0	0	0	319
5:00 PM	6	108	0	0	67	83	55	0	33	0	0	0	352
5:15 PM	6	84	0	0	52	63	70	0	42	0	0	0	317
5:30 PM	2	67	0	0	48	47	43	0	29	0	0	0	236
5:45 PM	2	66	0	0	40	46	52	0	31	0	0	0	237
TOTAL VOLUMES :	31	690	0	0	437	452	472	0	344	0	0	0	2426
APPROACH %'s :	4.30%	95.70%	0.00%	0.00%	49.16%	50.84%	57.84%	0.00%	42.16%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	22	367	0	0	236	261	261	0	183	0	0	0	1330
PEAK HR FACTOR :	0.853		0.828			0.888			0.000			0.945	

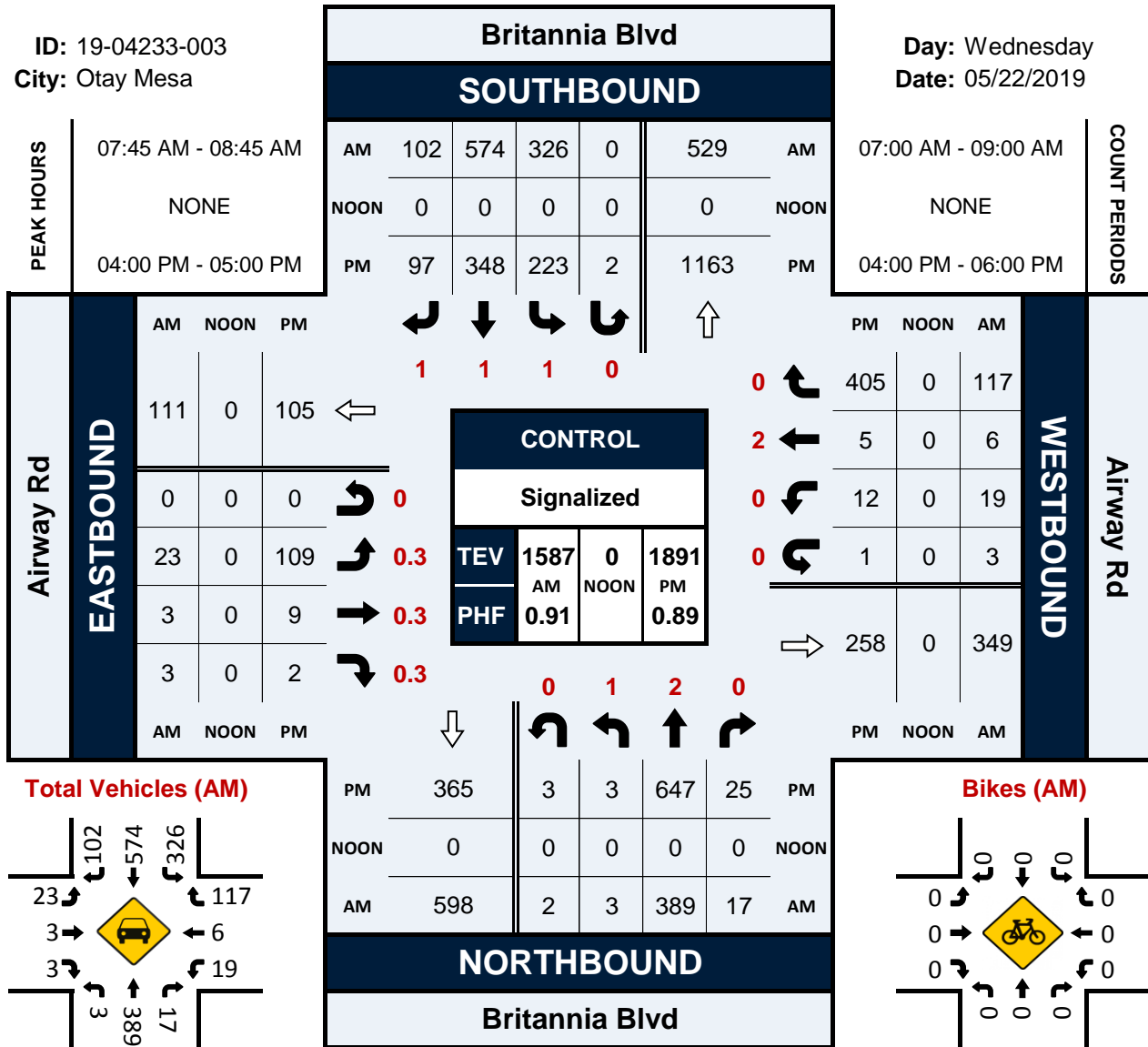
CONTROL : Signalized

Britannia Blvd & Airway Rd

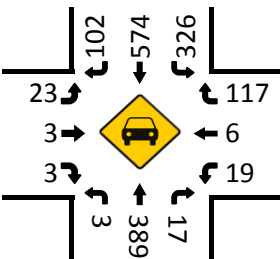
Peak Hour Turning Movement Count

ID: 19-04233-003
City: Otay Mesa

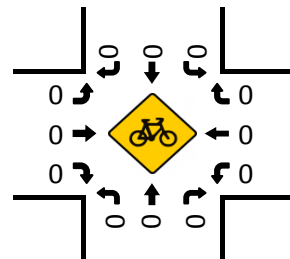
Day: Wednesday
Date: 05/22/2019



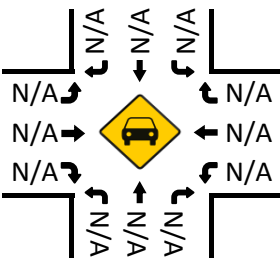
Total Vehicles (AM)



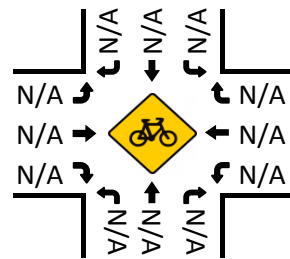
Bikes (AM)



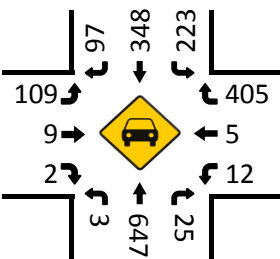
Total Vehicles (Noon)



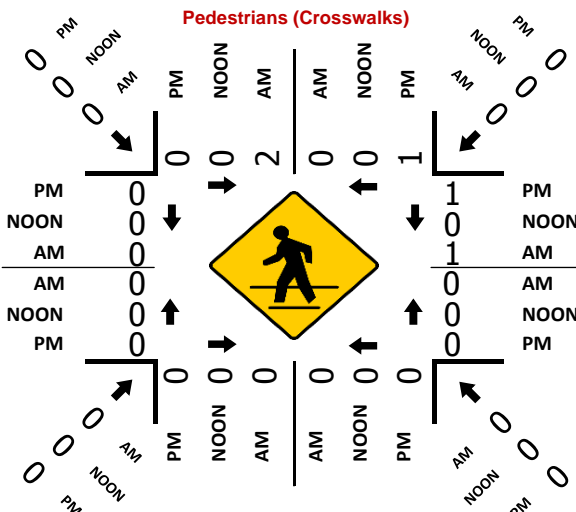
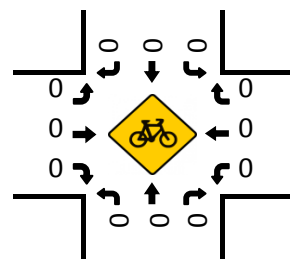
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

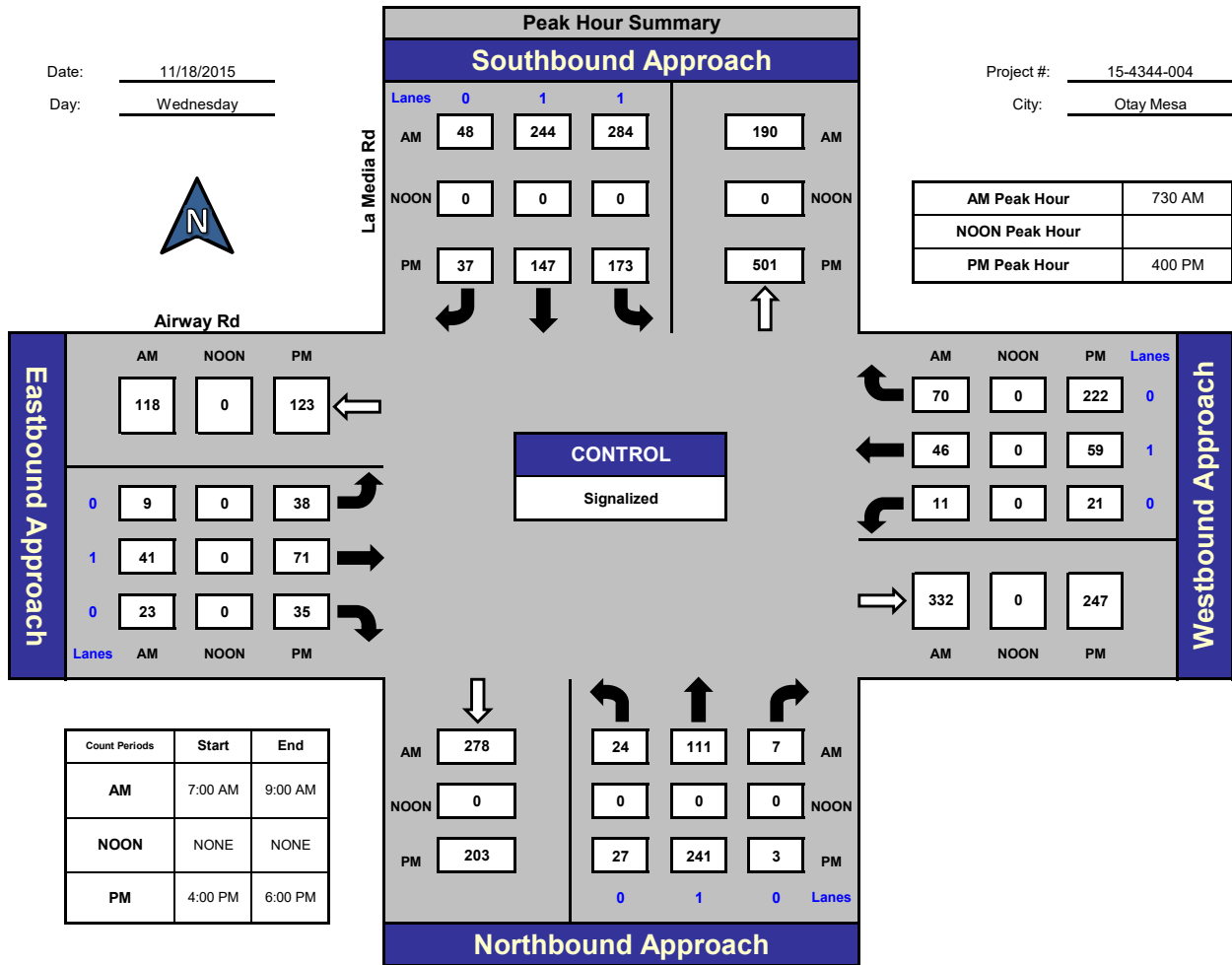
La Media Rd and Airway Rd, Otay Mesa

Date: 11/18/2015

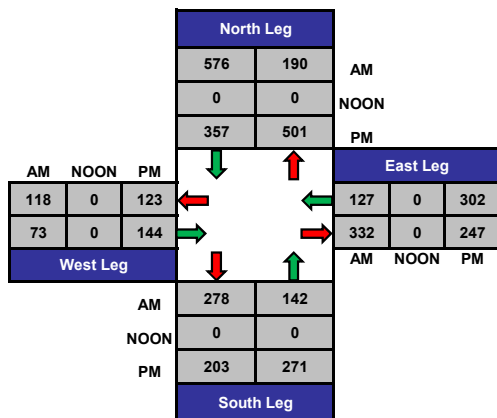
Day: Wednesday

Project #: 15-4344-004

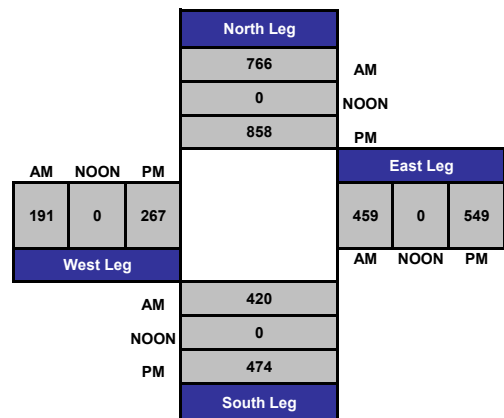
City: Otay Mesa



Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-4344-004

Day: Wednesday

City: Otay Mesa

Date: 11/18/2015

		AM												
NS/EW Streets:	La Media Rd			La Media Rd			Airway Rd			Airway Rd				
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	
	0	1	0	1	1	0	0	1	0	0	1	0		
7:00 AM	2	26	1	44	50	7	2	3	5	3	8	10	161	
7:15 AM	7	29	0	64	37	6	4	5	7	3	3	17	182	
7:30 AM	4	26	1	69	66	14	1	13	3	1	9	11	218	
7:45 AM	5	25	2	80	64	13	2	7	8	2	12	18	238	
8:00 AM	8	26	2	77	60	11	2	10	6	4	14	21	241	
8:15 AM	7	34	2	58	54	10	4	11	6	4	11	20	221	
8:30 AM	10	31	2	46	55	6	2	12	4	5	10	30	213	
8:45 AM	8	32	1	51	46	9	9	16	6	4	15	29	226	
TOTAL VOLUMES :	51	229	11	489	432	76	26	77	45	26	82	156	1700	
APPROACH %'s :	17.53%	78.69%	3.78%	49.05%	43.33%	7.62%	17.57%	52.03%	30.41%	9.85%	31.06%	59.09%		
PEAK HR START TIME :	730 AM												TOTAL	
PEAK HR VOL :	24	111	7	284	244	48	9	41	23	11	46	70	918	
PEAK HR FACTOR :	0.826			0.917			0.869			0.814			0.952	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-4344-004

Day: Wednesday

City: Otay Mesa

Date: 11/18/2015

		PM													
NS/EW Streets:		La Media Rd			La Media Rd			Airway Rd			Airway Rd				
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	
		0	1	0	1	1	0	0	1	0	0	1	0		
	4:00 PM	8	65	0	43	37	7	9	20	10	8	16	53	276	
	4:15 PM	10	59	3	43	47	6	5	19	8	5	20	60	285	
	4:30 PM	5	56	0	45	39	10	13	19	7	2	9	60	265	
	4:45 PM	4	61	0	42	24	14	11	13	10	6	14	49	248	
	5:00 PM	3	65	0	39	28	3	10	16	0	3	14	76	257	
	5:15 PM	6	48	2	33	17	5	6	11	1	6	19	45	199	
	5:30 PM	8	42	2	46	7	6	2	21	1	6	13	32	186	
	5:45 PM	4	46	4	42	17	5	7	10	1	4	8	39	187	
TOTAL VOLUMES :		48	442	11	333	216	56	63	129	38	40	113	414	1903	
APPROACH %'s :		9.58%	88.22%	2.20%	55.04%	35.70%	9.26%	27.39%	56.09%	16.52%	7.05%	19.93%	73.02%		
PEAK HR START TIME :		400 PM												TOTAL	
PEAK HR VOL :		27	241	3	173	147	37	38	71	35	21	59	222	1074	
PEAK HR FACTOR :					0.928			0.930			0.923			0.888	0.942

CONTROL : Signalized

VOLUME

Britannia Blvd Bet. SR-905 WB Ramps & SR-905 EB Ramps

Day: Wednesday
Date: 5/22/2019

City: Otay Mesa
Project #: CA19_4232_001

DAILY TOTALS					NB	SB	EB	WB	Total
					11,976	9,501	0	0	21,477

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	72	13			85	12:00	214	172			386
00:15	63	20			83	12:15	211	182			393
00:30	65	7			72	12:30	179	171			350
00:45	39	239	13	53	52 292	12:45	183	787	197	722	380 1509
01:00	65	14			79	13:00	195	172			367
01:15	17	15			32	13:15	193	180			373
01:30	29	10			39	13:30	238	177			415
01:45	7	118	10	49	17 167	13:45	236	862	168	697	404 1559
02:00	33	17			50	14:00	211	192			403
02:15	34	3			37	14:15	218	180			398
02:30	40	14			54	14:30	196	192			388
02:45	30	137	19	53	49 190	14:45	180	805	224	788	404 1593
03:00	38	19			57	15:00	201	223			424
03:15	19	24			43	15:15	211	194			405
03:30	31	15			46	15:30	228	209			437
03:45	23	111	6	64	29 175	15:45	230	870	175	801	405 1671
04:00	28	18			46	16:00	252	133			385
04:15	45	28			73	16:15	224	161			385
04:30	37	23			60	16:30	227	194			421
04:45	52	162	25	94	77 256	16:45	213	916	160	648	373 1564
05:00	55	34			89	17:00	205	176			381
05:15	88	35			123	17:15	236	160			396
05:30	72	43			115	17:30	156	135			291
05:45	82	297	64	176	146 473	17:45	155	752	97	568	252 1320
06:00	112	58			170	18:00	138	131			269
06:15	109	65			174	18:15	101	81			182
06:30	99	99			198	18:30	82	102			184
06:45	157	477	110	332	267 809	18:45	107	428	90	404	197 832
07:00	119	139			258	19:00	91	84			175
07:15	147	90			237	19:15	84	75			159
07:30	158	133			291	19:30	74	41			115
07:45	148	572	150	512	298 1084	19:45	73	322	33	233	106 555
08:00	161	159			320	20:00	55	46			101
08:15	130	162			292	20:15	93	61			154
08:30	151	172			323	20:30	89	49			138
08:45	144	586	141	634	285 1220	20:45	97	334	27	183	124 517
09:00	151	156			307	21:00	70	64			134
09:15	179	152			331	21:15	62	29			91
09:30	194	170			364	21:30	86	41			127
09:45	194	718	156	634	350 1352	21:45	99	317	25	159	124 476
10:00	192	195			387	22:00	86	24			110
10:15	159	137			296	22:15	79	32			111
10:30	166	180			346	22:30	70	30			100
10:45	207	724	187	699	394 1423	22:45	75	310	39	125	114 435
11:00	211	194			405	23:00	71	17			88
11:15	213	198			411	23:15	66	25			91
11:30	214	218			432	23:30	92	13			105
11:45	209	847	186	796	395 1643	23:45	56	285	22	77	78 362
TOTALS	4988	4096			9084	TOTALS	6988	5405			12393
SPLIT %	54.9%	45.1%			42.3%	SPLIT %	56.4%	43.6%			57.7%

DAILY TOTALS					NB	SB	EB	WB	Total
					11,976	9,501	0	0	21,477

AM Peak Hour	11:15	10:45			11:00	PM Peak Hour	15:30	14:45		15:00	
AM Pk Volume	850	797			1643	PM Pk Volume	934	850		1671	
Pk Hr Factor	0.993	0.914			0.951	Pk Hr Factor	0.927	0.949		0.956	
7 - 9 Volume	1158	1146	0	0	2304	4 - 6 Volume	1668	1216	0	0	2884
7 - 9 Peak Hour	07:15	07:45			07:45	4 - 6 Peak Hour	16:00	16:15			16:30
7 - 9 Pk Volume	614	643	0	0	1233	4 - 6 Pk Volume	916	691	0	0	1571
Pk Hr Factor	0.953	0.935	0.000	0.000	0.954	Pk Hr Factor	0.909	0.890	0.000	0.000	0.933

VOLUME

Britannia Blvd Bet. SR-905 EB Ramps & Airway Rd

Day: Wednesday
Date: 5/22/2019City: Otay Mesa
Project #: CA19_4232_002

DAILY TOTALS					NB	SB	EB		WB	Total		
					15,516	16,544	0		0	32,060		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
00:00	88	51			139	12:00	287	291			578	
00:15	75	62			137	12:15	260	303			563	
00:30	70	48			118	12:30	259	293			552	
00:45	52	285	32	193	84	478	245	1051	288	1175	533	2226
01:00	72	33			105	13:00	284	289			573	
01:15	25	25			50	13:15	275	268			543	
01:30	35	26			61	13:30	292	278			570	
01:45	13	145	33	117	46	262	305	1156	271	1106	576	2262
02:00	38	31			69	14:00	274	271			545	
02:15	51	30			81	14:15	286	294			580	
02:30	41	33			74	14:30	270	251			521	
02:45	41	171	51	145	92	316	276	1106	282	1098	558	2204
03:00	47	58			105	15:00	269	290			559	
03:15	27	63			90	15:15	304	318			622	
03:30	35	50			85	15:30	315	277			592	
03:45	27	136	66	237	93	373	346	1234	244	1129	590	2363
04:00	32	70			102	16:00	374	215			589	
04:15	58	82			140	16:15	329	227			556	
04:30	44	89			133	16:30	335	239			574	
04:45	44	178	118	359	162	537	335	1373	228	909	563	2282
05:00	57	94			151	17:00	279	221			500	
05:15	86	113			199	17:15	328	188			516	
05:30	62	170			232	17:30	256	170			426	
05:45	86	291	231	608	317	899	242	1105	121	700	363	1805
06:00	105	174			279	18:00	210	147			357	
06:15	108	208			316	18:15	131	116			247	
06:30	105	270			375	18:30	129	110			239	
06:45	129	447	349	1001	478	1448	131	601	107	480	238	1081
07:00	128	279			407	19:00	125	87			212	
07:15	147	237			384	19:15	103	90			193	
07:30	169	307			476	19:30	105	79			184	
07:45	165	609	391	1214	556	1823	89	422	69	325	158	747
08:00	177	280			457	20:00	54	64			118	
08:15	158	279			437	20:15	95	91			186	
08:30	205	291			496	20:30	94	73			167	
08:45	204	744	292	1142	496	1886	118	361	94	322	212	683
09:00	215	255			470	21:00	87	93			180	
09:15	234	239			473	21:15	76	116			192	
09:30	291	278			569	21:30	81	109			190	
09:45	250	990	253	1025	503	2015	107	351	93	411	200	762
10:00	255	294			549	22:00	103	94			197	
10:15	216	215			431	22:15	83	88			171	
10:30	230	271			501	22:30	83	72			155	
10:45	266	967	261	1041	527	2008	78	347	106	360	184	707
11:00	286	314			600	23:00	76	82			158	
11:15	298	276			574	23:15	71	68			139	
11:30	269	303			572	23:30	100	57			157	
11:45	281	1134	282	1175	563	2309	65	312	65	272	130	584
TOTALS	6097	8257			14354	TOTALS	9419	8287			17706	
SPLIT %	42.5%	57.5%			44.8%	SPLIT %	53.2%	46.8%			55.2%	

DAILY TOTALS					NB	SB	EB		WB	Total	
					15,516	16,544	0		0	32,060	
AM Peak Hour	11:15	07:30			11:00	PM Peak Hour	15:45	12:00	15:15		
AM Pk Volume	1135	1257			2309	PM Pk Volume	1384	1175	2393		
Pk Hr Factor	0.952	0.804			0.962	Pk Hr Factor	0.925	0.969	0.962		
7 - 9 Volume	1353	2356	0	0	3709	4 - 6 Volume	2478	1609	0	0	4087
7 - 9 Peak Hour	08:00	07:30			07:45	4 - 6 Peak Hour	16:00	16:15			16:00
7 - 9 Pk Volume	744	1257	0	0	1946	4 - 6 Pk Volume	1373	915	0	0	2282
Pk Hr Factor	0.907	0.804	0.000	0.000	0.875	Pk Hr Factor	0.918	0.957	0.000	0.000	0.969

VOLUME

La Media Rd S/O St Andrews Ave

Day: Thursday
Date: 6/6/2019

City: Otay Mesa
Project #: CA19_4268_007

DAILY TOTALS					NB	SB	EB	WB	Total		
					7,502	10,809	0	0	18,311		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
0:00	17	23			40	12:00	121	185			306
0:15	12	21			33	12:15	149	183			332
0:30	21	27			48	12:30	108	178			286
0:45	15	65	24	95	39	12:45	118	496	189	735	307
1:00	17	20			37	13:00	130	158			288
1:15	17	13			30	13:15	103	200			303
1:30	21	18			39	13:30	104	182			286
1:45	21	76	24	75	45	13:45	125	462	164	704	289
2:00	20	28			48	14:00	141	181			322
2:15	16	43			59	14:15	125	191			316
2:30	29	41			70	14:30	110	173			283
2:45	18	83	25	137	43	14:45	122	498	177	722	299
3:00	17	31			48	15:00	133	179			312
3:15	29	27			56	15:15	127	199			326
3:30	37	33			70	15:30	140	193			333
3:45	49	132	30	121	79	15:45	135	535	198	769	333
4:00	27	24			51	16:00	142	250			392
4:15	33	32			65	16:15	136	201			337
4:30	40	35			75	16:30	153	233			386
4:45	36	136	48	139	84	16:45	117	548	208	892	325
5:00	50	55			105	17:00	133	246			379
5:15	58	63			121	17:15	129	207			336
5:30	71	69			140	17:30	112	171			283
5:45	66	245	83	270	149	17:45	94	468	178	802	272
6:00	75	82			157	18:00	100	209			309
6:15	74	70			144	18:15	102	170			272
6:30	94	93			187	18:30	79	136			215
6:45	113	356	99	344	212	18:45	72	353	151	666	223
7:00	82	126			208	19:00	75	152			227
7:15	94	114			208	19:15	48	115			163
7:30	110	126			236	19:30	57	103			160
7:45	146	432	132	498	278	19:45	62	242	100	470	162
8:00	111	128			239	20:00	49	96			145
8:15	97	133			230	20:15	57	75			132
8:30	97	150			247	20:30	50	82			132
8:45	139	444	142	553	281	20:45	58	214	63	316	121
9:00	102	130			232	21:00	42	89			131
9:15	113	139			252	21:15	51	73			124
9:30	109	158			267	21:30	51	68			119
9:45	125	449	137	564	262	21:45	42	186	61	291	103
10:00	102	145			247	22:00	33	60			93
10:15	103	158			261	22:15	34	62			96
10:30	107	144			251	22:30	26	55			81
10:45	97	409	152	599	249	22:45	21	114	34	211	55
11:00	109	167			276	23:00	29	33			62
11:15	116	189			305	23:15	15	29			44
11:30	127	172			299	23:30	29	31			60
11:45	110	462	175	703	285	23:45	24	97	40	133	64
TOTALS	3289	4098			7387	TOTALS	4213	6711			10924
SPLIT %	44.5%	55.5%			40.3%	SPLIT %	38.6%	61.4%			59.7%

DAILY TOTALS					NB	SB	EB	WB	Total
					7,502	10,809	0	0	18,311
AM Peak Hour	11:30	11:15			11:30	PM Peak Hour	15:45	16:30	15:45
AM Pk Volume	507	721			1222	PM Pk Volume	566	894	1448
Pk Hr Factor	0.851	0.954			0.920	Pk Hr Factor	0.925	0.909	0.923
7 - 9 Volume	876	1051	0	0	1927	4 - 6 Volume	1016	1694	2710
7 - 9 Peak Hour	7:30	8:00			8:00	4 - 6 Peak Hour	16:00	16:30	16:00
7 - 9 Pk Volume	464	553	0	0	997	4 - 6 Pk Volume	548	894	1440
Pk Hr Factor	0.795	0.922	0.000	0.000	0.887	Pk Hr Factor	0.895	0.909	0.918

VOLUME

Airway Rd E/O La Media Rd

Day: Wednesday
Date: 5/22/2019

City: Otay Mesa
Project #: CA19_4232_009

DAILY TOTALS					NB	SB	EB	WB	Total					
					0	0	2,353	3,329	5,682					
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL			
00:00			3	3	6	12:00			36	72	108			
00:15			2	3	5	12:15			44	46	90			
00:30			9	3	12	12:30			51	75	126			
00:45			4	18	2	11	12:45		59	190	60	253	119	443
01:00			3	1	4	13:00			47	57	104			
01:15			2	4	6	13:15			42	68	110			
01:30			0	4	4	13:30			37	62	99			
01:45			5	10	6	15	13:45		48	174	63	250	111	424
02:00			7	1	8	14:00			52	72	124			
02:15			5	4	9	14:15			47	67	114			
02:30			4	3	7	14:30			35	89	124			
02:45			6	22	6	14	14:45		43	177	70	298	113	475
03:00			8	4	12	15:00			30	69	99			
03:15			7	10	17	15:15			36	53	89			
03:30			8	5	13	15:30			31	69	100			
03:45			7	30	10	29	15:45		42	139	73	264	115	403
04:00			7	4	11	16:00			46	61	107			
04:15			7	11	18	16:15			49	73	122			
04:30			16	8	24	16:30			44	84	128			
04:45			7	37	11	34	16:45		34	173	74	292	108	465
05:00			6	6	12	17:00			24	86	110			
05:15			8	18	26	17:15			42	72	114			
05:30			21	18	39	17:30			35	68	103			
05:45			22	57	11	53	17:45		25	126	77	303	102	429
06:00			21	13	34	18:00			24	56	80			
06:15			24	11	35	18:15			28	54	82			
06:30			19	21	40	18:30			24	55	79			
06:45			45	109	21	66	18:45		15	91	33	198	48	289
07:00			38	26	64	19:00			12	36	48			
07:15			28	25	53	19:15			9	32	41			
07:30			35	21	56	19:30			20	28	48			
07:45			54	155	38	110	19:45		10	51	27	123	37	174
08:00			56	28	84	20:00			6	25	31			
08:15			41	42	83	20:15			16	13	29			
08:30			44	47	91	20:30			9	20	29			
08:45			47	188	51	168	20:45		12	43	11	69	23	112
09:00			49	59	108	21:00			6	13	19			
09:15			52	53	105	21:15			6	13	19			
09:30			31	58	89	21:30			11	13	24			
09:45			45	177	49	219	21:45		7	30	5	44	12	74
10:00			38	54	92	22:00			6	2	8			
10:15			28	61	89	22:15			7	6	13			
10:30			40	65	105	22:30			6	6	12			
10:45			30	136	61	241	22:45		4	23	4	18	8	41
11:00			40	61	101	23:00			3	0	3			
11:15			43	69	112	23:15			5	3	8			
11:30			45	67	112	23:30			6	1	7			
11:45			45	173	53	250	23:45		10	24	3	7	13	31
TOTALS			1112	1210	2322	TOTALS			1241	2119	3360			
SPLIT %			47.9%	52.1%	40.9%	SPLIT %			36.9%	63.1%	59.1%			

DAILY TOTALS					NB	SB	EB	WB	Total
					0	0	2,353	3,329	5,682

AM Peak Hour	07:45	11:15	11:15	PM Peak Hour	12:15	16:15	14:00				
AM Pk Volume	195	261	430	PM Pk Volume	201	317	475				
Pk Hr Factor	0.871	0.906	0.960	Pk Hr Factor	0.852	0.922	0.958				
7 - 9 Volume	0	0	343	278	621	4 - 6 Volume	0	0	299	595	894
7 - 9 Peak Hour	07:45	08:00	08:00	4 - 6 Peak Hour	16:00	16:15	16:15				
7 - 9 Pk Volume	0	0	195	168	356	4 - 6 Pk Volume	0	0	173	317	468
Pk Hr Factor	0.000	0.000	0.871	0.824	0.908	Pk Hr Factor	0.000	0.000	0.883	0.922	0.914

VOLUME

La Media Rd Bet. SR-905 EB Ramps & Airway Rd

Day: Wednesday
Date: 5/22/2019

City: Otay Mesa
Project #: CA19_4232_008

DAILY TOTALS					NB	SB	EB	WB	Total
					6,288	7,576	0	0	13,864

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	10	15			25	12:00	113	131			244
00:15	20	16			36	12:15	110	138			248
00:30	7	19			26	12:30	117	130			247
00:45	13	50	16	66	29 116	12:45	118	458	144	543	262 1001
01:00	11	13			24	13:00	106	135			241
01:15	12	10			22	13:15	108	135			243
01:30	20	13			33	13:30	136	119			255
01:45	14	57	16	52	30 109	13:45	97	447	119	508	216 955
02:00	7	17			24	14:00	111	157			268
02:15	19	15			34	14:15	109	137			246
02:30	17	9			26	14:30	121	154			275
02:45	17	60	18	59	35 119	14:45	141	482	130	578	271 1060
03:00	20	31			51	15:00	114	108			222
03:15	29	20			49	15:15	118	144			262
03:30	31	31			62	15:30	171	109			280
03:45	27	107	22	104	49 211	15:45	118	521	154	515	272 1036
04:00	32	28			60	16:00	94	135			229
04:15	37	13			50	16:15	126	150			276
04:30	38	29			67	16:30	118	102			220
04:45	45	152	29	99	74 251	16:45	94	432	126	513	220 945
05:00	30	13			43	17:00	146	123			269
05:15	53	22			75	17:15	110	126			236
05:30	49	41			90	17:30	102	128			230
05:45	40	172	57	133	97 305	17:45	94	452	119	496	213 948
06:00	27	53			80	18:00	88	111			199
06:15	32	60			92	18:15	82	90			172
06:30	40	66			106	18:30	77	103			180
06:45	50	149	93	272	143 421	18:45	75	322	66	370	141 692
07:00	46	84			130	19:00	54	67			121
07:15	41	91			132	19:15	60	44			104
07:30	50	105			155	19:30	54	54			108
07:45	61	198	155	435	216 633	19:45	41	209	33	198	74 407
08:00	59	139			198	20:00	70	28			98
08:15	60	114			174	20:15	35	26			61
08:30	91	115			206	20:30	37	26			63
08:45	96	306	149	517	245 823	20:45	54	196	23	103	77 299
09:00	82	150			232	21:00	39	20			59
09:15	113	142			255	21:15	27	20			47
09:30	106	130			236	21:30	31	13			44
09:45	95	396	146	568	241 964	21:45	17	114	15	68	32 182
10:00	88	147			235	22:00	9	20			29
10:15	94	160			254	22:15	21	26			47
10:30	130	128			258	22:30	17	12			29
10:45	104	416	142	577	246 993	22:45	20	67	16	74	36 141
11:00	116	134			250	23:00	14	6			20
11:15	140	153			293	23:15	5	22			27
11:30	108	205			313	23:30	5	14			19
11:45	125	489	174	666	299 1155	23:45	12	36	20	62	32 98
TOTALS	2552	3548			6100	TOTALS	3736	4028			7764
SPLIT %	41.8%	58.2%			44.0%	SPLIT %	48.1%	51.9%			56.0%

DAILY TOTALS					NB	SB	EB	WB	Total
					6,288	7,576	0	0	13,864

AM Peak Hour	10:30	11:00			11:00	PM Peak Hour	14:45	14:00			14:00
AM Pk Volume	490	666			1155	PM Pk Volume	544	578			1060
Pk Hr Factor	0.875	0.812			0.923	Pk Hr Factor	0.795	0.920			0.964
7 - 9 Volume	504	952	0	0	1456	4 - 6 Volume	884	1009	0	0	1893
7 - 9 Peak Hour	08:00	07:45			08:00	4 - 6 Peak Hour	16:15	16:00			16:15
7 - 9 Pk Volume	306	523	0	0	823	4 - 6 Pk Volume	484	513	0	0	985
Pk Hr Factor	0.797	0.844	0.000	0.000	0.840	Pk Hr Factor	0.829	0.855	0.000	0.000	0.892

VOLUME

Airway Rd Bet. Britannia Blvd & La Media Rd

Day: Wednesday
Date: 11/18/2015City: Otay Mesa
Project #: CA15_4345_013

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	1,620	1,563	3,183		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			3	3	6	12:00			31	30	61
00:15			2	3	5	12:15			31	34	65
00:30			2	1	3	12:30			32	28	60
00:45			1	8	2	12:45			25	119	27
01:00			5	0	5	13:00			26	37	63
01:15			3	2	5	13:15			41	40	81
01:30			2	1	3	13:30			32	30	62
01:45			2	12	2	13:45			44	143	24
02:00			2	2	4	14:00			37	35	72
02:15			3	1	4	14:15			42	32	74
02:30			2	1	3	14:30			30	41	71
02:45			0	7	1	14:45			31	140	26
03:00			2	2	4	15:00			42	36	78
03:15			6	4	10	15:15			34	30	64
03:30			2	4	6	15:30			32	29	61
03:45			3	13	8	15:45			53	161	39
04:00			0	2	2	16:00			41	38	79
04:15			1	2	3	16:15			40	32	72
04:30			2	2	4	16:30			42	17	59
04:45			0	3	7	16:45			27	150	20
05:00			1	4	5	17:00			38	24	62
05:15			4	5	9	17:15			24	29	53
05:30			2	5	7	17:30			18	20	38
05:45			2	9	12	17:45			18	98	19
06:00			10	12	22	18:00			18	10	28
06:15			10	8	18	18:15			17	13	30
06:30			10	17	27	18:30			9	12	21
06:45			7	37	15	18:45			13	57	14
07:00			12	11	23	19:00			22	6	28
07:15			13	19	32	19:15			9	12	21
07:30			14	20	34	19:30			19	16	35
07:45			16	55	63	19:45			10	60	5
08:00			16	29	45	20:00			9	1	10
08:15			18	29	47	20:15			5	3	8
08:30			32	28	60	20:30			7	4	11
08:45			30	96	63	20:45			5	26	2
09:00			25	21	46	21:00			6	3	9
09:15			32	33	65	21:15			3	4	7
09:30			35	34	69	21:30			1	8	9
09:45			25	117	65	21:45			4	14	6
10:00			40	27	67	22:00			4	11	15
10:15			25	20	45	22:15			4	5	9
10:30			32	35	67	22:30			1	5	6
10:45			34	131	52	22:45			0	9	9
11:00			32	41	73	23:00			5	2	7
11:15			38	30	68	23:15			2	2	4
11:30			32	27	59	23:30			4	4	8
11:45			40	142	73	23:45			2	13	1
TOTALS			630	688	1318	TOTALS			990	875	1865
SPLIT %			47.8%	52.2%	41.4%	SPLIT %			53.1%	46.9%	58.6%

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	1,620	1,563	3,183		
AM Peak Hour			11:00	09:15	11:00	PM Peak Hour			15:45	15:30	15:30
AM Pk Volume			142	134	273	PM Pk Volume			176	138	304
Pk Hr Factor			0.888	0.838	0.935	Pk Hr Factor			0.830	0.885	0.826
7 - 9 Volume	0	0	151	216	367	4 - 6 Volume	0	0	248	199	447
7 - 9 Peak Hour			08:00	07:45	07:45	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	96	133	215	4 - 6 Pk Volume	0	0	150	107	257
Pk Hr Factor	0.000	0.000	0.750	0.707	0.853	Pk Hr Factor	0.000	0.000	0.893	0.704	0.813

Historical Traffic Count (ADT) Comparison

Segment Locations	2015/2016	2019	%	% per year
La Media Road between SR 905 Ramps ^a	16,415	18,311	11.6%	3.9%
La Media road between SR 905 and Airway Road ^b	14,265	13,864	-2.8%	-0.7%
			avg	1.6%
			used	2.0%

Airway Road - east of La Media Road ^c	7,025	5,682	-19.1%	-4.8%
			used	2.0%

Footnotes:

- a. The 2016 ADT on this segment obtained from the Sunroad Otay Mesa Transportation Impact Study
- b. The 2015 ADT on this segment obtained from the Plaza La Media Transportation Impact Study
- c. The 2015 ADT on this segment obtained from the Plaza La Media Transportation Impact Study

General Notes:

- 1. The 2% growth factor was applied to the La Media Road study intersections

Table 3-2 Existing Conditions Roadway Segment LOS Summary

ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	LOS E CAPACITY	EXISTING		
			ADT (b)	V/C RATIO (c)	LOS
Otay Mesa Road					
Sanyo Road to Harvest Road	4 Lane Collector	30,000	9,639	0.321	A
Harvest Road to SR-125 NB Ramp	4 Lane Collector	30,000	9,795	0.327	A
SR-125 NB Ramp to SR-125 SB Ramp	5 Lane Collector	37,500	12,419	0.331	A
SR-125 SB Ramp to Piper Ranch Road	5 Lane Collector	37,500	16,170	0.431	B
Piper Ranch Road to Avenida Costa Azul/Project Access #2	5 Lane Prime Arterial	50,000	14,093	0.282	A
Avenida Costa Azul/Project Access #2 to La Media Road	5 Lane Prime Arterial	50,000	14,093	0.282	A
La Media Road to Otay Mesa Center Road	6 Lane Prime Arterial	60,000	9,921	0.165	A
Otay Mesa Center Road to Gailles Boulevard	6 Lane Prime Arterial	60,000	10,399	0.173	A
Gailles Boulevard to Britannia Boulevard	6 Lane Prime Arterial	60,000	10,802	0.180	A
Britannia Boulevard to Cactus Road	6 Lane Prime Arterial	60,000	11,652	0.194	A
Cactus Road to Heritage Road	6 Lane Prime Arterial	60,000	10,762	0.179	A
Heritage Road to Corporate Center Drive	6 Lane Prime Arterial	60,000	11,817	0.197	A
Corporate Center Drive to Ocean View Hills Parkway	6 Lane Prime Arterial	60,000	16,715	0.279	A
La Media Road					
Otay Mesa Road to SR-905	5 Lane Collector	37,500	18,170	0.485	C
SR-905 WB Ramps to SR-905 EB Ramps	5 Lane Collector	37,500	16,415	0.438	B

(a) Existing roads street classification is based on field observations. The capacity for a 5 Lane Prime Arterial was estimated using the 6 Lane Prime Arterial capacities as a basis.

(b) Average daily traffic (ADT) volumes for the roadway segments were collected by National Data and Surveying Services in November 2016, January 2017, and February 2018.

(c) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

VOLUME

La Media Rd Bet. I-905 EB Off Ramp & Airway Rd

Day: Wednesday
Date: 11/18/2015

City: Otay Mesa
Project #: CA15_4345_010

DAILY TOTALS					NB	SB	EB	WB	Total		
					7,168	7,097	0	0	14,265		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	29	22			51	12:00	137	137			274
00:15	8	19			27	12:15	141	143			284
00:30	13	29			42	12:30	145	154			299
00:45	17	67	15	85	32 152	12:45	128	551	136	570	264 1121
01:00	32	19			51	13:00	118	114			232
01:15	32	12			44	13:15	136	115			251
01:30	30	10			40	13:30	171	127			298
01:45	28	122	14	55	42 177	13:45	135	560	138	494	273 1054
02:00	30	12			42	14:00	162	156			318
02:15	25	20			45	14:15	127	140			267
02:30	19	25			44	14:30	148	116			264
02:45	25	99	29	86	54 185	14:45	131	568	128	540	259 1108
03:00	46	38			84	15:00	110	105			215
03:15	32	38			70	15:15	129	133			262
03:30	40	28			68	15:30	142	108			250
03:45	24	142	48	152	72 294	15:45	136	517	111	457	247 974
04:00	18	15			33	16:00	117	79			196
04:15	35	20			55	16:15	126	101			227
04:30	45	50			95	16:30	140	88			228
04:45	45	143	33	118	78 261	16:45	110	493	89	357	199 850
05:00	58	30			88	17:00	148	72			220
05:15	34	48			82	17:15	107	54			161
05:30	50	46			96	17:30	75	53			128
05:45	47	189	84	208	131 397	17:45	89	419	68	247	157 666
06:00	34	64			98	18:00	127	50			177
06:15	56	85			141	18:15	75	72			147
06:30	57	91			148	18:30	122	56			178
06:45	79	226	95	335	174 561	18:45	95	419	66	244	161 663
07:00	39	98			137	19:00	103	66			169
07:15	50	113			163	19:15	67	46			113
07:30	40	143			183	19:30	86	80			166
07:45	40	169	167	521	207 690	19:45	98	354	73	265	171 619
08:00	53	145			198	20:00	78	49			127
08:15	52	113			165	20:15	58	40			98
08:30	67	124			191	20:30	54	39			93
08:45	59	231	95	477	154 708	20:45	30	220	31	159	61 379
09:00	125	106			231	21:00	27	28			55
09:15	101	110			211	21:15	27	32			59
09:30	109	98			207	21:30	37	38			75
09:45	93	428	119	433	212 861	21:45	28	119	28	126	56 245
10:00	83	104			187	22:00	44	24			68
10:15	101	131			232	22:15	28	35			63
10:30	125	127			252	22:30	16	31			47
10:45	142	451	105	467	247 918	22:45	20	108	21	111	41 219
11:00	131	129			260	23:00	40	23			63
11:15	103	116			219	23:15	28	32			60
11:30	132	103			235	23:30	22	32			54
11:45	98	464	133	481	231 945	23:45	19	109	22	109	41 218
TOTALS	2731	3418			6149	TOTALS	4437	3679			8116
SPLIT %	44.4%	55.6%			43.1%	SPLIT %	54.7%	45.3%			56.9%

DAILY TOTALS					NB	SB	EB	WB	Total
					7,168	7,097	0	0	14,265

AM Peak Hour	11:45	07:15			11:45	PM Peak Hour	13:15	12:00			13:30
AM Pk Volume	521	568			1088	PM Pk Volume	604	570			1156
Pk Hr Factor	0.898	0.850			0.910	Pk Hr Factor	0.883	0.925			0.909
7 - 9 Volume	400	998	0	0	1398	4 - 6 Volume	912	604	0	0	1516
7 - 9 Peak Hour	08:00	07:15			07:45	4 - 6 Peak Hour	16:15	16:00			16:15
7 - 9 Pk Volume	231	568	0	0	761	4 - 6 Pk Volume	524	357	0	0	874
Pk Hr Factor	0.862	0.850	0.000	0.000	0.919	Pk Hr Factor	0.885	0.884	0.000	0.000	0.958

VOLUME

Airway Rd Bet. La Media Rd & Harvest Rd

Day: Wednesday
Date: 11/18/2015

City: Otay Mesa
Project #: CA15_4345_014

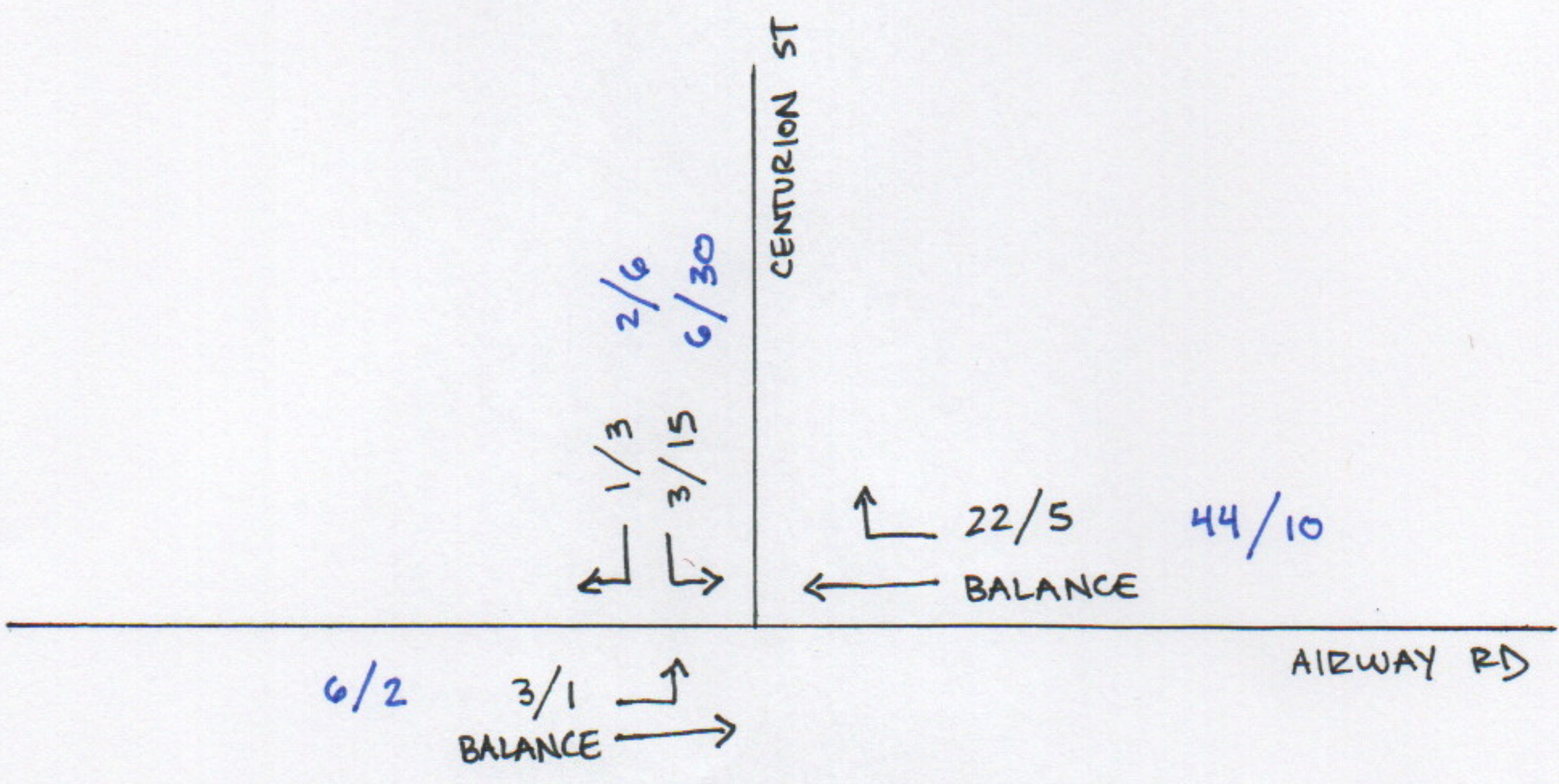
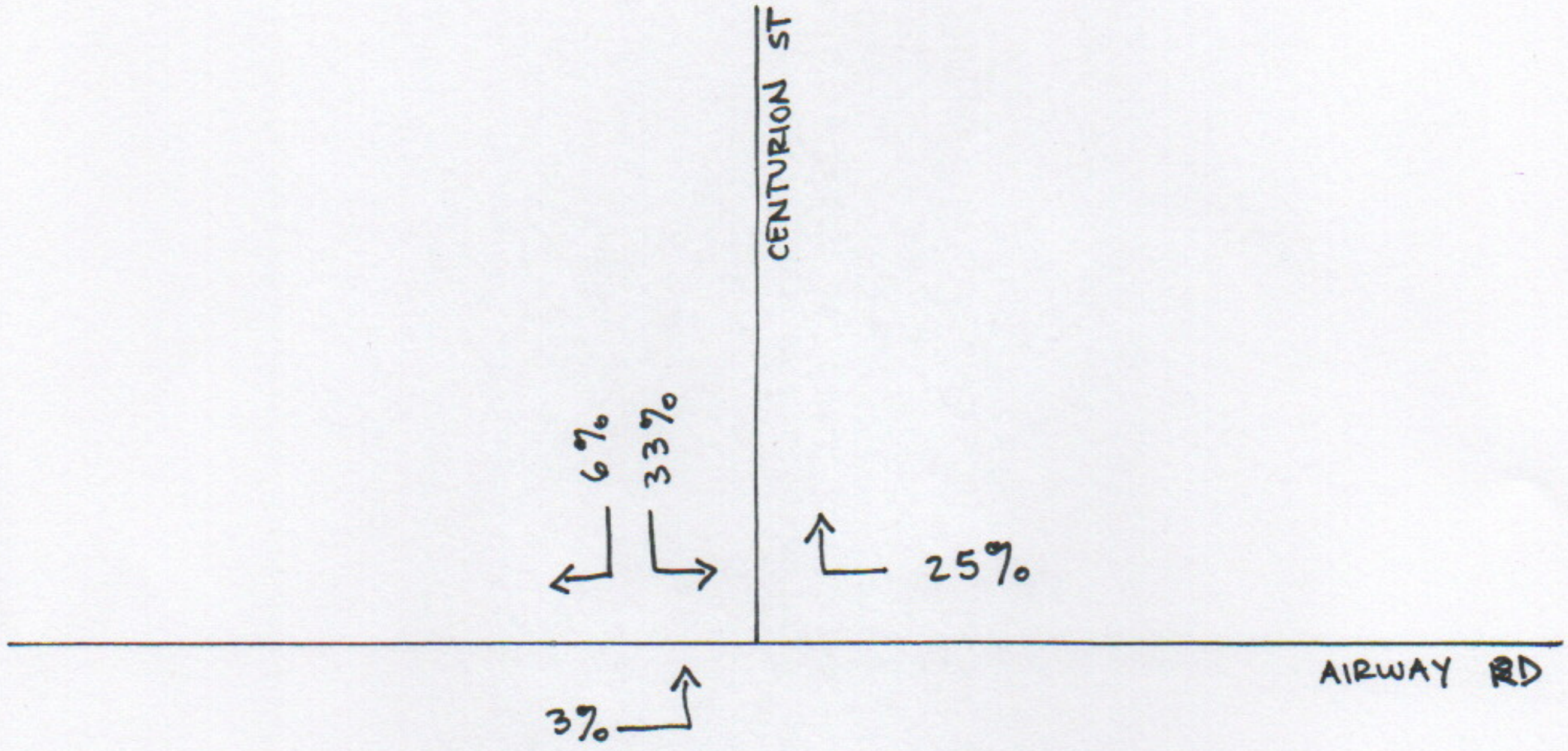
DAILY TOTALS					NB	SB	EB		WB	Total	
					0	0	3,288	3,737	7,025		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			7	11	18	12:00			50	88	138
00:15			3	7	10	12:15			52	79	131
00:30			4	2	6	12:30			37	59	96
00:45			7	21	28	12:45			45	184	229
01:00			8	1	9	13:00			51	70	121
01:15			10	2	12	13:15			70	74	144
01:30			13	4	17	13:30			52	110	162
01:45			8	39	47	13:45			57	230	287
02:00			10	7	17	14:00			64	116	180
02:15			9	9	18	14:15			49	73	122
02:30			13	14	27	14:30			48	82	130
02:45			21	53	74	14:45			58	219	277
03:00			35	10	45	15:00			61	69	130
03:15			43	16	59	15:15			62	59	121
03:30			19	14	33	15:30			58	87	145
03:45			41	138	179	15:45			53	234	287
04:00			7	10	17	16:00			56	91	147
04:15			12	11	23	16:15			69	74	143
04:30			18	13	31	16:30			54	84	138
04:45			10	47	57	16:45			63	242	305
05:00			15	16	31	17:00			51	105	156
05:15			16	22	38	17:15			48	63	111
05:30			30	13	43	17:30			51	59	110
05:45			25	86	111	17:45			68	218	286
06:00			13	11	24	18:00			31	64	95
06:15			21	25	46	18:15			26	50	76
06:30			22	23	45	18:30			30	66	96
06:45			39	95	134	18:45			24	111	135
07:00			49	15	64	19:00			24	40	64
07:15			64	30	94	19:15			14	47	61
07:30			89	17	106	19:30			17	22	39
07:45			81	283	364	19:45			26	81	107
08:00			94	37	131	20:00			12	26	38
08:15			67	41	108	20:15			13	13	26
08:30			62	41	103	20:30			12	16	28
08:45			59	282	341	20:45			16	53	69
09:00			44	58	102	21:00			11	18	29
09:15			63	64	127	21:15			11	9	20
09:30			45	63	108	21:30			8	7	15
09:45			59	211	270	21:45			6	36	42
10:00			50	68	118	22:00			8	11	19
10:15			43	45	88	22:15			6	12	18
10:30			51	50	101	22:30			5	9	14
10:45			46	190	236	22:45			7	26	33
11:00			41	74	115	23:00			4	8	12
11:15			50	61	111	23:15			3	7	10
11:30			58	76	134	23:30			9	3	12
11:45			38	187	225	23:45			6	22	28
TOTALS			1632	1358	2990	TOTALS			1656	2379	4035
SPLIT %			54.6%	45.4%	42.6%	SPLIT %			41.0%	59.0%	57.4%

DAILY TOTALS					NB	SB	EB		WB	Total
					0	0	3,288	3,737	7,025	

AM Peak Hour			07:30	11:30	11:30	PM Peak Hour			13:15	13:15	13:15
AM Pk Volume			331	301	499	PM Pk Volume			243	352	595
Pk Hr Factor			0.880	0.855	0.904	Pk Hr Factor			0.868	0.759	0.826
7 - 9 Volume	0	0	565	275	840	4 - 6 Volume	0	0	460	579	1039
7 - 9 Peak Hour			07:30	08:00	07:30	4 - 6 Peak Hour			16:00	16:15	16:15
7 - 9 Pk Volume	0	0	331	170	469	4 - 6 Pk Volume	0	0	242	321	558
Pk Hr Factor	0.000	0.000	0.880	0.833	0.895	Pk Hr Factor	0.000	0.000	0.877	0.764	0.894

SOUTHWESTERN HEC OTAY MESA
500 FTE STUDENTS

800 ADT AM: 86 IN / 10 OUT
PM: 19 IN / 45 OUT



FACTOR OF SAFETY = 2

* Remainder of Southwestern HEC Otay Mesa trips access site via Excellante Street

APPENDIX B

INTERSECTION METHODOLOGY AND ANALYSIS SHEETS

SIGNALIZED INTERSECTIONS

For signalized intersections, level of service criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. **Table 1** summarizes the delay thresholds for signalized intersections.

Level of service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of service B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

TABLE 1

LEVEL OF SERVICE THRESHOLDS FOR SIGNALIZED INTERSECTIONS

AVERAGE CONTROL DELAY PER VEHICLE (SECONDS/VEHICLE)				LEVEL OF SERVICE
0.0	≤	10.0		A
10.1	to	20.0		B
21.1	to	35.0		C
35.1	to	55.0		D
55.1	to	80.0		E
	≥	80.0		F

Source: Highway Capacity Manual, 2000.

Level of service C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of service D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are more frequent.

Level of service E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of service F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

UNIGNALIZED INTERSECTIONS

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. **Table 2** depicts the criteria, which are based on the average control delay for any particular minor movement.

TABLE 2

LEVEL OF SERVICE THRESHOLDS FOR UNSIGNALIZED INTERSECTIONS

AVERAGE CONTROL DELAY PER VEHICLE (SECONDS/VEHICLE)			LEVEL OF SERVICE	EXPECTED DELAY TO MINOR STREET TRAFFIC
0.0	≤	10.0	A	Little or no delay
10.1	to	15.0	B	Short traffic delays
15.1	to	25.0	C	Average traffic delays
25.1	to	35.0	D	Long traffic delays
35.1	to	50.0	E	Very long traffic delays
	≥	50.0	F	Severe congestion

Source: Highway Capacity Manual, 2000.

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

APPENDIX C

CITY OF SAN DIEGO ROADWAY CLASSIFICATION TABLE

TABLE 2 (MODIFIED)
City of San Diego Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)

Street Classification	Lanes	LEVEL OF SERVICE ^a				
		A	B	C	D	E
Freeway	8 lanes	60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes	45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes	30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	30,000	42,000	60,000	70,000	80,000
Prime Arterial	11 lanes	32,000	44,750	63,750	74,500	85,000
Prime Arterial	10 lanes	30,000	42,000	60,000	70,000	80,000
Prime Arterial	9 lanes	28,750	40,250	57,500	66,250	75,000
Prime Arterial	8 lanes	27,500	38,500	55,000	62,500	70,000
Prime Arterial	7 lanes	26,250	36,750	52,500	58,750	65,000
Prime Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Prime Arterial	5 lanes	23,000	32,000	45,000	50,000	55,000
Major Arterial	6 lanes	20,000	28,000	40,000	45,000	50,000
Major Arterial	5 lanes	17,500	24,500	35,000	40,000	45,000
Major Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Collector	5 lanes	12,500	17,500	25,000	30,000	35,000
Collector (continuous left-turn lane)	4 lanes	10,000	14,000	20,000	25,000	30,000
Major Arterial (one-way)	4 lanes	11,400	15,600	20,000	27,000	33,400
	3 lanes	8,500	11,750	15,000	20,000	25,000
	2 lanes	5,700	7,800	10,000	13,500	16,700
Collector (no Center lane) (continuous left-turn lane)	4 lanes					
	3 lanes	5,000	7,000	10,000	13,000	15,000
	2 lanes					
Collector (one-way)	2 lanes	4,500	6,250	8,750	11,000	12,500
Collector (no fronting property)	2 lanes	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	2,500	3,500	5,000	6,500	8,000
Sub-collector (single-family)	2 lanes	—	—	2,200	—	—

Footnotes:

- a. Approximate recommended ADT based on City of San Diego Street Design Manual.

General Notes:

- The volumes and the average daily level of service listed above are only intended as a general planning guideline.
- Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.
- Shaded areas indicate LLG-derived ADT capacities.**

APPENDIX D
EXISTING INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary

1: Britannia Blvd & SR 905 WB Ramps

Ex AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵	↵	↵	↵↵	↵↵↵			↵↵↵	
Traffic Volume (veh/h)	0	0	0	233	1	135	271	242	0	0	267	91
Future Volume (veh/h)	0	0	0	233	1	135	271	242	0	0	267	91
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				259	0	151	301	269	0	0	297	101
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				303	0	518	383	3208	0	0	1813	578
Arrive On Green				0.19	0.00	0.19	0.04	0.23	0.00	0.00	0.54	0.54
Sat Flow, veh/h				1584	0	2709	3072	4689	0	0	3537	1079
Grp Volume(v), veh/h				259	0	151	301	269	0	0	263	135
Grp Sat Flow(s),veh/h/ln				1584	0	1355	1536	1513	0	0	1513	1440
Q Serve(g_s), s				15.8	0.0	4.8	9.7	4.6	0.0	0.0	4.4	4.8
Cycle Q Clear(g_c), s				15.8	0.0	4.8	9.7	4.6	0.0	0.0	4.4	4.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.75
Lane Grp Cap(c), veh/h				303	0	518	383	3208	0	0	1620	771
V/C Ratio(X)				0.85	0.00	0.29	0.79	0.08	0.00	0.00	0.16	0.17
Avail Cap(c_a), veh/h				553	0	946	654	3208	0	0	1620	771
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				39.1	0.0	34.6	46.6	13.0	0.0	0.0	11.8	11.9
Incr Delay (d2), s/veh				6.8	0.0	0.3	3.4	0.0	0.0	0.0	0.2	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.6	0.0	1.6	4.1	1.5	0.0	0.0	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.9	0.0	34.9	50.1	13.1	0.0	0.0	12.0	12.4
LnGrp LOS				D	A	C	D	B	A	A	B	B
Approach Vol, veh/h					410			570			398	
Approach Delay, s/veh					41.9			32.6			12.2	
Approach LOS					D			C			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.8			17.2	58.6		24.2				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		54.9			* 21	28.9		34.9				
Max Q Clear Time (g_c+I1), s		6.6			11.7	6.8		17.8				
Green Ext Time (p_c), s		2.0			0.8	2.6		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				29.5								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary
2: Britannia Blvd & SR 905 EB Ramps

Ex AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	158	1	589	0	0	0	0	355	185	87	413	0
Future Volume (veh/h)	158	1	589	0	0	0	0	355	185	87	413	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	172	1	640				0	386	201	95	449	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	461	3	705				0	1024	525	145	2748	0
Arrive On Green	0.29	0.29	0.29				0.00	0.51	0.51	0.09	1.00	0.00
Sat Flow, veh/h	1575	9	2407				0	2087	1027	3072	4689	0
Grp Volume(v), veh/h	173	0	640				0	303	284	95	449	0
Grp Sat Flow(s),veh/h/ln	1584	0	1204				0	1580	1451	1536	1513	0
Q Serve(g_s), s	8.7	0.0	25.6				0.0	11.6	11.9	3.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.0	25.6				0.0	11.6	11.9	3.0	0.0	0.0
Prop In Lane	0.99		1.00				0.00		0.71	1.00		0.00
Lane Grp Cap(c), veh/h	464	0	705				0	807	741	145	2748	0
V/C Ratio(X)	0.37	0.00	0.91				0.00	0.38	0.38	0.65	0.16	0.00
Avail Cap(c_a), veh/h	505	0	768				0	807	741	316	2748	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.91	0.91	0.92	0.92	0.00
Uniform Delay (d), s/veh	28.1	0.0	34.1				0.0	14.8	14.9	44.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	14.0				0.0	1.2	1.4	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	8.7				0.0	4.3	4.1	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	0.0	48.0				0.0	16.0	16.2	49.0	0.1	0.0
LnGrp LOS	C	A	D				A	B	B	D	A	A
Approach Vol, veh/h		813						587			544	
Approach Delay, s/veh		43.9						16.1			8.7	
Approach LOS		D						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.4	56.2	34.4	65.6								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	42.9		31.9	57.9								
Max Q Clear Time (g_c+1), s	13.9		27.6	2.0								
Green Ext Time (p_c), s	0.1	4.1	1.7	3.6								

Intersection Summary

HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

Ex AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	59	45	69	133	100	452	68	0	544	25
Future Volume (veh/h)	4	0	59	45	69	133	100	452	68	0	544	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	4	0	66	51	78	149	112	508	76	0	611	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	97	0	78	216	226	182	166	2053	885	0	3096	140
Arrive On Green	0.06	0.00	0.06	0.14	0.14	0.14	0.05	0.65	0.65	0.00	0.55	0.55
Sat Flow, veh/h	1584	0	1277	1584	1663	1340	3072	3159	1362	0	5877	256
Grp Volume(v), veh/h	4	0	66	51	78	149	112	508	76	0	463	176
Grp Sat Flow(s),veh/h/ln	1584	0	1277	1584	1663	1340	1536	1580	1362	0	1430	1610
Q Serve(g_s), s	0.2	0.0	5.1	2.9	4.3	10.8	3.6	6.7	2.1	0.0	5.5	5.5
Cycle Q Clear(g_c), s	0.2	0.0	5.1	2.9	4.3	10.8	3.6	6.7	2.1	0.0	5.5	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.16
Lane Grp Cap(c), veh/h	97	0	78	216	226	182	166	2053	885	0	2353	883
V/C Ratio(X)	0.04	0.00	0.85	0.24	0.34	0.82	0.67	0.25	0.09	0.00	0.20	0.20
Avail Cap(c_a), veh/h	125	0	101	379	397	320	378	2053	885	0	2353	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	0.0	46.5	38.6	39.1	42.0	46.4	7.3	6.5	0.0	11.4	11.4
Incr Delay (d2), s/veh	0.2	0.0	37.4	0.6	0.9	8.6	1.8	0.3	0.2	0.0	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.4	1.1	1.8	4.0	1.4	2.2	0.6	0.0	1.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	0.0	83.9	39.1	40.0	50.6	48.2	7.6	6.7	0.0	11.6	12.0
LnGrp LOS	D	A	F	D	D	D	D	A	A	A	B	B
Approach Vol, veh/h	70			278			696			639		
Approach Delay, s/veh	81.7			45.5			14.0			11.7		
Approach LOS	F			D			B			B		
Timer - Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	70.1		11.2		10.1		60.0		18.7			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	52.9		7.9		* 12		35.9		23.9			
Max Q Clear Time (g_c+I1), s	8.7		7.1		5.6		7.5		12.8			
Green Ext Time (p_c), s	4.3		0.0		0.1		4.7		0.8			

Intersection Summary

HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

- User approved volume balancing among the lanes for turning movement.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

Ex AM
05/29/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↶↷	↶↷	↑↑↑	↑↑	↶
Traffic Volume (veh/h)	468	389	5	152	236	150
Future Volume (veh/h)	468	389	5	152	236	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	514	427	5	167	259	165
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	668	539	20	3090	1981	1160
Arrive On Green	0.22	0.22	0.01	0.68	0.63	0.63
Sat Flow, veh/h	3072	2480	3072	4689	3243	1362
Grp Volume(v), veh/h	514	427	5	167	259	165
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1362
Q Serve(g_s), s	15.7	16.3	0.2	1.2	3.3	2.1
Cycle Q Clear(g_c), s	15.7	16.3	0.2	1.2	3.3	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	668	539	20	3090	1981	1160
V/C Ratio(X)	0.77	0.79	0.25	0.05	0.13	0.14
Avail Cap(c_a), veh/h	1011	816	194	3090	1981	1160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	37.0	49.4	5.3	7.6	1.4
Incr Delay (d2), s/veh	2.0	3.1	2.4	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	10.8	0.1	0.4	1.1	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.8	40.1	51.8	5.3	7.7	1.6
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	941			172	424	
Approach Delay, s/veh	39.4			6.7	5.3	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		73.2		26.8	5.3	67.8
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		56.9		32.9	* 6.3	45.9
Max Q Clear Time (g_c+I1), s		3.2		18.3	2.2	5.3
Green Ext Time (p_c), s		1.2		3.5	0.0	2.5
Intersection Summary						
HCM 6th Ctrl Delay			26.3			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary
5: Britannia Blvd & Airway Rd

Ex AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	3	3	19	6	119	3	397	17	326	574	102
Future Volume (veh/h)	24	3	3	19	6	119	3	397	17	326	574	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	31	0	0	21	7	131	3	436	19	358	631	112
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	78	41	0	185	62	207	5	1058	46	392	978	800
Arrive On Green	0.02	0.00	0.00	0.15	0.15	0.15	0.00	0.34	0.34	0.25	0.59	0.59
Sat Flow, veh/h	3167	1663	0	1202	401	1346	1584	3077	134	1584	1663	1360
Grp Volume(v), veh/h	31	0	0	28	0	131	3	223	232	358	631	112
Grp Sat Flow(s),veh/h/ln	1584	1663	0	1603	0	1346	1584	1580	1631	1584	1663	1360
Q Serve(g_s), s	0.8	0.0	0.0	1.2	0.0	7.6	0.2	8.9	9.0	18.2	20.9	3.1
Cycle Q Clear(g_c), s	0.8	0.0	0.0	1.2	0.0	7.6	0.2	8.9	9.0	18.2	20.9	3.1
Prop In Lane	1.00		0.00	0.75		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	78	41	0	246	0	207	5	543	561	392	978	800
V/C Ratio(X)	0.40	0.00	0.00	0.11	0.00	0.63	0.59	0.41	0.41	0.91	0.65	0.14
Avail Cap(c_a), veh/h	157	82	0	658	0	552	78	543	561	478	978	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	0.0	0.0	30.2	0.0	32.9	41.2	20.8	20.8	30.3	11.3	7.7
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.3	0.0	4.1	34.1	2.3	2.2	17.9	3.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.5	0.0	2.6	0.1	3.5	3.6	8.6	7.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	30.5	0.0	37.0	75.4	23.1	23.0	48.2	14.6	8.0
LnGrp LOS	D	A	A	C	A	D	E	C	C	D	B	A
Approach Vol, veh/h		31			159			458			1101	
Approach Delay, s/veh		41.0			35.8			23.4			24.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.9	33.6		6.4	4.7	53.8		17.9				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	25.0	* 28		4.1	4.1	48.7		34.0				
Max Q Clear Time (g_c+20), s	20.2	11.0		2.8	2.2	22.9		9.6				
Green Ext Time (p_c), s	0.3	3.3		0.0	0.0	7.0		0.8				

Intersection Summary

HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
7: Project Driveway (East)/Centurion St & Airway Rd

Ex AM
05/29/2020

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	50	0	0	71	44	0	0	0	6	0	2
Future Vol, veh/h	6	50	0	0	71	44	0	0	0	6	0	2
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	6	53	0	0	75	46	0	0	0	6	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	131	0	0	63	0	0	184	206	73	183	183	118
Stage 1	-	-	-	-	-	-	75	75	-	108	108	-
Stage 2	-	-	-	-	-	-	109	131	-	75	75	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1372	-	-	1540	-	-	777	691	989	748	711	897
Stage 1	-	-	-	-	-	-	934	833	-	864	806	-
Stage 2	-	-	-	-	-	-	896	788	-	900	833	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1359	-	-	1525	-	-	758	674	970	731	693	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	758	674	-	731	693	-
Stage 1	-	-	-	-	-	-	921	821	-	852	798	-
Stage 2	-	-	-	-	-	-	885	780	-	887	821	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	0	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1359	-	-	1525	-	-	763
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.011
HCM Control Delay (s)	0	7.7	0	-	0	-	-	9.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	17.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕↕	
Traffic Vol, veh/h	11	45	0	0	63	146	0	0	0	308	265	52
Future Vol, veh/h	11	45	0	0	63	146	0	0	0	308	265	52
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	12	47	0	0	66	154	0	0	0	324	279	55
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	9.9	11.2	20.4
HCM LOS	A	B	C

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	20%	0%	70%	0%
Vol Thru, %	80%	30%	30%	72%
Vol Right, %	0%	70%	0%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	209	441	185
LT Vol	11	0	308	0
Through Vol	45	63	133	133
RT Vol	0	146	0	52
Lane Flow Rate	59	220	464	194
Geometry Grp	2	2	7	7
Degree of Util (X)	0.102	0.331	0.755	0.286
Departure Headway (Hd)	6.223	5.411	5.859	5.309
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	579	660	612	670
Service Time	4.223	3.481	3.653	3.102
HCM Lane V/C Ratio	0.102	0.333	0.758	0.29
HCM Control Delay	9.9	11.2	24.7	10.3
HCM Lane LOS	A	B	C	B
HCM 95th-tile Q	0.3	1.4	6.8	1.2

HCM 6th Signalized Intersection Summary
1: Britannia Blvd & SR 905 WB Ramps

Ex PM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	201	2	148	683	245	0	0	322	278
Future Volume (veh/h)	0	0	0	201	2	148	683	245	0	0	322	278
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				218	0	162	742	266	0	0	350	302
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				258	0	439	822	3338	0	0	1274	579
Arrive On Green				0.16	0.00	0.16	0.45	1.00	0.00	0.00	0.42	0.42
Sat Flow, veh/h				1584	0	2696	3072	4689	0	0	3176	1375
Grp Volume(v), veh/h				218	0	162	742	266	0	0	350	302
Grp Sat Flow(s),veh/h/ln				1584	0	1348	1536	1513	0	0	1513	1375
Q Serve(g_s), s				13.4	0.0	5.4	22.4	0.0	0.0	0.0	7.6	16.3
Cycle Q Clear(g_c), s				13.4	0.0	5.4	22.4	0.0	0.0	0.0	7.6	16.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				258	0	439	822	3338	0	0	1274	579
V/C Ratio(X)				0.85	0.00	0.37	0.90	0.08	0.00	0.00	0.27	0.52
Avail Cap(c_a), veh/h				379	0	644	1085	3338	0	0	1274	579
HCM Platoon Ratio				1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.66	0.66	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				40.6	0.0	37.3	26.5	0.0	0.0	0.0	19.0	21.5
Incr Delay (d2), s/veh				11.1	0.0	0.5	6.0	0.0	0.0	0.0	0.5	3.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.9	0.0	1.8	7.2	0.0	0.0	0.0	2.7	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				51.7	0.0	37.8	32.4	0.0	0.0	0.0	19.5	24.8
LnGrp LOS				D	A	D	C	A	A	A	B	C
Approach Vol, veh/h					380			1008			652	
Approach Delay, s/veh					45.8			23.9			22.0	
Approach LOS					D			C			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.6			31.4	47.2		21.4				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		65.9			* 35	25.9		23.9				
Max Q Clear Time (g_c+I1), s		2.0			24.4	18.3		15.4				
Green Ext Time (p_c), s		2.0			2.3	2.6		0.9				

Intersection Summary

HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

2: Britannia Blvd & SR 905 EB Ramps

Ex PM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	98	4	328	0	0	0	0	830	372	183	340	0
Future Volume (veh/h)	98	4	328	0	0	0	0	830	372	183	340	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			No
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	105	4	353				0	892	400	197	366	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	243	9	377				0	1286	571	256	3355	0
Arrive On Green	0.16	0.16	0.16				0.00	0.61	0.61	0.17	1.00	0.00
Sat Flow, veh/h	1528	58	2371				0	2195	938	3072	4689	0
Grp Volume(v), veh/h	109	0	353				0	665	627	197	366	0
Grp Sat Flow(s),veh/h/ln	1586	0	1186				0	1580	1471	1536	1513	0
Q Serve(g_s), s	6.2	0.0	14.7				0.0	28.5	29.1	6.1	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	14.7				0.0	28.5	29.1	6.1	0.0	0.0
Prop In Lane	0.96		1.00				0.00		0.64	1.00		0.00
Lane Grp Cap(c), veh/h	252	0	377				0	962	895	256	3355	0
V/C Ratio(X)	0.43	0.00	0.94				0.00	0.69	0.70	0.77	0.11	0.00
Avail Cap(c_a), veh/h	252	0	377				0	962	895	378	3355	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.51	0.51	0.87	0.87	0.00
Uniform Delay (d), s/veh	38.0	0.0	41.6				0.0	13.2	13.3	40.8	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	30.6				0.0	2.1	2.4	4.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	5.8				0.0	9.7	9.3	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	72.1				0.0	15.3	15.7	45.6	0.1	0.0
LnGrp LOS	D	A	E				A	B	B	D	A	A
Approach Vol, veh/h		462						1292			563	
Approach Delay, s/veh		64.3						15.5			16.0	
Approach LOS		E						B			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	33.0	66.0	21.0	79.0								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	33.0	56.9	15.9	73.9								
Max Q Clear Time (g_c+I), s	10.0	31.1	16.7	2.0								
Green Ext Time (p_c), s	0.2	11.0	0.0	2.9								

Intersection Summary

HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 3: La Media Rd & SR 905 WB Ramps

Ex PM
 05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	106	64	29	154	96	343	228	0	775	24
Future Volume (veh/h)	7	0	106	64	29	154	96	343	228	0	775	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	7	0	110	48	56	160	100	357	238	0	807	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	156	0	130	225	237	191	152	1916	825	0	2927	90
Arrive On Green	0.10	0.00	0.10	0.14	0.14	0.14	0.05	0.61	0.61	0.00	0.51	0.51
Sat Flow, veh/h	1584	0	1320	1584	1663	1342	3072	3159	1361	0	5973	177
Grp Volume(v), veh/h	7	0	110	48	56	160	100	357	238	0	602	230
Grp Sat Flow(s),veh/h/ln	1584	0	1320	1584	1663	1342	1536	1580	1361	0	1430	1626
Q Serve(g_s), s	0.4	0.0	8.2	2.7	3.0	11.6	3.2	5.0	8.3	0.0	8.0	8.1
Cycle Q Clear(g_c), s	0.4	0.0	8.2	2.7	3.0	11.6	3.2	5.0	8.3	0.0	8.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.11
Lane Grp Cap(c), veh/h	156	0	130	225	237	191	152	1916	825	0	2188	829
V/C Ratio(X)	0.04	0.00	0.85	0.21	0.24	0.84	0.66	0.19	0.29	0.00	0.28	0.28
Avail Cap(c_a), veh/h	173	0	144	347	364	294	347	1916	825	0	2188	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	44.3	37.9	38.1	41.8	46.7	8.7	9.4	0.0	14.0	14.0
Incr Delay (d2), s/veh	0.1	0.0	32.8	0.5	0.5	12.0	1.8	0.2	0.9	0.0	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.8	1.1	1.2	4.4	1.3	1.7	2.5	0.0	2.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	0.0	77.2	38.4	38.6	53.7	48.5	8.9	10.3	0.0	14.3	14.8
LnGrp LOS	D	A	E	D	D	D	D	A	B	A	B	B
Approach Vol, veh/h		117			264			695			832	
Approach Delay, s/veh		75.0			47.7			15.1			14.4	
Approach LOS		E			D			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		65.7		14.9	9.6	56.1		19.3				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		51.9		10.9	* 11	35.9		21.9				
Max Q Clear Time (g_c+I1), s		10.3		10.2	5.2	10.1		13.6				
Green Ext Time (p_c), s		3.6		0.0	0.1	6.2		0.6				

Intersection Summary

HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

Ex PM
05/29/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↑↑↑	↑↑	↖
Traffic Volume (veh/h)	277	195	24	390	251	277
Future Volume (veh/h)	277	195	24	390	251	277
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	292	205	25	411	264	292
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	396	319	77	3492	2203	1132
Arrive On Green	0.13	0.13	0.03	0.77	0.70	0.70
Sat Flow, veh/h	3072	2480	3072	4689	3243	1364
Grp Volume(v), veh/h	292	205	25	411	264	292
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1364
Q Serve(g_s), s	9.1	7.8	0.8	2.3	2.8	4.7
Cycle Q Clear(g_c), s	9.1	7.8	0.8	2.3	2.8	4.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	396	319	77	3492	2203	1132
V/C Ratio(X)	0.74	0.64	0.33	0.12	0.12	0.26
Avail Cap(c_a), veh/h	826	667	255	3492	2203	1132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	41.4	47.9	2.9	5.0	1.9
Incr Delay (d2), s/veh	2.7	2.2	0.9	0.1	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	5.4	0.3	0.6	0.8	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	43.5	48.8	3.0	5.1	2.5
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	497			436	556	
Approach Delay, s/veh	44.2			5.6	3.7	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		82.0		18.0	7.2	74.8
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		62.9		26.9	* 8.3	49.9
Max Q Clear Time (g_c+I1), s		4.3		11.1	2.8	6.7
Green Ext Time (p_c), s		3.2		1.7	0.0	3.1
Intersection Summary						
HCM 6th Ctrl Delay			17.8			
HCM 6th LOS			B			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary
5: Britannia Blvd & Airway Rd

Ex PM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	9	2	12	5	419	3	670	25	223	348	97
Future Volume (veh/h)	113	9	2	12	5	419	3	670	25	223	348	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	136	0	0	13	6	336	3	753	28	251	391	109
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	192	101	0	303	140	377	5	936	35	278	788	643
Arrive On Green	0.06	0.00	0.00	0.28	0.28	0.28	0.00	0.30	0.30	0.18	0.47	0.47
Sat Flow, veh/h	3167	1663	0	1100	508	1366	1584	3100	115	1584	1663	1356
Grp Volume(v), veh/h	136	0	0	19	0	336	3	384	397	251	391	109
Grp Sat Flow(s),veh/h/ln	1584	1663	0	1608	0	1366	1584	1580	1635	1584	1663	1356
Q Serve(g_s), s	4.3	0.0	0.0	0.9	0.0	24.2	0.2	22.9	22.9	15.9	16.6	4.7
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.9	0.0	24.2	0.2	22.9	22.9	15.9	16.6	4.7
Prop In Lane	1.00		0.00	0.68		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	192	101	0	443	0	377	5	477	494	278	788	643
V/C Ratio(X)	0.71	0.00	0.00	0.04	0.00	0.89	0.59	0.80	0.81	0.90	0.50	0.17
Avail Cap(c_a), veh/h	204	107	0	534	0	454	63	477	494	303	788	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	0.0	0.0	27.2	0.0	35.6	51.0	32.9	33.0	41.4	18.5	15.4
Incr Delay (d2), s/veh	8.3	0.0	0.0	0.1	0.0	18.0	34.9	13.5	13.1	25.9	2.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9	0.0	0.0	0.3	0.0	9.8	0.1	10.4	10.7	8.1	6.7	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	0.0	0.0	27.2	0.0	53.7	85.9	46.4	46.1	67.3	20.7	16.0
LnGrp LOS	E	A	A	C	A	D	F	D	D	E	C	B
Approach Vol, veh/h		136			355			784			751	
Approach Delay, s/veh		55.6			52.2			46.4			35.6	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.4	36.0		10.6	4.7	53.6		33.4				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	19.6	* 31		6.6	4.1	46.2		34.0				
Max Q Clear Time (g_c+M), s	17.9	24.9		6.3	2.2	18.6		26.2				
Green Ext Time (p_c), s	0.1	3.0		0.0	0.0	4.1		1.1				

Intersection Summary

HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
7: Project Driveway (East)/Centurion St & Airway Rd

Ex PM
05/29/2020

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	89	0	0	117	10	0	0	0	30	0	6
Future Vol, veh/h	2	89	0	0	117	10	0	0	0	30	0	6
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	2	95	0	0	124	11	0	0	0	32	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	105	0	0	252	254	115	249	249	150
Stage 1	-	-	-	-	-	-	109	109	-	140	140	-
Stage 2	-	-	-	-	-	-	143	145	-	109	109	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1356	-	-	1486	-	-	701	650	937	676	654	861
Stage 1	-	-	-	-	-	-	896	805	-	831	781	-
Stage 2	-	-	-	-	-	-	860	777	-	863	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1343	-	-	1472	-	-	681	636	919	662	640	845
Mov Cap-2 Maneuver	-	-	-	-	-	-	681	636	-	662	640	-
Stage 1	-	-	-	-	-	-	885	795	-	821	773	-
Stage 2	-	-	-	-	-	-	845	769	-	853	795	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			0			10.5		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1343	-	-	1472	-	-	687
HCM Lane V/C Ratio	-	0.002	-	-	-	-	-	0.056
HCM Control Delay (s)		0	7.7	0	-	0	-	10.5
HCM Lane LOS		A	A	A	-	A	-	B
HCM 95th %tile Q(veh)		-	0	-	-	0	-	0.2

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Traffic Vol, veh/h	42	77	0	0	80	372	0	0	0	216	183	47
Future Vol, veh/h	42	77	0	0	80	372	0	0	0	216	183	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	45	82	0	0	85	396	0	0	0	230	195	50
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	11.3	20.1	17.2
HCM LOS	B	C	C

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	0%	70%	0%
Vol Thru, %	65%	18%	30%	66%
Vol Right, %	0%	82%	0%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	452	308	139
LT Vol	42	0	216	0
Through Vol	77	80	92	92
RT Vol	0	372	0	47
Lane Flow Rate	127	481	327	147
Geometry Grp	2	2	7	7
Degree of Util (X)	0.225	0.706	0.619	0.254
Departure Headway (Hd)	6.406	5.289	6.815	6.217
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	560	683	530	578
Service Time	4.461	3.329	4.551	3.953
HCM Lane V/C Ratio	0.227	0.704	0.617	0.254
HCM Control Delay	11.3	20.1	20	11.1
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.9	5.8	4.2	1

APPENDIX E

EXISTING + PROJECT INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary
 1: Britannia Blvd & SR 905 WB Ramps

Ex + P AM
 06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↘	↗	↖	↑↑↑			↑↑↑	↘
Traffic Volume (veh/h)	0	0	0	233	1	135	295	245	0	0	275	91
Future Volume (veh/h)	0	0	0	233	1	135	295	245	0	0	275	91
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				259	0	151	328	272	0	0	306	101
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				303	0	518	411	3208	0	0	1795	557
Arrive On Green				0.19	0.00	0.19	0.04	0.23	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1584	0	2709	3072	4689	0	0	3562	1058
Grp Volume(v), veh/h				259	0	151	328	272	0	0	269	138
Grp Sat Flow(s),veh/h/ln				1584	0	1355	1536	1513	0	0	1513	1445
Q Serve(g_s), s				15.8	0.0	4.8	10.6	4.7	0.0	0.0	4.6	5.0
Cycle Q Clear(g_c), s				15.8	0.0	4.8	10.6	4.7	0.0	0.0	4.6	5.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.73
Lane Grp Cap(c), veh/h				303	0	518	411	3208	0	0	1592	760
V/C Ratio(X)				0.85	0.00	0.29	0.80	0.08	0.00	0.00	0.17	0.18
Avail Cap(c_a), veh/h				553	0	946	654	3208	0	0	1592	760
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				39.1	0.0	34.6	46.5	13.0	0.0	0.0	12.3	12.4
Incr Delay (d2), s/veh				6.8	0.0	0.3	3.5	0.0	0.0	0.0	0.2	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.6	0.0	1.6	4.5	1.5	0.0	0.0	1.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.9	0.0	34.9	49.9	13.1	0.0	0.0	12.6	12.9
LnGrp LOS				D	A	C	D	B	A	A	B	B
Approach Vol, veh/h					410			600			407	
Approach Delay, s/veh					41.9			33.2			12.7	
Approach LOS					D			C			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		75.8			18.1	57.7		24.2				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		54.9			* 21	28.9		34.9				
Max Q Clear Time (g_c+I1), s		6.7			12.6	7.0		17.8				
Green Ext Time (p_c), s		2.1			0.8	2.6		1.3				

Intersection Summary

HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: Britannia Blvd & SR 905 EB Ramps

Ex + P AM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕↕					↕↕		↕↕	↕↕↕	
Traffic Volume (veh/h)	158	1	659	0	0	0	0	382	185	87	421	0
Future Volume (veh/h)	158	1	659	0	0	0	0	382	185	87	421	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			No
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	172	1	716				0	415	201	95	458	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	495	3	758				0	1006	481	145	2649	0
Arrive On Green	0.31	0.31	0.31				0.00	0.49	0.49	0.09	1.00	0.00
Sat Flow, veh/h	1575	9	2410				0	2139	983	3072	4689	0
Grp Volume(v), veh/h	173	0	716				0	318	298	95	458	0
Grp Sat Flow(s),veh/h/ln	1584	0	1205				0	1580	1459	1536	1513	0
Q Serve(g_s), s	8.4	0.0	29.0				0.0	12.9	13.1	3.0	0.0	0.0
Cycle Q Clear(g_c), s	8.4	0.0	29.0				0.0	12.9	13.1	3.0	0.0	0.0
Prop In Lane	0.99		1.00				0.00		0.67	1.00		0.00
Lane Grp Cap(c), veh/h	498	0	758				0	773	714	145	2649	0
V/C Ratio(X)	0.35	0.00	0.95				0.00	0.41	0.42	0.65	0.17	0.00
Avail Cap(c_a), veh/h	505	0	769				0	773	714	316	2649	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.89	0.89	0.92	0.92	0.00
Uniform Delay (d), s/veh	26.4	0.0	33.4				0.0	16.3	16.4	44.5	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	20.1				0.0	1.4	1.6	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	10.3				0.0	4.8	4.6	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	0.0	53.5				0.0	17.8	18.0	49.0	0.1	0.0
LnGrp LOS	C	A	D				A	B	B	D	A	A
Approach Vol, veh/h		889						616			553	
Approach Delay, s/veh		48.3						17.9			8.5	
Approach LOS		D						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.4	54.0	36.5	63.5								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	42.9		31.9	57.9								
Max Q Clear Time (g_c+I), s	15.1		31.0	2.0								
Green Ext Time (p_c), s	0.1	4.3	0.5	3.6								

Intersection Summary

HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

Ex + P AM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	59	55	69	133	100	462	83	0	572	25
Future Volume (veh/h)	4	0	59	55	69	133	100	462	83	0	572	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	4	0	66	62	78	149	112	519	93	0	643	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	93	0	75	216	227	183	166	2059	888	0	3115	134
Arrive On Green	0.06	0.00	0.06	0.14	0.14	0.14	0.05	0.65	0.65	0.00	0.55	0.55
Sat Flow, veh/h	1584	0	1274	1584	1663	1340	3072	3159	1362	0	5892	244
Grp Volume(v), veh/h	4	0	66	62	78	149	112	519	93	0	486	185
Grp Sat Flow(s),veh/h/ln	1584	0	1274	1584	1663	1340	1536	1580	1362	0	1430	1613
Q Serve(g_s), s	0.2	0.0	5.1	3.5	4.2	10.8	3.6	6.8	2.6	0.0	5.7	5.8
Cycle Q Clear(g_c), s	0.2	0.0	5.1	3.5	4.2	10.8	3.6	6.8	2.6	0.0	5.7	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.15
Lane Grp Cap(c), veh/h	93	0	75	216	227	183	166	2059	888	0	2361	888
V/C Ratio(X)	0.04	0.00	0.88	0.29	0.34	0.81	0.67	0.25	0.10	0.00	0.21	0.21
Avail Cap(c_a), veh/h	93	0	75	379	397	320	378	2059	888	0	2361	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	46.7	38.8	39.1	41.9	46.4	7.3	6.5	0.0	11.4	11.4
Incr Delay (d2), s/veh	0.2	0.0	64.4	0.7	0.9	8.5	1.8	0.3	0.2	0.0	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	1.4	1.8	4.0	1.4	2.2	0.7	0.0	1.8	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	111.1	39.5	40.0	50.4	48.2	7.6	6.8	0.0	11.6	12.0
LnGrp LOS	D	A	F	D	D	D	D	A	A	A	B	B
Approach Vol, veh/h		70			289			724			671	
Approach Delay, s/veh		107.3			45.3			13.7			11.7	
Approach LOS		F			D			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		70.3		11.0	10.1	60.1		18.7				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		54.9		5.9	* 12	37.9		23.9				
Max Q Clear Time (g_c+I1), s		8.8		7.1	5.6	7.8		12.8				
Green Ext Time (p_c), s		4.4		0.0	0.1	5.0		0.8				

Intersection Summary

HCM 6th Ctrl Delay 21.9
HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

Ex + P AM
06/11/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↶↷	↶↷	↑↑↑	↑↑	↶
Traffic Volume (veh/h)	468	433	8	177	274	150
Future Volume (veh/h)	468	433	8	177	274	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	514	476	9	195	301	165
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	710	573	34	3027	1923	1154
Arrive On Green	0.23	0.23	0.01	0.67	0.61	0.61
Sat Flow, veh/h	3072	2480	3072	4689	3243	1361
Grp Volume(v), veh/h	514	476	9	195	301	165
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1361
Q Serve(g_s), s	15.4	18.3	0.3	1.5	4.1	2.2
Cycle Q Clear(g_c), s	15.4	18.3	0.3	1.5	4.1	2.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	710	573	34	3027	1923	1154
V/C Ratio(X)	0.72	0.83	0.26	0.06	0.16	0.14
Avail Cap(c_a), veh/h	888	717	194	3027	1923	1154
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	36.6	49.0	5.8	8.5	1.5
Incr Delay (d2), s/veh	2.2	6.7	1.5	0.0	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	12.2	0.1	0.4	1.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	43.3	50.6	5.8	8.6	1.7
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	990			204	466	
Approach Delay, s/veh	40.4			7.8	6.2	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		71.8		28.2	5.8	66.0
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		60.9		28.9	* 6.3	49.9
Max Q Clear Time (g_c+I1), s		3.5		20.3	2.3	6.1
Green Ext Time (p_c), s		1.5		2.9	0.0	2.8
Intersection Summary						
HCM 6th Ctrl Delay			26.8			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

5: Britannia Blvd & Airway Rd

Ex + P AM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	3	3	19	6	146	3	397	17	404	574	102
Future Volume (veh/h)	24	3	3	19	6	146	3	397	17	404	574	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	31	0	0	21	7	160	3	436	19	444	631	112
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	76	40	0	205	68	231	5	962	42	442	979	801
Arrive On Green	0.02	0.00	0.00	0.17	0.17	0.17	0.00	0.31	0.31	0.28	0.59	0.59
Sat Flow, veh/h	3167	1663	0	1202	401	1350	1584	3077	134	1584	1663	1361
Grp Volume(v), veh/h	31	0	0	28	0	160	3	223	232	444	631	112
Grp Sat Flow(s),veh/h/ln	1584	1663	0	1603	0	1350	1584	1580	1631	1584	1663	1361
Q Serve(g_s), s	0.9	0.0	0.0	1.3	0.0	10.0	0.2	10.1	10.2	25.0	22.5	3.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	1.3	0.0	10.0	0.2	10.1	10.2	25.0	22.5	3.3
Prop In Lane	1.00		0.00	0.75		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	76	40	0	274	0	231	5	494	510	442	979	801
V/C Ratio(X)	0.41	0.00	0.00	0.10	0.00	0.69	0.59	0.45	0.45	1.00	0.64	0.14
Avail Cap(c_a), veh/h	145	76	0	609	0	513	73	494	510	442	979	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	0.0	0.0	31.3	0.0	34.9	44.6	24.6	24.7	32.3	12.2	8.3
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	0.0	4.8	34.4	3.0	2.9	43.9	3.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.5	0.0	3.5	0.1	4.1	4.2	14.6	8.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	0.0	0.0	31.5	0.0	39.7	79.0	27.6	27.6	76.1	15.5	8.6
LnGrp LOS	D	A	A	C	A	D	E	C	C	F	B	A
Approach Vol, veh/h		31			188			458			1187	
Approach Delay, s/veh		44.4			38.5			27.9			37.5	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.4	33.1		6.6	4.7	57.8		20.5				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	25.0	* 28		4.1	4.1	48.7		34.0				
Max Q Clear Time (g_c+Y), s	27.0	12.2		2.9	2.2	24.5		12.0				
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	6.8		0.9				

Intersection Summary

HCM 6th Ctrl Delay	35.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Project Driveway (West) & Airway Rd

Ex + P AM
06/11/2020

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	87	47	52	84	16	18
Future Vol, veh/h	87	47	52	84	16	18
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	92	49	55	88	17	19

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	151	0	335 137
Stage 1	-	-	-	-	127 -
Stage 2	-	-	-	-	208 -
Critical Hdwy	-	-	4.26	-	6.56 6.36
Critical Hdwy Stg 1	-	-	-	-	5.56 -
Critical Hdwy Stg 2	-	-	-	-	5.56 -
Follow-up Hdwy	-	-	2.344	-	3.644 3.444
Pot Cap-1 Maneuver	-	-	1349	-	633 876
Stage 1	-	-	-	-	865 -
Stage 2	-	-	-	-	795 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1336	-	594 859
Mov Cap-2 Maneuver	-	-	-	-	594 -
Stage 1	-	-	-	-	856 -
Stage 2	-	-	-	-	754 -

Approach	EB	WB	NB
HCM Control Delay, s	0	3	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1336	-
HCM Lane V/C Ratio	0.05	-	-	0.041	-
HCM Control Delay (s)	10.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

HCM 6th TWSC
7: Project Driveway (East)/Centurion St & Airway Rd

Ex + P AM
06/11/2020

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	68	31	35	123	44	11	0	12	6	0	2
Future Vol, veh/h	6	68	31	35	123	44	11	0	12	6	0	2
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	6	72	33	37	129	46	12	0	13	6	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	185	0	0	115	0	0	348	370	109	353	363	172
Stage 1	-	-	-	-	-	-	111	111	-	236	236	-
Stage 2	-	-	-	-	-	-	237	259	-	117	127	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1310	-	-	1474	-	-	607	560	945	577	565	837
Stage 1	-	-	-	-	-	-	894	804	-	737	710	-
Stage 2	-	-	-	-	-	-	766	694	-	855	791	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1298	-	-	1460	-	-	579	531	927	544	536	821
Mov Cap-2 Maneuver	-	-	-	-	-	-	579	531	-	544	536	-
Stage 1	-	-	-	-	-	-	881	792	-	727	683	-
Stage 2	-	-	-	-	-	-	736	668	-	831	779	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			1.3			10.2			11.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	720	1298	-	-	1460	-	-	594
HCM Lane V/C Ratio	0.034	0.005	-	-	0.025	-	-	0.014
HCM Control Delay (s)	10.2	7.8	0	-	7.5	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Traffic Vol, veh/h	39	47	0	0	68	146	0	0	0	308	265	134
Future Vol, veh/h	39	47	0	0	68	146	0	0	0	308	265	134
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	41	49	0	0	72	154	0	0	0	324	279	141
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	10.6	11.7	21.5
HCM LOS	B	B	C

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	45%	0%	70%	0%
Vol Thru, %	55%	32%	30%	50%
Vol Right, %	0%	68%	0%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	214	441	267
LT Vol	39	0	308	0
Through Vol	47	68	133	133
RT Vol	0	146	0	134
Lane Flow Rate	91	225	464	281
Geometry Grp	2	2	7	7
Degree of Util (X)	0.16	0.354	0.783	0.419
Departure Headway (Hd)	6.38	5.659	6.082	5.375
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	563	640	598	673
Service Time	4.407	3.659	3.797	3.089
HCM Lane V/C Ratio	0.162	0.352	0.776	0.418
HCM Control Delay	10.6	11.7	27.3	11.9
HCM Lane LOS	B	B	D	B
HCM 95th-tile Q	0.6	1.6	7.4	2.1

HCM 6th Signalized Intersection Summary
 1: Britannia Blvd & SR 905 WB Ramps

Ex + P PM
 06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶	↷	↶	↶↷	↶↷↶			↶↷↶	
Traffic Volume (veh/h)	0	0	0	201	2	148	746	253	0	0	326	278
Future Volume (veh/h)	0	0	0	201	2	148	746	253	0	0	326	278
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				218	0	162	811	275	0	0	354	302
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				258	0	439	885	3338	0	0	1211	550
Arrive On Green				0.16	0.00	0.16	0.48	1.00	0.00	0.00	0.40	0.40
Sat Flow, veh/h				1584	0	2696	3072	4689	0	0	3176	1374
Grp Volume(v), veh/h				218	0	162	811	275	0	0	354	302
Grp Sat Flow(s),veh/h/ln				1584	0	1348	1536	1513	0	0	1513	1374
Q Serve(g_s), s				13.4	0.0	5.4	24.5	0.0	0.0	0.0	7.9	16.9
Cycle Q Clear(g_c), s				13.4	0.0	5.4	24.5	0.0	0.0	0.0	7.9	16.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				258	0	439	885	3338	0	0	1211	550
V/C Ratio(X)				0.85	0.00	0.37	0.92	0.08	0.00	0.00	0.29	0.55
Avail Cap(c_a), veh/h				379	0	644	1085	3338	0	0	1211	550
HCM Platoon Ratio				1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.60	0.60	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				40.6	0.0	37.3	24.8	0.0	0.0	0.0	20.4	23.1
Incr Delay (d2), s/veh				11.1	0.0	0.5	6.8	0.0	0.0	0.0	0.6	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.9	0.0	1.8	7.8	0.0	0.0	0.0	2.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				51.7	0.0	37.8	31.6	0.0	0.0	0.0	21.0	27.0
LnGrp LOS				D	A	D	C	A	A	A	C	C
Approach Vol, veh/h					380			1086			656	
Approach Delay, s/veh					45.8			23.6			23.7	
Approach LOS					D			C			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.6			33.5	45.1		21.4				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		65.9			* 35	25.9		23.9				
Max Q Clear Time (g_c+I1), s		2.0			26.5	18.9		15.4				
Green Ext Time (p_c), s		2.1			2.3	2.5		0.9				

Intersection Summary

HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: Britannia Blvd & SR 905 EB Ramps

Ex + P PM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	98	4	364	0	0	0	0	901	372	183	344	0
Future Volume (veh/h)	98	4	364	0	0	0	0	901	372	183	344	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	105	4	391				0	969	400	197	370	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	243	9	377				0	1324	539	256	3355	0
Arrive On Green	0.16	0.16	0.16				0.00	0.61	0.61	0.17	1.00	0.00
Sat Flow, veh/h	1528	58	2371				0	2258	886	3072	4689	0
Grp Volume(v), veh/h	109	0	391				0	700	669	197	370	0
Grp Sat Flow(s),veh/h/ln	1586	0	1186				0	1580	1482	1536	1513	0
Q Serve(g_s), s	6.2	0.0	15.9				0.0	31.2	32.2	6.1	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	15.9				0.0	31.2	32.2	6.1	0.0	0.0
Prop In Lane	0.96		1.00				0.00		0.60	1.00		0.00
Lane Grp Cap(c), veh/h	252	0	377				0	962	902	256	3355	0
V/C Ratio(X)	0.43	0.00	1.04				0.00	0.73	0.74	0.77	0.11	0.00
Avail Cap(c_a), veh/h	252	0	377				0	962	902	378	3355	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.39	0.39	0.86	0.86	0.00
Uniform Delay (d), s/veh	38.0	0.0	42.0				0.0	13.8	14.0	40.8	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	56.3				0.0	1.9	2.2	4.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	7.5				0.0	10.6	10.3	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	98.3				0.0	15.7	16.1	45.6	0.1	0.0
LnGrp LOS	D	A	F				A	B	B	D	A	A
Approach Vol, veh/h		500						1369			567	
Approach Delay, s/veh		85.4						15.9			15.9	
Approach LOS		F						B			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	33.0	66.0	21.0	79.0								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	33.0	56.9	15.9	73.9								
Max Q Clear Time (g_c+I), s	19.5	34.2	17.9	2.0								
Green Ext Time (p_c), s	0.2	11.1	0.0	2.9								

Intersection Summary

HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

Ex + P PM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	106	69	29	154	96	368	269	0	790	24
Future Volume (veh/h)	7	0	106	69	29	154	96	368	269	0	790	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	7	0	110	51	59	160	100	383	280	0	823	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	141	0	117	226	237	191	152	1945	838	0	2982	90
Arrive On Green	0.09	0.00	0.09	0.14	0.14	0.14	0.05	0.62	0.62	0.00	0.52	0.52
Sat Flow, veh/h	1584	0	1313	1584	1663	1342	3072	3159	1361	0	5977	174
Grp Volume(v), veh/h	7	0	110	51	59	160	100	383	280	0	614	234
Grp Sat Flow(s),veh/h/ln	1584	0	1313	1584	1663	1342	1536	1580	1361	0	1430	1627
Q Serve(g_s), s	0.4	0.0	8.3	2.9	3.2	11.6	3.2	5.3	10.0	0.0	8.0	8.1
Cycle Q Clear(g_c), s	0.4	0.0	8.3	2.9	3.2	11.6	3.2	5.3	10.0	0.0	8.0	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.11
Lane Grp Cap(c), veh/h	141	0	117	226	237	191	152	1945	838	0	2227	845
V/C Ratio(X)	0.05	0.00	0.94	0.23	0.25	0.84	0.66	0.20	0.33	0.00	0.28	0.28
Avail Cap(c_a), veh/h	141	0	117	347	364	294	347	1945	838	0	2227	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	45.3	38.0	38.1	41.7	46.7	8.4	9.3	0.0	13.5	13.5
Incr Delay (d2), s/veh	0.1	0.0	65.0	0.5	0.5	11.9	1.8	0.2	1.1	0.0	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	4.8	1.1	1.3	4.4	1.3	1.8	3.0	0.0	2.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	0.0	110.3	38.5	38.7	53.6	48.5	8.6	10.4	0.0	13.8	14.3
LnGrp LOS	D	A	F	D	D	D	D	A	B	A	B	B
Approach Vol, veh/h		117			270			763			848	
Approach Delay, s/veh		106.2			47.5			14.5			13.9	
Approach LOS		F			D			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		66.7		14.0	9.6	57.0		19.3				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		53.9		8.9	* 11	37.9		21.9				
Max Q Clear Time (g_c+I1), s		12.0		10.3	5.2	10.1		13.6				
Green Ext Time (p_c), s		4.0		0.0	0.1	6.4		0.6				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

Ex + P PM
06/11/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↶↷	↶↷	↑↑↑	↑↑	↶
Traffic Volume (veh/h)	277	218	33	456	271	277
Future Volume (veh/h)	277	218	33	456	271	277
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	292	229	35	480	285	292
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	381	308	96	3513	2199	1124
Arrive On Green	0.12	0.12	0.03	0.77	0.70	0.70
Sat Flow, veh/h	3072	2480	3072	4689	3243	1364
Grp Volume(v), veh/h	292	229	35	480	285	292
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1364
Q Serve(g_s), s	9.2	8.9	1.1	2.7	3.0	4.9
Cycle Q Clear(g_c), s	9.2	8.9	1.1	2.7	3.0	4.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	381	308	96	3513	2199	1124
V/C Ratio(X)	0.77	0.74	0.37	0.14	0.13	0.26
Avail Cap(c_a), veh/h	550	444	255	3513	2199	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	42.3	47.5	2.9	5.1	2.1
Incr Delay (d2), s/veh	3.9	4.0	0.9	0.1	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	6.1	0.4	0.6	0.9	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.3	46.2	48.4	2.9	5.2	2.6
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	521			515	577	
Approach Delay, s/veh	46.3			6.0	3.9	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		82.5		17.5	7.8	74.7
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		71.9		17.9	* 8.3	58.9
Max Q Clear Time (g_c+I1), s		4.7		11.2	3.1	6.9
Green Ext Time (p_c), s		3.8		1.2	0.0	3.3
Intersection Summary						
HCM 6th Ctrl Delay			18.3			
HCM 6th LOS			B			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary

5: Britannia Blvd & Airway Rd

Ex + P PM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	9	2	12	5	490	3	670	25	263	348	97
Future Volume (veh/h)	113	9	2	12	5	490	3	670	25	263	348	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	136	0	0	13	6	315	3	753	28	296	391	109
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	191	100	0	289	133	359	5	932	35	302	811	662
Arrive On Green	0.06	0.00	0.00	0.26	0.26	0.26	0.00	0.30	0.30	0.19	0.49	0.49
Sat Flow, veh/h	3167	1663	0	1100	508	1365	1584	3100	115	1584	1663	1356
Grp Volume(v), veh/h	136	0	0	19	0	315	3	384	397	296	391	109
Grp Sat Flow(s),veh/h/ln	1584	1663	0	1608	0	1365	1584	1580	1635	1584	1663	1356
Q Serve(g_s), s	4.3	0.0	0.0	0.9	0.0	22.7	0.2	23.1	23.1	19.1	16.2	4.6
Cycle Q Clear(g_c), s	4.3	0.0	0.0	0.9	0.0	22.7	0.2	23.1	23.1	19.1	16.2	4.6
Prop In Lane	1.00		0.00	0.68		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	191	100	0	422	0	359	5	475	491	302	811	662
V/C Ratio(X)	0.71	0.00	0.00	0.04	0.00	0.88	0.59	0.81	0.81	0.98	0.48	0.16
Avail Cap(c_a), veh/h	203	107	0	532	0	451	63	475	491	302	811	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	0.0	0.0	28.3	0.0	36.3	51.2	33.2	33.2	41.4	17.6	14.7
Incr Delay (d2), s/veh	8.5	0.0	0.0	0.1	0.0	15.9	34.9	13.8	13.4	46.2	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9	0.0	0.0	0.4	0.0	9.0	0.1	10.5	10.8	11.2	6.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	0.0	0.0	28.3	0.0	52.2	86.1	47.0	46.6	87.6	19.7	15.2
LnGrp LOS	E	A	A	C	A	D	F	D	D	F	B	B
Approach Vol, veh/h		136			334			784			796	
Approach Delay, s/veh		55.9			50.9			47.0			44.3	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	36.0		10.6	4.7	55.3		32.2				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	19.6	* 31		6.6	4.1	46.2		34.0				
Max Q Clear Time (g_c+T), s	25.1			6.3	2.2	18.2		24.7				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	4.1		1.2				

Intersection Summary

HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Project Driveway (West) & Airway Rd

Ex + P PM
06/11/2020

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	107	24	28	151	43	48
Future Vol, veh/h	107	24	28	151	43	48
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	114	26	30	161	46	51

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	150	0	368 147
Stage 1	-	-	-	-	137 -
Stage 2	-	-	-	-	231 -
Critical Hdwy	-	-	4.26	-	6.56 6.36
Critical Hdwy Stg 1	-	-	-	-	5.56 -
Critical Hdwy Stg 2	-	-	-	-	5.56 -
Follow-up Hdwy	-	-	2.344	-	3.644 3.444
Pot Cap-1 Maneuver	-	-	1350	-	605 864
Stage 1	-	-	-	-	856 -
Stage 2	-	-	-	-	775 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1337	-	578 848
Mov Cap-2 Maneuver	-	-	-	-	578 -
Stage 1	-	-	-	-	847 -
Stage 2	-	-	-	-	749 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	695	-	-	1337	-
HCM Lane V/C Ratio	0.139	-	-	0.022	-
HCM Control Delay (s)	11	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

HCM 6th TWSC
7: Project Driveway (East)/Centurion St & Airway Rd

Ex + P PM
06/11/2020

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	137	16	18	145	10	28	0	32	30	0	6
Future Vol, veh/h	2	137	16	18	145	10	28	0	32	30	0	6
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	2	146	17	19	154	11	30	0	34	32	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	173	0	0	380	382	175	394	385	180
Stage 1	-	-	-	-	-	-	169	169	-	208	208	-
Stage 2	-	-	-	-	-	-	211	213	-	186	177	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1321	-	-	1404	-	-	578	551	868	541	549	828
Stage 1	-	-	-	-	-	-	833	759	-	763	730	-
Stage 2	-	-	-	-	-	-	791	726	-	784	753	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1308	-	-	1391	-	-	555	531	852	503	529	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	555	531	-	503	529	-
Stage 1	-	-	-	-	-	-	823	750	-	754	712	-
Stage 2	-	-	-	-	-	-	766	708	-	744	744	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.8			10.8			12.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	682	1308	-	-	1391	-	-	537
HCM Lane V/C Ratio	0.094	0.002	-	-	0.014	-	-	0.071
HCM Control Delay (s)	10.8	7.8	0	-	7.6	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Intersection Delay, s/veh	19.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Traffic Vol, veh/h	117	82	0	0	83	372	0	0	0	216	183	90
Future Vol, veh/h	117	82	0	0	83	372	0	0	0	216	183	90
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	124	87	0	0	88	396	0	0	0	230	195	96
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	13.9	23.5	18.5
HCM LOS	B	C	C

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	59%	0%	70%	0%
Vol Thru, %	41%	18%	30%	50%
Vol Right, %	0%	82%	0%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	455	308	182
LT Vol	117	0	216	0
Through Vol	82	83	92	92
RT Vol	0	372	0	90
Lane Flow Rate	212	484	327	193
Geometry Grp	2	2	7	7
Degree of Util (X)	0.389	0.749	0.646	0.343
Departure Headway (Hd)	6.609	5.574	7.112	6.402
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	542	649	507	560
Service Time	4.678	3.632	4.868	4.158
HCM Lane V/C Ratio	0.391	0.746	0.645	0.345
HCM Control Delay	13.9	23.5	22	12.5
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	1.8	6.7	4.5	1.5

APPENDIX F
CUMULATIVE PROJECTS INFORMATION

**TABLE 6.1
CUMULATIVE PROJECTS TRIP GENERATION**

Cumulative Project	Land Use	Daily Trips	AM Peak Hour (In / Out)	PM Peak Hour (In / Out)
1. 7-Eleven ¹	Convenience Store	1,800	144 (72-in / 72-out)	144 (72-in / 72-out)
2. Azul Playa Del Sol/Luna (California Terraces PA 6) ²	Residential	4,440	356 (71-in / 285-out)	400 (280-in / 120-out)
3. Cesar Solis Park ³	Park	750	30 (0-in / 30-out)	60 (0-in / 60-out)
4. Candlelight ⁴	Residential	2,850	228 (46-in / 182-out)	257 (180-in / 77-out)
5. Southview ⁵	Residential	1,662	133 (27-in / 106-out)	299 (105-in / 194-out)
6. Southview East ⁶	Residential	816	65 (13-in / 52-out)	220 (51-in / 169-out)
7. Southwind ⁷	Residential	800	64 (13-in / 51-out)	80 (56-in / 24-out)
8. Handler Retail Center ⁶	Motel	1,701	136 (54-in / 82-out)	153 (61-in / 92-out)
	Restaurant (sit down high turnover)	3,120	250 (125-in / 125-out)	250 (150-in / 100-out)
	Fast food (with drive- through)	4,200	168 (101-in / 67-out)	336 (168-in / 168-out)
9. Arco #5770 ⁹	Gas Station	60	4 (2-in / 2-out)	4 (2-in / 2-out)
10. Marijuana Production Facility ¹⁰	Marijuana Facility	346	69 (62-in / 7-out)	69 (14-in / 55-out)

**TABLE 6.1
CUMULATIVE PROJECTS TRIP GENERATION**

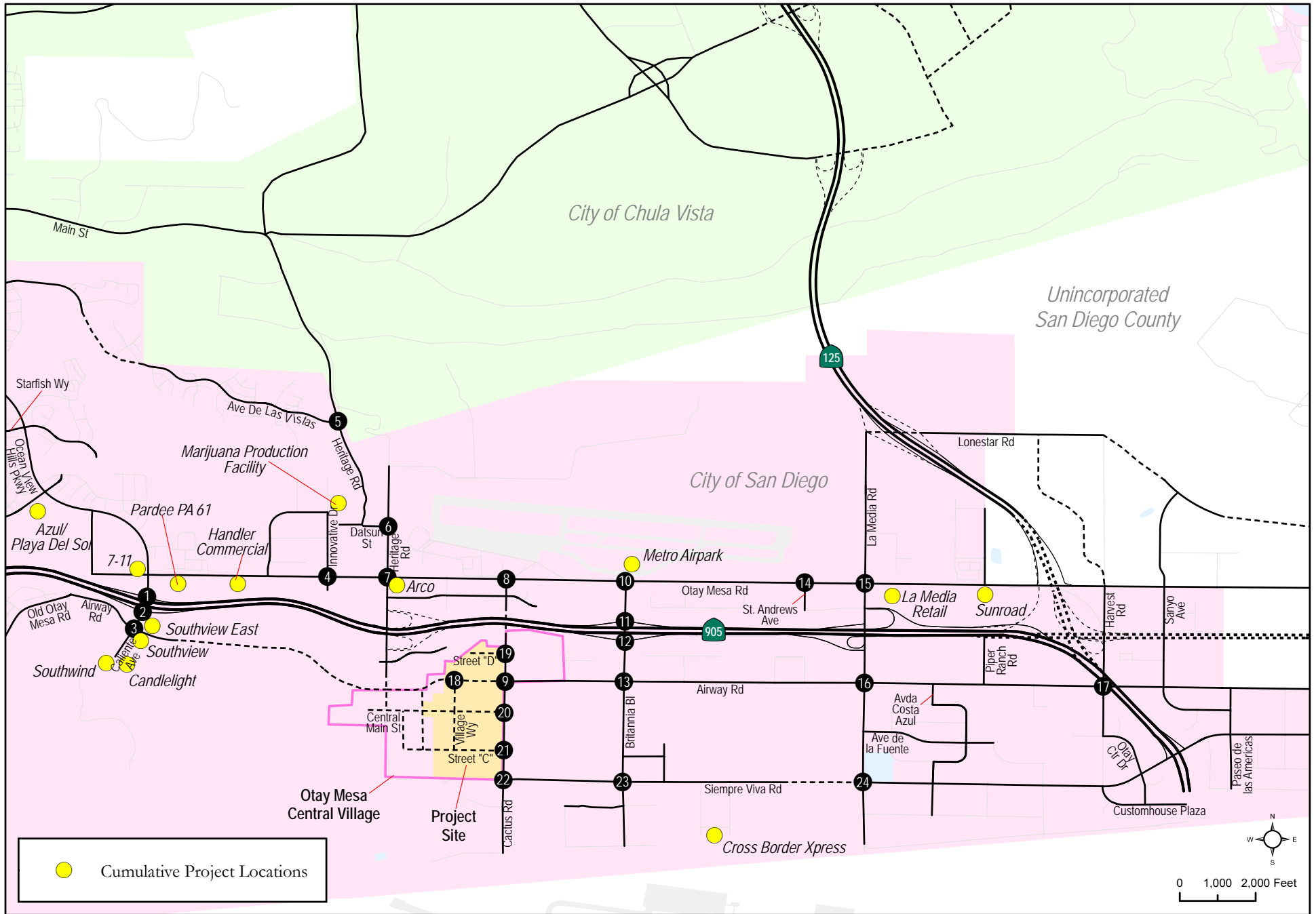
Cumulative Project	Land Use	Daily Trips	AM Peak Hour (In / Out)	PM Peak Hour (In / Out)
11. California Terraces PA 61 ¹¹	Mixed-use Residential/Commercial	4,716	252 (101-in / 151-out)	486 (271-in / 215-out)
12. Cross Border Facility (Phase 2) ¹²	Cross Border Facility	24,700	1,056 (606-in / 450-out)	1,167 (587-in / 580-out)
13. Metro Airpark (Phase 1) ¹³	Airport / Retail	1,000	99 (77-in / 22-out)	106 (34-in / 72-out)
14. Plaza La Media (Full Buildout) ¹⁴	Commercial/Retail	8,660	310 (183-in / 127-out)	812 (407-in / 405-out)
15. Sunroad Otay Mesa (Phase 1 and Phase 2) ¹⁵	Warehouse	4,225	633 (444-in / 189-out)	676 (270-in / 406-out)
Cumulative Total		65,846	3,997 (1,997-in / 2,000-out)	5,519 (2,708-in / 2,811-out)

Source: Chen Ryan Associates, February 2019.

Notes:

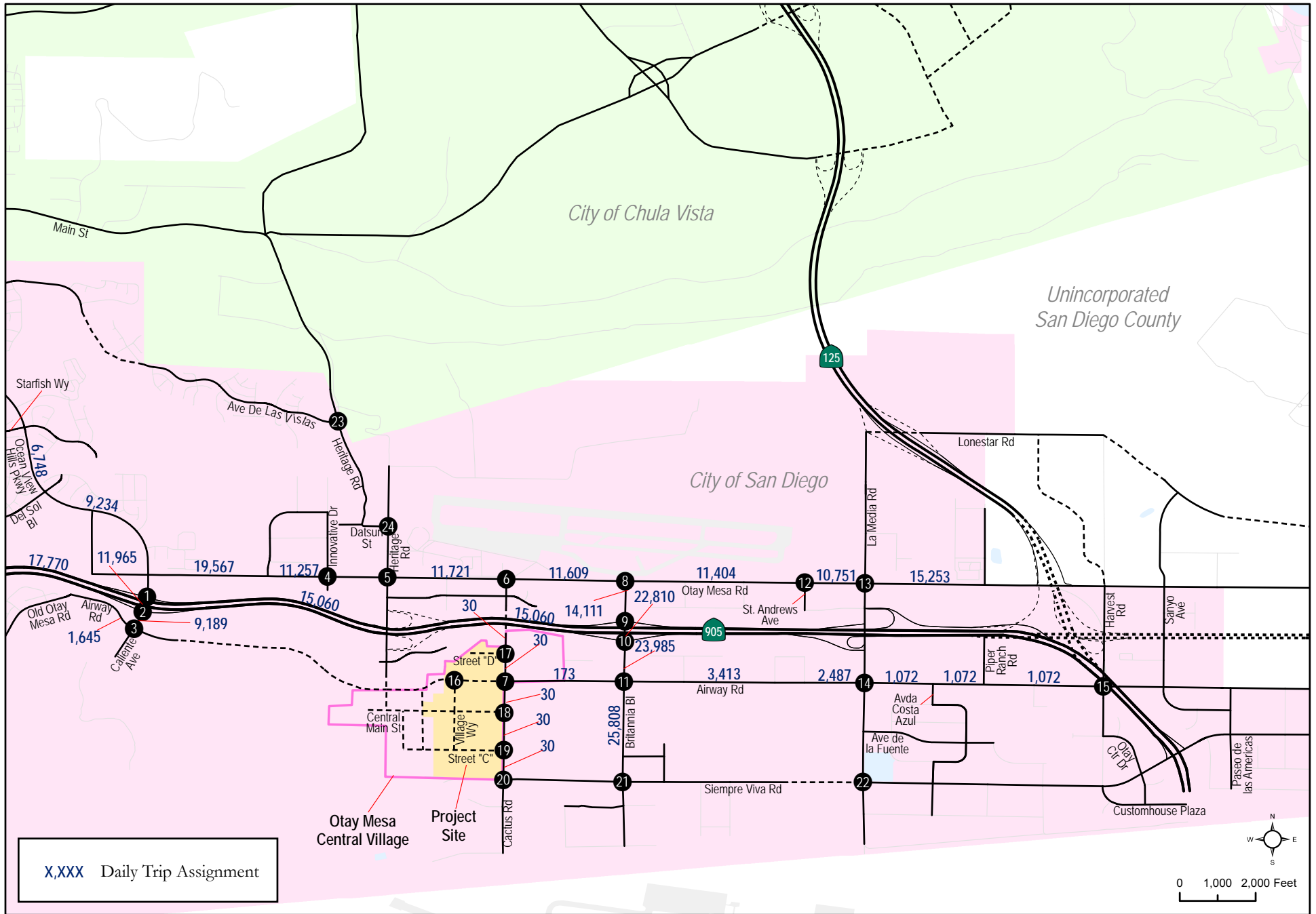
- ¹ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ² Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ³ Trip Generation obtained from *City of San Diego Land Development Code – Trip Generation Manual, May 2003*
- ⁴ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ⁵ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ⁶ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ⁷ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ⁸ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ⁹ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ¹⁰ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ¹¹ Trip Generation obtained from *California Terraces PA 61 TIS* prepared by LOS Engineering, Inc. January 14, 2019.
- ¹² Trip Generation obtained from *Cross Border Facility TIS* prepared by LSA Associates. June 2011.
- ¹³ Trip Generation obtained from *Metro Airpark TIS* prepared by Rick Engineering. April 2012.
- ¹⁴ Trip Generation obtained from draft *Plaza La Media TIS* prepared by STC. August 2017.
- ¹⁵ Trip Generation obtained from *Sunroad Otay Mesa TIS* prepared by Kimley-Horn. February 2017.

Figure 6-1 displays cumulative projects location while **Figure 6-2** and **Figure 6-3** display cumulative projects trip assignment for roadways and intersections, respectively. Detailed information regarding the cumulative projects is provided in **Appendix G**.



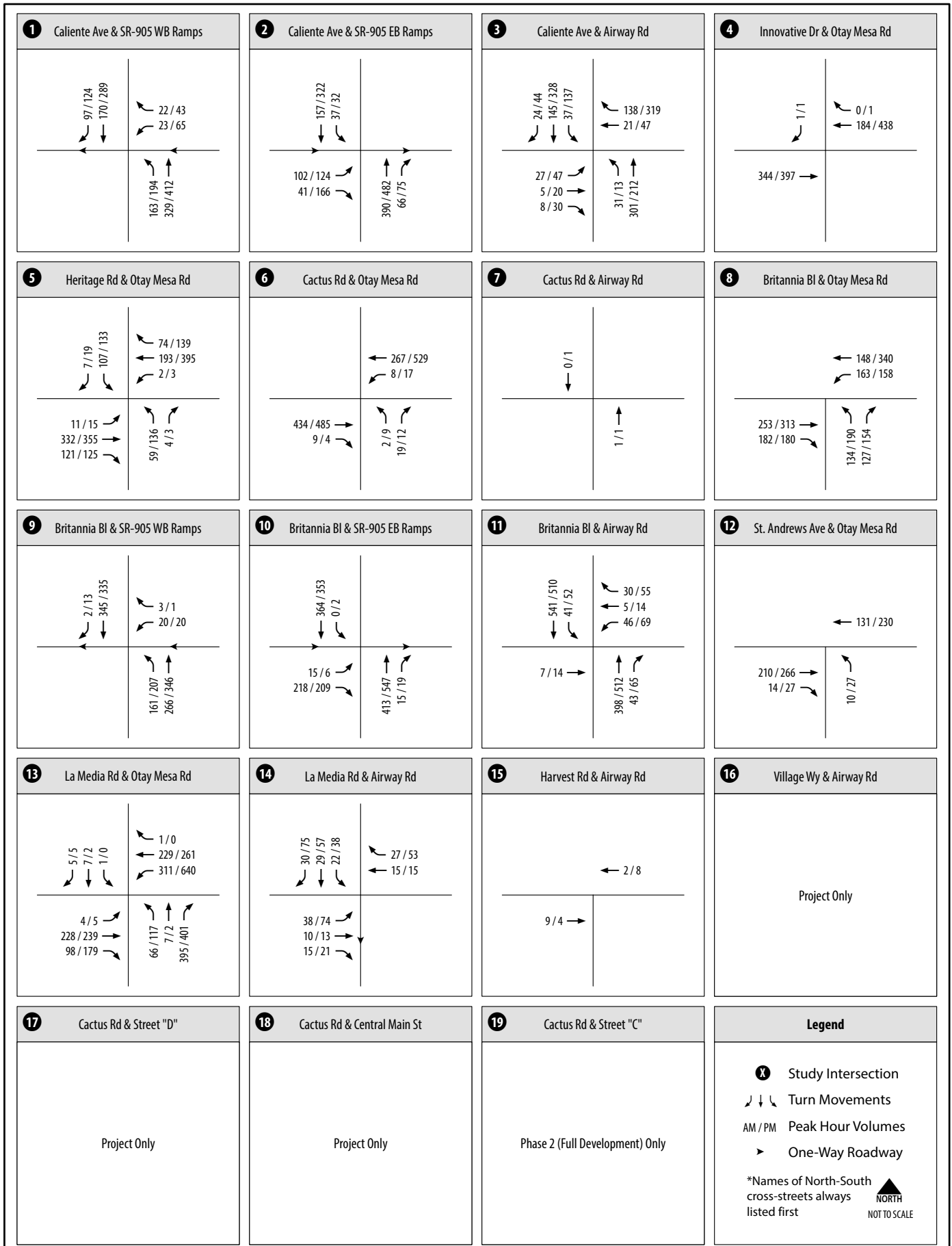
**Otay Mesa Lumina
Transportation Impact Study**

*Figure 6-1
Cumulative Project Locations*



**Otay Mesa Lumina
Transportation Impact Study**

*Figure 6-2
Near-Term Year 2023 Cumulative Projects - Trip Assignment*



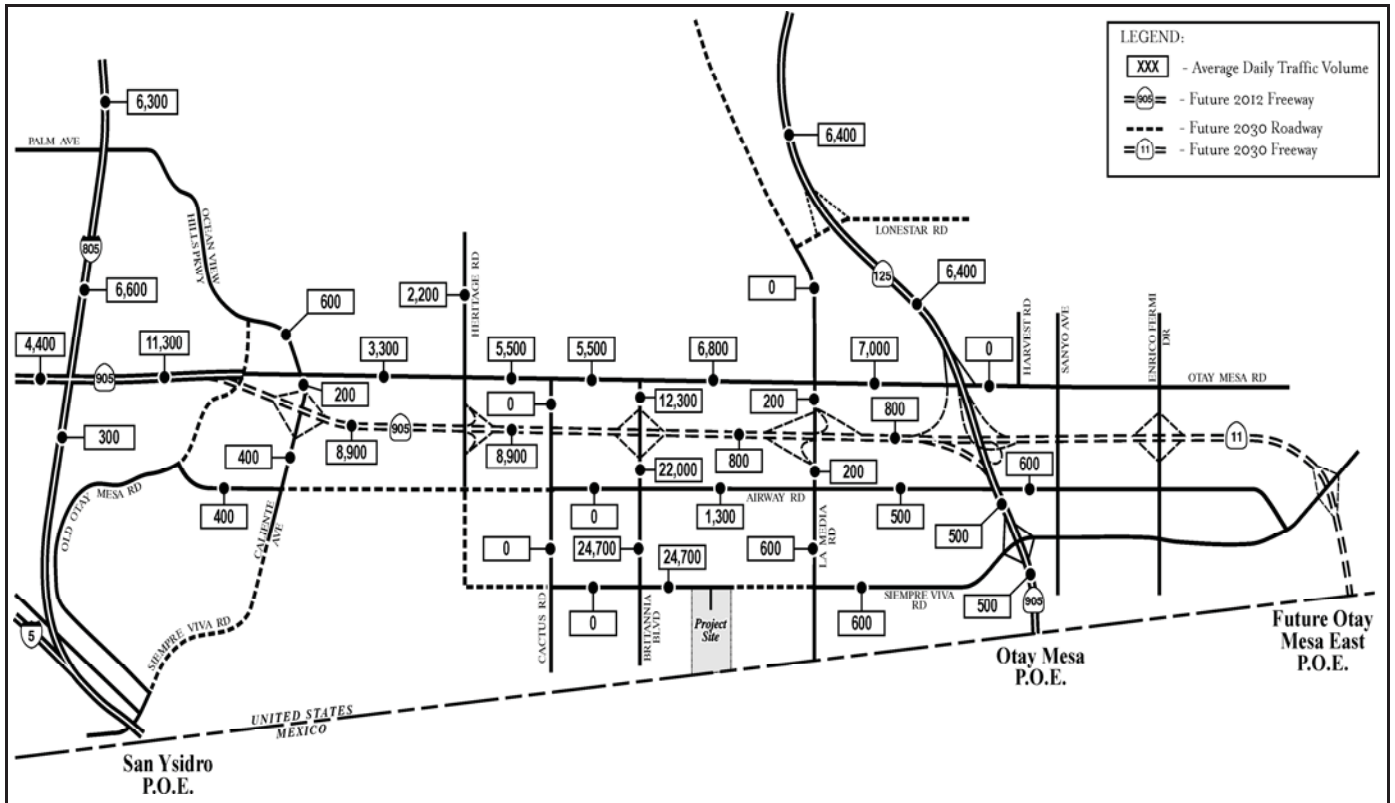
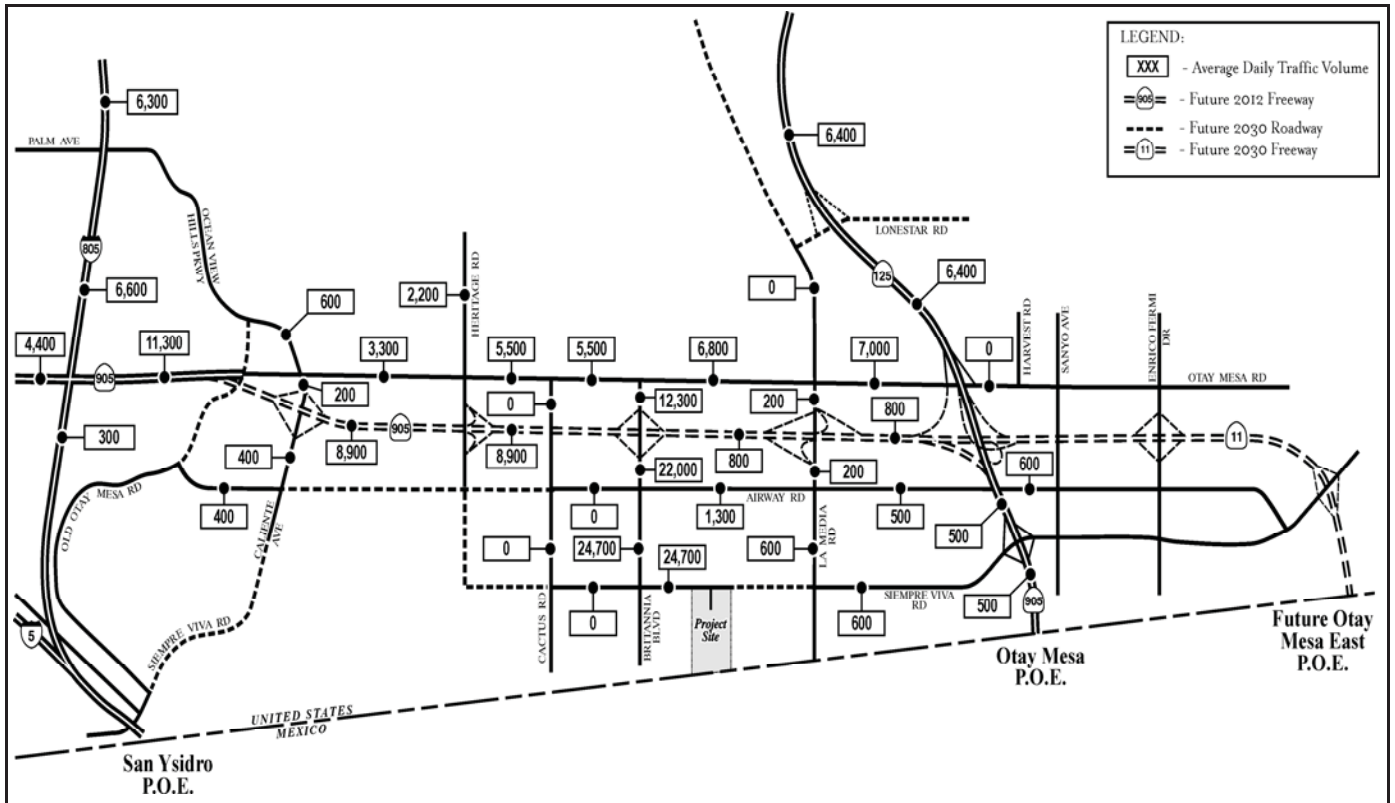


FIGURE 6A

Legend

123 / 456 AM / PM Volume

Otay Cross Border Facility
Project Trip Assignment (Phase 2)



<p>16 Caliente Ave/SR-905 EB Ramps</p>	<p>Future Intersection</p> <p>17 Heritage Rd/SR-905 WB Ramps</p>	<p>Future Intersection</p> <p>18 Heritage Rd/SR-905 EB Ramps</p>	<p>19 Britannia Blvd/SR-905 WB Ramps</p>	<p>20 Britannia Blvd/SR-905 EB Ramps</p>
<p>21 La Media Rd/SR-905 WB Ramps</p>	<p>22 La Media Rd/SR-905 EB Ramps</p>	<p>Future Intersection</p> <p>23 Heritage Rd/Airway Rd</p>	<p>24 Cactus Rd/Airway Rd</p>	<p>25 Caliente Ave/Airway Rd</p>
<p>Future Intersection</p> <p>26 La Media Rd/Lone Star Rd</p>	<p>Future Intersection</p> <p>27 SR-125 SB off-ramp/Lone Star Rd</p>	<p>Future Intersection</p> <p>28 SR-125 NB on-ramp/Lone Star Rd</p>		

FIGURE 6B

Legend

123 / 456 AM / PM Volume

Otay Cross Border Facility
Project Trip Assignment (Phase 2)

INTERSECTION	DIRECTION	TOTAL						Lumina Cumulative Projects - Year 2023						Cross Border Express (from Lumina Appendix)					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Britannia Boulevard / SR 905 WB Ramps	Sb	2	13	50	61	-	-	2	13	345	335	0	0			295	274		
	Wb	3	1	-	-	-	-	3	1	0	0	20	20					20	20
	Nb	-	-	50	70	-	-	0	0	266	346	161	207			216	276	161	207
	Eb	-	-	-	-	-	-	0	0	0	0	0	0						
2. Britannia Boulevard / SR 905 EB Ramps	Sb	-	-	50	59	-	2	0	0	364	353	0	2			314	294		
	Wb	-	-	-	-	-	-	0	0	0	0	0	0						
	Nb	-	-	36	64	-	-	15	19	413	547	0	0	15	19	377	483		
	Eb	-	-	-	-	15	6	218	209	0	0	15	6	218	209				
3. La Media Road / SR 905 WB Ramps	Sb	16	32	395	784	-	-	16	32	400	789					5	5		
	Wb	61	95	-	-	6	8	61	95			6	8						
	Nb	5	26	388	399	-	-	5	26	391	404					3	5		
	Eb	-	-	-	-	16	21					16	21						
Balanced from adjacent intersections																			
4. La Media Road / SR 905 EB Ramps	Sb	66	159	52	189	-	-	66	159	57	194					5	5		
	Wb	-	-	-	-	-	-												
	Nb	-	-	62	122	-	-			65	127					3	5		
	Eb	24	30	-	-	268	265	24	30			268	265						
Balanced from adjacent intersections																			
5. Airway Road / Britannia Boulevard	Sb	-	-	9	7	41	52	0	0	541	510	41	52			532	503		
	Wb	30	55	5	14	10	28	30	55	5	14	46	69					36	41
	Nb	15	27	6	10	-	-	43	65	398	512	0	0	28	38	392	502		
	Eb	-	-	7	14	-	-	0	0	7	14	0	0						
6. Airway Road / Project Driveway (west)	Sb	-	-	-	-	-	-												
	Wb	-	-	26	71	-	-			45	90					19	19		
	Nb	-	-	-	-	-	-												
	Eb	-	-	35	69	-	-			48	87					13	18		
7. Airway Road / Centurion Street / Project Driveway (east)	Sb	-	-	-	-	-	-												
	Wb	-	-	26	71	-	-			45	90					19	19		
	Nb	-	-	-	-	-	-												
	Eb	-	-	35	69	-	-			48	87					13	18		
8. Airway Road / La Media Road	Sb	25	70	29	57	22	38	30	75	29	57	22	38	5	5				
	Wb	27	53	1	1	-	-	27	53	15	15	0	0			14	14		
	Nb	-	-	-	-	-	-	0	0	0	0	0	0						
	Eb	-	-	-	-	35	69	0	0	10	13	38	74			10	13	3	5

Traffic Volume Comparison

Street Segment	Total	Lumina Cumulative Projects - Year 2023	Cross Border Express
Britannia Boulevard			
SR 905 EB Ramps to Airway Road	1,985	23,985	22,000
La Media Road			
SR 905 EB Ramps to Airway Road	4,294	4,494	200
Airway Road			
Britannia Boulevard to Project Driveway (west)	2,113	3,413	1,300
Project Driveway (west) to Project Driveway (east)	1,187	2,487	1,300
Project Driveway (east) to La Media Road	1,187	2,487	1,300

APPENDIX G

NEAR-TERM (OPENING YEAR 2021) INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary
1: Britannia Blvd & SR 905 WB Ramps

NT AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶	↷	↶	↶↷	↶↷↶			↶↷↶	
Traffic Volume (veh/h)	0	0	0	233	1	138	271	292	0	0	317	93
Future Volume (veh/h)	0	0	0	233	1	138	271	292	0	0	317	93
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				259	0	154	301	324	0	0	352	103
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				297	0	508	383	3225	0	0	1892	526
Arrive On Green				0.19	0.00	0.19	0.04	0.23	0.00	0.00	0.54	0.54
Sat Flow, veh/h				1584	0	2708	3072	4689	0	0	3661	977
Grp Volume(v), veh/h				259	0	154	301	324	0	0	301	154
Grp Sat Flow(s),veh/h/ln				1584	0	1354	1536	1513	0	0	1513	1462
Q Serve(g_s), s				15.9	0.0	4.9	9.7	5.6	0.0	0.0	5.1	5.4
Cycle Q Clear(g_c), s				15.9	0.0	4.9	9.7	5.6	0.0	0.0	5.1	5.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.67
Lane Grp Cap(c), veh/h				297	0	508	383	3225	0	0	1631	788
V/C Ratio(X)				0.87	0.00	0.30	0.79	0.10	0.00	0.00	0.18	0.20
Avail Cap(c_a), veh/h				394	0	674	654	3225	0	0	1631	788
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				39.4	0.0	35.0	46.6	13.2	0.0	0.0	11.8	11.9
Incr Delay (d2), s/veh				15.1	0.0	0.3	3.4	0.1	0.0	0.0	0.2	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.3	0.0	1.6	4.1	1.8	0.0	0.0	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				54.5	0.0	35.3	50.0	13.3	0.0	0.0	12.1	12.4
LnGrp LOS				D	A	D	D	B	A	A	B	B
Approach Vol, veh/h					413			625			455	
Approach Delay, s/veh					47.4			31.0			12.2	
Approach LOS					D			C			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.1			17.2	59.0		23.9				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		64.9			* 21	38.9		24.9				
Max Q Clear Time (g_c+I1), s		7.6			11.7	7.4		17.9				
Green Ext Time (p_c), s		2.5			0.8	3.3		0.9				

Intersection Summary

HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
 2: Britannia Blvd & SR 905 EB Ramps

NT AM
 05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	173	1	589	0	0	0	0	391	185	87	463	0
Future Volume (veh/h)	173	1	589	0	0	0	0	391	185	87	463	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	188	1	640				0	425	201	95	503	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	453	2	692				0	1071	500	145	2772	0
Arrive On Green	0.29	0.29	0.29				0.00	0.52	0.52	0.09	1.00	0.00
Sat Flow, veh/h	1576	8	2406				0	2157	969	3072	4689	0
Grp Volume(v), veh/h	189	0	640				0	323	303	95	503	0
Grp Sat Flow(s),veh/h/ln	1584	0	1203				0	1580	1463	1536	1513	0
Q Serve(g_s), s	9.7	0.0	25.8				0.0	12.4	12.7	3.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	25.8				0.0	12.4	12.7	3.0	0.0	0.0
Prop In Lane	0.99		1.00				0.00		0.66	1.00		0.00
Lane Grp Cap(c), veh/h	455	0	692				0	816	755	145	2772	0
V/C Ratio(X)	0.42	0.00	0.93				0.00	0.40	0.40	0.65	0.18	0.00
Avail Cap(c_a), veh/h	474	0	719				0	816	755	316	2772	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.88	0.88	0.91	0.91	0.00
Uniform Delay (d), s/veh	28.8	0.0	34.6				0.0	14.7	14.8	44.5	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	17.5				0.0	1.3	1.4	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	9.1				0.0	4.6	4.3	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	52.1				0.0	16.0	16.2	49.0	0.1	0.0
LnGrp LOS	C	A	D				A	B	B	D	A	A
Approach Vol, veh/h		829						626			598	
Approach Delay, s/veh		47.0						16.1			7.9	
Approach LOS		D						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.4	56.7	33.8	66.2								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	44.9		29.9	59.9								
Max Q Clear Time (g_c+1), s	14.7		27.8	2.0								
Green Ext Time (p_c), s	0.1	4.5	0.9	4.0								

Intersection Summary

HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

NT AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	59	51	69	194	100	840	73	0	939	41
Future Volume (veh/h)	20	0	59	51	69	194	100	840	73	0	939	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	22	0	66	57	78	218	112	944	82	0	1055	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	103	0	83	292	306	249	166	1890	814	0	2811	122
Arrive On Green	0.06	0.00	0.06	0.18	0.18	0.18	0.05	0.60	0.60	0.00	0.50	0.50
Sat Flow, veh/h	1584	0	1284	1584	1663	1353	3072	3159	1361	0	5890	246
Grp Volume(v), veh/h	22	0	66	57	78	218	112	944	82	0	799	302
Grp Sat Flow(s),veh/h/ln	1584	0	1284	1584	1663	1353	1536	1580	1361	0	1430	1612
Q Serve(g_s), s	1.3	0.0	5.1	3.0	4.0	15.7	3.6	17.1	2.6	0.0	11.5	11.6
Cycle Q Clear(g_c), s	1.3	0.0	5.1	3.0	4.0	15.7	3.6	17.1	2.6	0.0	11.5	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.15
Lane Grp Cap(c), veh/h	103	0	83	292	306	249	166	1890	814	0	2132	801
V/C Ratio(X)	0.21	0.00	0.79	0.20	0.25	0.87	0.67	0.50	0.10	0.00	0.37	0.38
Avail Cap(c_a), veh/h	125	0	101	379	397	323	378	1890	814	0	2132	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	0.0	46.1	34.5	34.9	39.7	46.4	11.5	8.6	0.0	15.6	15.6
Incr Delay (d2), s/veh	1.0	0.0	28.8	0.3	0.4	18.5	1.8	0.9	0.2	0.0	0.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.3	1.2	1.7	6.4	1.4	5.8	0.8	0.0	3.7	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	0.0	74.9	34.8	35.4	58.2	48.2	12.5	8.8	0.0	16.1	16.9
LnGrp LOS	D	A	E	C	D	E	D	B	A	A	B	B
Approach Vol, veh/h	88			353			1138			1101		
Approach Delay, s/veh	67.5			49.4			15.7			16.3		
Approach LOS	E			D			B			B		
Timer - Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	64.9		11.6		10.1		54.8		23.5			
Change Period (Y+Rc), s	5.1		5.1		* 4.7		5.1		5.1			
Max Green Setting (Gmax), s	52.9		7.9		* 12		35.9		23.9			
Max Q Clear Time (g_c+I1), s	19.1		7.1		5.6		13.6		17.7			
Green Ext Time (p_c), s	8.7		0.0		0.1		8.1		0.8			

Intersection Summary

HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

NT AM
05/29/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↑↑↑	↑↑	↔
Traffic Volume (veh/h)	736	413	5	214	288	216
Future Volume (veh/h)	736	413	5	214	288	216
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	809	454	5	235	316	237
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	918	741	20	2721	1725	1163
Arrive On Green	0.30	0.30	0.01	0.60	0.55	0.55
Sat Flow, veh/h	3072	2480	3072	4689	3243	1359
Grp Volume(v), veh/h	809	454	5	235	316	237
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1359
Q Serve(g_s), s	25.1	15.7	0.2	2.2	5.0	3.3
Cycle Q Clear(g_c), s	25.1	15.7	0.2	2.2	5.0	3.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	918	741	20	2721	1725	1163
V/C Ratio(X)	0.88	0.61	0.25	0.09	0.18	0.20
Avail Cap(c_a), veh/h	1011	816	194	2721	1725	1163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	30.1	49.4	8.5	11.5	1.5
Incr Delay (d2), s/veh	8.6	1.2	2.4	0.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	10.8	0.1	0.7	1.8	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.0	31.3	51.8	8.5	11.7	1.9
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	1263			240	553	
Approach Delay, s/veh	38.2			9.4	7.5	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.0		35.0	5.3	59.7
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		56.9		32.9	* 6.3	45.9
Max Q Clear Time (g_c+I1), s		4.2		27.1	2.2	7.0
Green Ext Time (p_c), s		1.8		2.8	0.0	3.2
Intersection Summary						
HCM 6th Ctrl Delay			26.6			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary

5: Britannia Blvd & Airway Rd

NT AM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕			↕	↖	↖	↕		↖	↕	↖
Traffic Volume (veh/h)	24	10	3	29	11	149	3	403	32	367	583	102
Future Volume (veh/h)	24	10	3	29	11	149	3	403	32	367	583	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.96	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	20	19	3	32	12	164	3	443	35	403	641	112
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	46	39	6	204	76	236	5	922	72	430	965	789
Arrive On Green	0.03	0.03	0.03	0.17	0.17	0.17	0.00	0.31	0.31	0.27	0.58	0.58
Sat Flow, veh/h	1584	1348	213	1167	438	1351	1584	2955	232	1584	1663	1360
Grp Volume(v), veh/h	20	0	22	44	0	164	3	236	242	403	641	112
Grp Sat Flow(s),veh/h/ln	1584	0	1560	1605	0	1351	1584	1580	1607	1584	1663	1360
Q Serve(g_s), s	1.1	0.0	1.2	2.1	0.0	10.2	0.2	10.8	11.0	22.3	23.6	3.4
Cycle Q Clear(g_c), s	1.1	0.0	1.2	2.1	0.0	10.2	0.2	10.8	11.0	22.3	23.6	3.4
Prop In Lane	1.00		0.14	0.73		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	46	0	45	280	0	236	5	493	501	430	965	789
V/C Ratio(X)	0.44	0.00	0.49	0.16	0.00	0.69	0.59	0.48	0.48	0.94	0.66	0.14
Avail Cap(c_a), veh/h	72	0	71	608	0	512	72	493	501	441	965	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	42.9	31.4	0.0	34.8	44.7	25.0	25.0	31.9	12.9	8.6
Incr Delay (d2), s/veh	2.4	0.0	3.0	0.3	0.0	4.7	34.4	3.3	3.3	26.9	3.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	0.8	0.0	3.6	0.1	4.4	4.5	11.5	8.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	45.9	31.8	0.0	39.5	79.1	28.3	28.3	58.8	16.5	9.0
LnGrp LOS	D	A	D	C	A	D	E	C	C	E	B	A
Approach Vol, veh/h		42			208			481			1156	
Approach Delay, s/veh		45.6			37.8			28.6			30.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.8	33.1		7.0	4.7	57.2		20.9				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	25.0	* 28		4.1	4.1	48.7		34.0				
Max Q Clear Time (g_c+Y), s	24.3	13.0		3.2	2.2	25.6		12.2				
Green Ext Time (p_c), s	0.1	3.3		0.0	0.0	6.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	85	0	0	97	44	0	0	0	6	0	2
Future Vol, veh/h	6	85	0	0	97	44	0	0	0	6	0	2
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	6	89	0	0	102	46	0	0	0	6	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	158	0	0	99	0	0	247	269	109	246	246	145
Stage 1	-	-	-	-	-	-	111	111	-	135	135	-
Stage 2	-	-	-	-	-	-	136	158	-	111	111	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1341	-	-	1494	-	-	707	637	945	680	656	866
Stage 1	-	-	-	-	-	-	894	804	-	836	785	-
Stage 2	-	-	-	-	-	-	867	767	-	861	804	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1328	-	-	1480	-	-	689	621	927	664	640	850
Mov Cap-2 Maneuver	-	-	-	-	-	-	689	621	-	664	640	-
Stage 1	-	-	-	-	-	-	881	792	-	824	777	-
Stage 2	-	-	-	-	-	-	857	759	-	849	792	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	0	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1328	-	-	1480	-	-	702
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.012
HCM Control Delay (s)	0	7.7	0	-	0	-	-	10.2
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	22.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↔						↕↔	
Traffic Vol, veh/h	46	45	0	0	64	173	0	0	0	330	294	77
Future Vol, veh/h	46	45	0	0	64	173	0	0	0	330	294	77
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	48	47	0	0	67	182	0	0	0	347	309	81
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	10.9	12.4	28
HCM LOS	B	B	D

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	51%	0%	69%	0%
Vol Thru, %	49%	27%	31%	66%
Vol Right, %	0%	73%	0%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	237	477	224
LT Vol	46	0	330	0
Through Vol	45	64	147	147
RT Vol	0	173	0	77
Lane Flow Rate	96	249	502	236
Geometry Grp	2	2	7	7
Degree of Util (X)	0.173	0.397	0.861	0.366
Departure Headway (Hd)	6.515	5.723	6.173	5.582
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	551	634	587	646
Service Time	4.552	3.723	3.895	3.303
HCM Lane V/C Ratio	0.174	0.393	0.855	0.365
HCM Control Delay	10.9	12.4	35.7	11.5
HCM Lane LOS	B	B	E	B
HCM 95th-tile Q	0.6	1.9	9.5	1.7

HCM 6th Signalized Intersection Summary
 1: Britannia Blvd & SR 905 WB Ramps

NT PM
 05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↘	↗	↖	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	201	2	149	683	315	0	0	383	291
Future Volume (veh/h)	0	0	0	201	2	149	683	315	0	0	383	291
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				218	0	163	742	342	0	0	416	316
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				246	0	419	822	3371	0	0	1295	589
Arrive On Green				0.16	0.00	0.16	0.45	1.00	0.00	0.00	0.43	0.43
Sat Flow, veh/h				1584	0	2692	3072	4689	0	0	3176	1375
Grp Volume(v), veh/h				218	0	163	742	342	0	0	416	316
Grp Sat Flow(s),veh/h/ln				1584	0	1346	1536	1513	0	0	1513	1375
Q Serve(g_s), s				13.5	0.0	5.4	22.4	0.0	0.0	0.0	9.1	17.1
Cycle Q Clear(g_c), s				13.5	0.0	5.4	22.4	0.0	0.0	0.0	9.1	17.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				246	0	419	822	3371	0	0	1295	589
V/C Ratio(X)				0.89	0.00	0.39	0.90	0.10	0.00	0.00	0.32	0.54
Avail Cap(c_a), veh/h				252	0	428	1085	3371	0	0	1295	589
HCM Platoon Ratio				1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.61	0.61	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				41.4	0.0	38.0	26.5	0.0	0.0	0.0	19.0	21.2
Incr Delay (d2), s/veh				28.6	0.0	0.6	5.6	0.0	0.0	0.0	0.7	3.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.2	0.0	1.8	7.2	0.0	0.0	0.0	3.2	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				70.0	0.0	38.5	32.0	0.0	0.0	0.0	19.6	24.7
LnGrp LOS				E	A	D	C	A	A	A	B	C
Approach Vol, veh/h					381			1084			732	
Approach Delay, s/veh					56.5			21.9			21.8	
Approach LOS					E			C			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		79.3			31.4	47.9		20.7				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		73.9			* 35	33.9		15.9				
Max Q Clear Time (g_c+I1), s		2.0			24.4	19.1		15.5				
Green Ext Time (p_c), s		2.7			2.3	4.4		0.1				

Intersection Summary

HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
2: Britannia Blvd & SR 905 EB Ramps

NT PM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	104	4	328	0	0	0	0	894	372	185	399	0
Future Volume (veh/h)	104	4	328	0	0	0	0	894	372	185	399	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	112	4	353				0	961	400	199	429	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	228	8	353				0	1341	551	258	3400	0
Arrive On Green	0.15	0.15	0.15				0.00	0.62	0.62	0.17	1.00	0.00
Sat Flow, veh/h	1532	55	2366				0	2252	891	3072	4689	0
Grp Volume(v), veh/h	116	0	353				0	697	664	199	429	0
Grp Sat Flow(s),veh/h/ln	1586	0	1183				0	1580	1481	1536	1513	0
Q Serve(g_s), s	6.7	0.0	14.9				0.0	30.1	31.1	6.2	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	14.9				0.0	30.1	31.1	6.2	0.0	0.0
Prop In Lane	0.97		1.00				0.00		0.60	1.00		0.00
Lane Grp Cap(c), veh/h	236	0	353				0	976	915	258	3400	0
V/C Ratio(X)	0.49	0.00	1.00				0.00	0.71	0.73	0.77	0.13	0.00
Avail Cap(c_a), veh/h	236	0	353				0	976	915	378	3400	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.35	0.35	0.84	0.84	0.00
Uniform Delay (d), s/veh	39.1	0.0	42.5				0.0	13.0	13.2	40.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	48.3				0.0	1.6	1.8	4.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	6.7				0.0	10.0	9.8	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	90.8				0.0	14.6	15.0	45.6	0.1	0.0
LnGrp LOS	D	A	F				A	B	B	D	A	A
Approach Vol, veh/h		469						1361			628	
Approach Delay, s/veh		78.4						14.8			14.5	
Approach LOS		E						B			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	33.1	66.9	20.0	80.0								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	33.1	57.9	14.9	74.9								
Max Q Clear Time (g_c+I), s	33.1	33.1	16.9	2.0								
Green Ext Time (p_c), s	0.2	11.6	0.0	3.4								

Intersection Summary

HCM 6th Ctrl Delay	26.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

NT PM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	0	106	72	29	249	96	742	254	0	1559	56
Future Volume (veh/h)	28	0	106	72	29	249	96	742	254	0	1559	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	29	0	110	52	61	259	100	773	265	0	1624	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	158	0	132	330	347	283	152	1701	731	0	2522	90
Arrive On Green	0.10	0.00	0.10	0.21	0.21	0.21	0.05	0.54	0.54	0.00	0.44	0.44
Sat Flow, veh/h	1584	0	1321	1584	1663	1358	3072	3159	1359	0	5940	204
Grp Volume(v), veh/h	29	0	110	52	61	259	100	773	265	0	1221	461
Grp Sat Flow(s),veh/h/ln	1584	0	1321	1584	1663	1358	1536	1580	1359	0	1430	1620
Q Serve(g_s), s	1.7	0.0	8.2	2.7	3.0	18.7	3.2	15.0	11.2	0.0	22.2	22.2
Cycle Q Clear(g_c), s	1.7	0.0	8.2	2.7	3.0	18.7	3.2	15.0	11.2	0.0	22.2	22.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.13
Lane Grp Cap(c), veh/h	158	0	132	330	347	283	152	1701	731	0	1896	716
V/C Ratio(X)	0.18	0.00	0.83	0.16	0.18	0.91	0.66	0.45	0.36	0.00	0.64	0.64
Avail Cap(c_a), veh/h	173	0	144	347	364	297	347	1701	731	0	1896	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	0.0	44.2	32.4	32.5	38.7	46.7	14.1	13.2	0.0	21.8	21.8
Incr Delay (d2), s/veh	0.5	0.0	30.4	0.2	0.2	30.3	1.8	0.9	1.4	0.0	1.7	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	3.8	1.0	1.2	8.5	1.3	5.3	3.6	0.0	7.5	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	0.0	74.5	32.6	32.7	69.0	48.5	15.0	14.6	0.0	23.5	26.2
LnGrp LOS	D	A	E	C	C	E	D	B	B	A	C	C
Approach Vol, veh/h		139			372			1138			1682	
Approach Delay, s/veh		67.7			58.0			17.8			24.2	
Approach LOS		E			E			B			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.9		15.1	9.6	49.3		26.0				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		51.9		10.9	* 11	35.9		21.9				
Max Q Clear Time (g_c+I1), s		17.0		10.2	5.2	24.2		20.7				
Green Ext Time (p_c), s		7.8		0.0	0.1	8.2		0.2				

Intersection Summary

HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

NT PM
05/29/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↑↑↑	↑↑	↖
Traffic Volume (veh/h)	542	225	24	512	440	436
Future Volume (veh/h)	542	225	24	512	440	436
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	571	237	25	539	463	459
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	672	542	77	3084	1919	1135
Arrive On Green	0.22	0.22	0.03	0.68	0.61	0.61
Sat Flow, veh/h	3072	2480	3072	4689	3243	1361
Grp Volume(v), veh/h	571	237	25	539	463	459
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1361
Q Serve(g_s), s	17.8	8.3	0.8	4.3	6.7	8.9
Cycle Q Clear(g_c), s	17.8	8.3	0.8	4.3	6.7	8.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	672	542	77	3084	1919	1135
V/C Ratio(X)	0.85	0.44	0.33	0.17	0.24	0.40
Avail Cap(c_a), veh/h	826	667	255	3084	1919	1135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	33.8	47.9	5.8	9.0	2.3
Incr Delay (d2), s/veh	7.1	0.6	0.9	0.1	0.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.9	0.3	1.3	2.3	5.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.6	34.3	48.8	6.0	9.3	3.4
LnGrp LOS	D	C	D	A	A	A
Approach Vol, veh/h	808			564	922	
Approach Delay, s/veh	41.6			7.9	6.4	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		73.0		27.0	7.2	65.8
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		62.9		26.9	* 8.3	49.9
Max Q Clear Time (g_c+I1), s		6.3		19.8	2.8	10.9
Green Ext Time (p_c), s		4.4		2.0	0.0	5.8

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary
5: Britannia Blvd & Airway Rd

NT PM
05/29/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	23	2	40	19	474	3	680	52	275	355	97
Future Volume (veh/h)	113	23	2	40	19	474	3	680	52	275	355	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	147	0	0	45	21	286	3	764	58	309	399	109
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	204	107	0	272	127	338	5	905	69	307	825	673
Arrive On Green	0.06	0.00	0.00	0.25	0.25	0.25	0.00	0.31	0.31	0.19	0.50	0.50
Sat Flow, veh/h	3167	1663	0	1096	512	1363	1584	2964	225	1584	1663	1357
Grp Volume(v), veh/h	147	0	0	66	0	286	3	407	415	309	399	109
Grp Sat Flow(s),veh/h/ln	1584	1663	0	1608	0	1363	1584	1580	1609	1584	1663	1357
Q Serve(g_s), s	4.6	0.0	0.0	3.3	0.0	20.2	0.2	24.4	24.4	19.6	16.1	4.5
Cycle Q Clear(g_c), s	4.6	0.0	0.0	3.3	0.0	20.2	0.2	24.4	24.4	19.6	16.1	4.5
Prop In Lane	1.00		0.00	0.68		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	204	107	0	398	0	338	5	482	491	307	825	673
V/C Ratio(X)	0.72	0.00	0.00	0.17	0.00	0.85	0.59	0.84	0.84	1.01	0.48	0.16
Avail Cap(c_a), veh/h	207	108	0	540	0	458	64	482	491	307	825	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	0.0	0.0	29.8	0.0	36.2	50.4	32.9	32.9	40.8	16.9	14.0
Incr Delay (d2), s/veh	10.0	0.0	0.0	0.2	0.0	11.5	34.9	16.3	16.1	53.2	2.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	1.3	0.0	7.7	0.1	11.3	11.5	12.1	6.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	0.0	0.0	30.1	0.0	47.8	85.2	49.2	49.0	94.0	18.9	14.5
LnGrp LOS	E	A	A	C	A	D	F	D	D	F	B	B
Approach Vol, veh/h		147			352			825			817	
Approach Delay, s/veh		56.4			44.5			49.3			46.7	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	36.0		10.9	4.7	55.3		30.3				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	19.6	* 31		6.6	4.1	46.2		34.0				
Max Q Clear Time (g_c+T), s	19.6	26.4		6.6	2.2	18.1		22.2				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	4.2		1.5				

Intersection Summary

HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	158	0	0	188	10	0	0	0	30	0	6
Future Vol, veh/h	2	158	0	0	188	10	0	0	0	30	0	6
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	2	168	0	0	200	11	0	0	0	32	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	178	0	0	401	403	188	398	398	226
Stage 1	-	-	-	-	-	-	182	182	-	216	216	-
Stage 2	-	-	-	-	-	-	219	221	-	182	182	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1270	-	-	1398	-	-	560	536	854	538	540	780
Stage 1	-	-	-	-	-	-	820	749	-	755	724	-
Stage 2	-	-	-	-	-	-	783	720	-	788	749	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1258	-	-	1385	-	-	544	524	838	527	528	765
Mov Cap-2 Maneuver	-	-	-	-	-	-	544	524	-	527	528	-
Stage 1	-	-	-	-	-	-	810	740	-	746	717	-
Stage 2	-	-	-	-	-	-	769	713	-	779	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1258	-	-	1385	-	-	556
HCM Lane V/C Ratio	-	0.002	-	-	-	-	-	0.069
HCM Control Delay (s)		0	7.9	0	-	0	-	12
HCM Lane LOS		A	A	A	-	A	-	B
HCM 95th %tile Q(veh)		-	0	-	-	0	-	0.2

Intersection	
Intersection Delay, s/veh	28.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Traffic Vol, veh/h	111	77	0	0	81	425	0	0	0	254	240	117
Future Vol, veh/h	111	77	0	0	81	425	0	0	0	254	240	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	118	82	0	0	86	452	0	0	0	270	255	124
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	14.6	36.1	26.8
HCM LOS	B	E	D

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	59%	0%	68%	0%
Vol Thru, %	41%	16%	32%	51%
Vol Right, %	0%	84%	0%	49%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	188	506	374	237
LT Vol	111	0	254	0
Through Vol	77	81	120	120
RT Vol	0	425	0	117
Lane Flow Rate	200	538	398	252
Geometry Grp	2	2	7	7
Degree of Util (X)	0.391	0.872	0.807	0.462
Departure Headway (Hd)	7.042	5.829	7.3	6.602
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	508	619	493	545
Service Time	5.128	3.893	5.069	4.37
HCM Lane V/C Ratio	0.394	0.869	0.807	0.462
HCM Control Delay	14.6	36.1	34.2	15
HCM Lane LOS	B	E	D	B
HCM 95th-tile Q	1.8	10.1	7.6	2.4

APPENDIX H

NEAR-TERM (OPENING YEAR 2021) + PROJECT INTERSECTION ANALYSIS WORKSHEETS

HCM 6th Signalized Intersection Summary
 1: Britannia Blvd & SR 905 WB Ramps

NT + P AM
 06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶	↷	↶	↶↷	↶↷↶			↶↷↶	
Traffic Volume (veh/h)	0	0	0	233	1	138	295	295	0	0	325	93
Future Volume (veh/h)	0	0	0	233	1	138	295	295	0	0	325	93
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				259	0	154	328	328	0	0	361	103
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				297	0	508	411	3225	0	0	1871	508
Arrive On Green				0.19	0.00	0.19	0.04	0.23	0.00	0.00	0.53	0.53
Sat Flow, veh/h				1584	0	2708	3072	4689	0	0	3681	960
Grp Volume(v), veh/h				259	0	154	328	328	0	0	307	157
Grp Sat Flow(s),veh/h/ln				1584	0	1354	1536	1513	0	0	1513	1465
Q Serve(g_s), s				15.9	0.0	4.9	10.6	5.7	0.0	0.0	5.3	5.7
Cycle Q Clear(g_c), s				15.9	0.0	4.9	10.6	5.7	0.0	0.0	5.3	5.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.66
Lane Grp Cap(c), veh/h				297	0	508	411	3225	0	0	1603	776
V/C Ratio(X)				0.87	0.00	0.30	0.80	0.10	0.00	0.00	0.19	0.20
Avail Cap(c_a), veh/h				394	0	674	654	3225	0	0	1603	776
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				39.4	0.0	35.0	46.5	13.3	0.0	0.0	12.3	12.4
Incr Delay (d2), s/veh				15.1	0.0	0.3	3.4	0.1	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.3	0.0	1.6	4.5	1.9	0.0	0.0	1.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				54.5	0.0	35.3	49.9	13.3	0.0	0.0	12.6	13.0
LnGrp LOS				D	A	D	D	B	A	A	B	B
Approach Vol, veh/h					413			656			464	
Approach Delay, s/veh					47.4			31.6			12.7	
Approach LOS					D			C			B	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		76.1			18.1	58.1		23.9				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		64.9			* 21	38.9		24.9				
Max Q Clear Time (g_c+I1), s		7.7			12.6	7.7		17.9				
Green Ext Time (p_c), s		2.5			0.8	3.3		0.9				

Intersection Summary

HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

2: Britannia Blvd & SR 905 EB Ramps

NT + P AM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	173	1	659	0	0	0	0	418	185	87	471	0
Future Volume (veh/h)	173	1	659	0	0	0	0	418	185	87	471	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	188	1	716				0	454	201	95	512	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	471	3	720				0	1070	469	145	2719	0
Arrive On Green	0.30	0.30	0.30				0.00	0.50	0.50	0.09	1.00	0.00
Sat Flow, veh/h	1576	8	2408				0	2203	930	3072	4689	0
Grp Volume(v), veh/h	189	0	716				0	337	318	95	512	0
Grp Sat Flow(s),veh/h/ln	1584	0	1204				0	1580	1471	1536	1513	0
Q Serve(g_s), s	9.5	0.0	29.7				0.0	13.4	13.7	3.0	0.0	0.0
Cycle Q Clear(g_c), s	9.5	0.0	29.7				0.0	13.4	13.7	3.0	0.0	0.0
Prop In Lane	0.99		1.00				0.00		0.63	1.00		0.00
Lane Grp Cap(c), veh/h	474	0	720				0	797	742	145	2719	0
V/C Ratio(X)	0.40	0.00	0.99				0.00	0.42	0.43	0.65	0.19	0.00
Avail Cap(c_a), veh/h	474	0	720				0	797	742	316	2719	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.87	0.87	0.91	0.91	0.00
Uniform Delay (d), s/veh	27.9	0.0	35.0				0.0	15.6	15.6	44.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	32.1				0.0	1.4	1.6	4.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	11.7				0.0	5.0	4.7	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	0.0	67.1				0.0	17.0	17.2	49.0	0.1	0.0
LnGrp LOS	C	A	E				A	B	B	D	A	A
Approach Vol, veh/h		905						655			607	
Approach Delay, s/veh		59.0						17.1			7.8	
Approach LOS		E						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.4	55.6	35.0	65.0								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	44.9		29.9	59.9								
Max Q Clear Time (g_c+1), s	15.7		31.7	2.0								
Green Ext Time (p_c), s	0.1	4.7	0.0	4.1								

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

NT + P AM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	59	61	69	194	100	850	88	0	967	41
Future Volume (veh/h)	20	0	59	61	69	194	100	850	88	0	967	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	22	0	66	69	78	218	112	955	99	0	1087	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	93	0	75	292	307	250	166	1907	822	0	2846	120
Arrive On Green	0.06	0.00	0.06	0.18	0.18	0.18	0.05	0.60	0.60	0.00	0.50	0.50
Sat Flow, veh/h	1584	0	1274	1584	1663	1353	3072	3159	1361	0	5898	239
Grp Volume(v), veh/h	22	0	66	69	78	218	112	955	99	0	822	311
Grp Sat Flow(s),veh/h/ln	1584	0	1274	1584	1663	1353	1536	1580	1361	0	1430	1613
Q Serve(g_s), s	1.3	0.0	5.1	3.7	4.0	15.7	3.6	17.2	3.1	0.0	11.8	11.9
Cycle Q Clear(g_c), s	1.3	0.0	5.1	3.7	4.0	15.7	3.6	17.2	3.1	0.0	11.8	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.15
Lane Grp Cap(c), veh/h	93	0	75	292	307	250	166	1907	822	0	2156	811
V/C Ratio(X)	0.24	0.00	0.88	0.24	0.25	0.87	0.67	0.50	0.12	0.00	0.38	0.38
Avail Cap(c_a), veh/h	93	0	75	379	397	323	378	1907	822	0	2156	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	46.7	34.8	34.9	39.6	46.4	11.3	8.5	0.0	15.3	15.3
Incr Delay (d2), s/veh	1.3	0.0	64.4	0.4	0.4	18.4	1.8	0.9	0.3	0.0	0.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	3.0	1.5	1.7	6.4	1.4	5.8	0.9	0.0	3.8	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	0.0	111.1	35.2	35.3	58.1	48.2	12.2	8.8	0.0	15.8	16.7
LnGrp LOS	D	A	F	D	D	E	D	B	A	A	B	B
Approach Vol, veh/h		88			365			1166			1133	
Approach Delay, s/veh		94.8			48.9			15.4			16.1	
Approach LOS		F			D			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		65.5		11.0	10.1	55.3		23.5				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		54.9		5.9	* 12	37.9		23.9				
Max Q Clear Time (g_c+I1), s		19.2		7.1	5.6	13.9		17.7				
Green Ext Time (p_c), s		9.0		0.0	0.1	8.7		0.8				

Intersection Summary

HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

NT + P AM
06/11/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖↗	↖↗	↑↑↑	↑↑	↖
Traffic Volume (veh/h)	736	457	8	239	326	216
Future Volume (veh/h)	736	457	8	239	326	216
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	809	502	9	263	358	237
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	910	735	34	2731	1718	1156
Arrive On Green	0.30	0.30	0.01	0.60	0.54	0.54
Sat Flow, veh/h	3072	2480	3072	4689	3243	1359
Grp Volume(v), veh/h	809	502	9	263	358	237
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1359
Q Serve(g_s), s	25.2	17.9	0.3	2.4	5.8	3.4
Cycle Q Clear(g_c), s	25.2	17.9	0.3	2.4	5.8	3.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	910	735	34	2731	1718	1156
V/C Ratio(X)	0.89	0.68	0.26	0.10	0.21	0.20
Avail Cap(c_a), veh/h	980	791	194	2731	1718	1156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	31.0	49.0	8.4	11.7	1.6
Incr Delay (d2), s/veh	9.6	2.2	1.5	0.1	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	12.1	0.1	0.8	2.0	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.2	33.3	50.6	8.5	12.0	2.0
LnGrp LOS	D	C	D	A	B	A
Approach Vol, veh/h	1311			272	595	
Approach Delay, s/veh	39.4			9.9	8.0	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.3		34.7	5.8	59.5
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		57.9		31.9	* 6.3	46.9
Max Q Clear Time (g_c+I1), s		4.4		27.2	2.3	7.8
Green Ext Time (p_c), s		2.0		2.5	0.0	3.6
Intersection Summary						
HCM 6th Ctrl Delay			27.1			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary
5: Britannia Blvd & Airway Rd

NT + P AM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	10	3	29	11	176	3	403	32	445	583	102
Future Volume (veh/h)	24	10	3	29	11	176	3	403	32	445	583	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.79	1.00		0.96	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	20	19	3	32	12	193	3	443	35	489	641	112
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	45	38	6	225	84	261	5	894	70	428	947	774
Arrive On Green	0.03	0.03	0.03	0.19	0.19	0.19	0.00	0.30	0.30	0.27	0.57	0.57
Sat Flow, veh/h	1584	1346	212	1167	438	1355	1584	2955	232	1584	1663	1360
Grp Volume(v), veh/h	20	0	22	44	0	193	3	236	242	489	641	112
Grp Sat Flow(s),veh/h/ln	1584	0	1558	1605	0	1355	1584	1580	1607	1584	1663	1360
Q Serve(g_s), s	1.1	0.0	1.3	2.1	0.0	12.4	0.2	11.3	11.4	25.0	25.0	3.6
Cycle Q Clear(g_c), s	1.1	0.0	1.3	2.1	0.0	12.4	0.2	11.3	11.4	25.0	25.0	3.6
Prop In Lane	1.00		0.14	0.73		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	45	0	44	309	0	261	5	478	486	428	947	774
V/C Ratio(X)	0.44	0.00	0.49	0.14	0.00	0.74	0.59	0.49	0.50	1.14	0.68	0.14
Avail Cap(c_a), veh/h	70	0	69	589	0	498	70	478	486	428	947	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	0.0	44.3	31.0	0.0	35.2	46.1	26.5	26.5	33.8	14.0	9.3
Incr Delay (d2), s/veh	2.5	0.0	3.1	0.3	0.0	5.2	34.5	3.6	3.6	88.8	3.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	0.8	0.0	4.4	0.1	4.7	4.8	19.9	9.6	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	0.0	47.4	31.3	0.0	40.4	80.6	30.1	30.1	122.6	17.8	9.7
LnGrp LOS	D	A	D	C	A	D	F	C	C	F	B	A
Approach Vol, veh/h		42			237			481			1242	
Approach Delay, s/veh		47.1			38.7			30.4			58.3	
Approach LOS		D			D			C			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.4	33.1		7.0	4.7	57.8		23.0				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	25.0	* 28		4.1	4.1	48.7		34.0				
Max Q Clear Time (g_c+T), s	27.0	13.4		3.3	2.2	27.0		14.4				
Green Ext Time (p_c), s	0.0	3.2		0.0	0.0	6.7		1.2				

Intersection Summary

HCM 6th Ctrl Delay	49.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Project Driveway (West) & Airway Rd

NT + P AM
06/11/2020

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	122	47	52	110	16	18
Future Vol, veh/h	122	47	52	110	16	18
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	128	49	55	116	17	19

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	187	0	399 173
Stage 1	-	-	-	-	163 -
Stage 2	-	-	-	-	236 -
Critical Hdwy	-	-	4.26	-	6.56 6.36
Critical Hdwy Stg 1	-	-	-	-	5.56 -
Critical Hdwy Stg 2	-	-	-	-	5.56 -
Follow-up Hdwy	-	-	2.344	-	3.644 3.444
Pot Cap-1 Maneuver	-	-	1307	-	580 836
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	771 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1295	-	543 820
Mov Cap-2 Maneuver	-	-	-	-	543 -
Stage 1	-	-	-	-	825 -
Stage 2	-	-	-	-	729 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	661	-	-	1295	-
HCM Lane V/C Ratio	0.054	-	-	0.042	-
HCM Control Delay (s)	10.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	103	31	35	149	44	11	0	12	6	0	2
Future Vol, veh/h	6	103	31	35	149	44	11	0	12	6	0	2
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	6	108	33	37	157	46	12	0	13	6	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	151	0	0	412	434	145	417	427	200
Stage 1	-	-	-	-	-	-	147	147	-	264	264	-
Stage 2	-	-	-	-	-	-	265	287	-	153	163	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1278	-	-	1430	-	-	550	515	902	522	520	807
Stage 1	-	-	-	-	-	-	856	775	-	711	690	-
Stage 2	-	-	-	-	-	-	740	674	-	817	763	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1266	-	-	1416	-	-	524	487	885	491	492	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	524	487	-	491	492	-
Stage 1	-	-	-	-	-	-	844	763	-	701	662	-
Stage 2	-	-	-	-	-	-	709	647	-	794	752	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.2			10.6			11.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	666	1266	-	-	1416	-	-	543
HCM Lane V/C Ratio	0.036	0.005	-	-	0.026	-	-	0.016
HCM Control Delay (s)	10.6	7.9	0	-	7.6	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

Intersection	
Intersection Delay, s/veh	23.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕↕	
Traffic Vol, veh/h	74	47	0	0	69	173	0	0	0	330	294	159
Future Vol, veh/h	74	47	0	0	69	173	0	0	0	330	294	159
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	78	49	0	0	73	182	0	0	0	347	309	167
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	11.7	12.9	29.1
HCM LOS	B	B	D

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	61%	0%	69%	0%
Vol Thru, %	39%	29%	31%	48%
Vol Right, %	0%	71%	0%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	242	477	306
LT Vol	74	0	330	0
Through Vol	47	69	147	147
RT Vol	0	173	0	159
Lane Flow Rate	127	255	502	322
Geometry Grp	2	2	7	7
Degree of Util (X)	0.234	0.413	0.88	0.5
Departure Headway (Hd)	6.621	5.836	6.307	5.59
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	543	616	577	647
Service Time	4.654	3.866	4.028	3.311
HCM Lane V/C Ratio	0.234	0.414	0.87	0.498
HCM Control Delay	11.7	12.9	38.9	13.8
HCM Lane LOS	B	B	E	B
HCM 95th-tile Q	0.9	2	10.1	2.8

HCM 6th Signalized Intersection Summary
 1: Britannia Blvd & SR 905 WB Ramps

NT + P PM
 06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖↖			↖↖↖	
Traffic Volume (veh/h)	0	0	0	201	2	149	746	323	0	0	387	291
Future Volume (veh/h)	0	0	0	201	2	149	746	323	0	0	387	291
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1663	1663	1663	1663	1663	0	0	1663	1663
Adj Flow Rate, veh/h				218	0	163	811	351	0	0	421	316
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				16	16	16	16	16	0	0	16	16
Cap, veh/h				246	0	419	885	3371	0	0	1233	560
Arrive On Green				0.16	0.00	0.16	0.48	1.00	0.00	0.00	0.41	0.41
Sat Flow, veh/h				1584	0	2692	3072	4689	0	0	3176	1375
Grp Volume(v), veh/h				218	0	163	811	351	0	0	421	316
Grp Sat Flow(s),veh/h/ln				1584	0	1346	1536	1513	0	0	1513	1375
Q Serve(g_s), s				13.5	0.0	5.4	24.5	0.0	0.0	0.0	9.6	17.7
Cycle Q Clear(g_c), s				13.5	0.0	5.4	24.5	0.0	0.0	0.0	9.6	17.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				246	0	419	885	3371	0	0	1233	560
V/C Ratio(X)				0.89	0.00	0.39	0.92	0.10	0.00	0.00	0.34	0.56
Avail Cap(c_a), veh/h				252	0	428	1085	3371	0	0	1233	560
HCM Platoon Ratio				1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.55	0.55	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				41.4	0.0	38.0	24.8	0.0	0.0	0.0	20.4	22.8
Incr Delay (d2), s/veh				28.6	0.0	0.6	6.3	0.0	0.0	0.0	0.8	4.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.2	0.0	1.8	7.7	0.0	0.0	0.0	3.5	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				70.0	0.0	38.5	31.1	0.0	0.0	0.0	21.2	26.9
LnGrp LOS				E	A	D	C	A	A	A	C	C
Approach Vol, veh/h					381			1162			737	
Approach Delay, s/veh					56.5			21.7			23.6	
Approach LOS					E			C			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		79.3			33.5	45.8		20.7				
Change Period (Y+Rc), s		5.1			* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		73.9			* 35	33.9		15.9				
Max Q Clear Time (g_c+I1), s		2.0			26.5	19.7		15.5				
Green Ext Time (p_c), s		2.7			2.3	4.4		0.1				

Intersection Summary

HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

2: Britannia Blvd & SR 905 EB Ramps

NT + P PM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕		↗	↕	↕
Traffic Volume (veh/h)	104	4	364	0	0	0	0	965	372	185	403	0
Future Volume (veh/h)	104	4	364	0	0	0	0	965	372	185	403	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663				0	1663	1663	1663	1663	0
Adj Flow Rate, veh/h	112	4	391				0	1038	400	199	433	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	16	16	16				0	16	16	16	16	0
Cap, veh/h	228	8	353				0	1376	521	258	3400	0
Arrive On Green	0.15	0.15	0.15				0.00	0.62	0.62	0.17	1.00	0.00
Sat Flow, veh/h	1532	55	2366				0	2310	844	3072	4689	0
Grp Volume(v), veh/h	116	0	391				0	731	707	199	433	0
Grp Sat Flow(s),veh/h/ln	1586	0	1183				0	1580	1490	1536	1513	0
Q Serve(g_s), s	6.7	0.0	14.9				0.0	32.9	34.4	6.2	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	14.9				0.0	32.9	34.4	6.2	0.0	0.0
Prop In Lane	0.97		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	236	0	353				0	976	921	258	3400	0
V/C Ratio(X)	0.49	0.00	1.11				0.00	0.75	0.77	0.77	0.13	0.00
Avail Cap(c_a), veh/h	236	0	353				0	976	921	378	3400	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.23	0.23	0.82	0.82	0.00
Uniform Delay (d), s/veh	39.1	0.0	42.5				0.0	13.6	13.9	40.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	80.7				0.0	1.3	1.5	4.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	8.2				0.0	10.8	10.7	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	123.3				0.0	14.8	15.3	45.4	0.1	0.0
LnGrp LOS	D	A	F				A	B	B	D	A	A
Approach Vol, veh/h		507						1438			632	
Approach Delay, s/veh		104.4						15.1			14.4	
Approach LOS		F						B			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	33.1	66.9	20.0	80.0								
Change Period (Y+Rc), s	4.7	5.1	5.1	5.1								
Max Green Setting (Gmax), s	33.1	57.9	14.9	74.9								
Max Q Clear Time (g_c+I), s	10.2	36.4	16.9	2.0								
Green Ext Time (p_c), s	0.2	11.5	0.0	3.4								

Intersection Summary

HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: La Media Rd & SR 905 WB Ramps

NT + P PM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	0	106	77	29	249	96	767	295	0	1574	56
Future Volume (veh/h)	28	0	106	77	29	249	96	767	295	0	1574	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.96	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	0	1663	1663
Adj Flow Rate, veh/h	29	0	110	55	65	259	100	799	307	0	1640	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	0	16	16
Cap, veh/h	141	0	117	330	347	283	152	1736	747	0	2586	91
Arrive On Green	0.09	0.00	0.09	0.21	0.21	0.21	0.05	0.55	0.55	0.00	0.45	0.45
Sat Flow, veh/h	1584	0	1313	1584	1663	1358	3072	3159	1359	0	5942	202
Grp Volume(v), veh/h	29	0	110	55	65	259	100	799	307	0	1232	466
Grp Sat Flow(s),veh/h/ln	1584	0	1313	1584	1663	1358	1536	1580	1359	0	1430	1621
Q Serve(g_s), s	1.7	0.0	8.3	2.8	3.2	18.7	3.2	15.3	13.2	0.0	22.0	22.1
Cycle Q Clear(g_c), s	1.7	0.0	8.3	2.8	3.2	18.7	3.2	15.3	13.2	0.0	22.0	22.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.12
Lane Grp Cap(c), veh/h	141	0	117	330	347	283	152	1736	747	0	1943	734
V/C Ratio(X)	0.21	0.00	0.94	0.17	0.19	0.91	0.66	0.46	0.41	0.00	0.63	0.63
Avail Cap(c_a), veh/h	141	0	117	347	364	297	347	1736	747	0	1943	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	45.3	32.4	32.6	38.7	46.7	13.6	13.1	0.0	21.0	21.0
Incr Delay (d2), s/veh	0.7	0.0	65.0	0.2	0.3	30.3	1.8	0.9	1.7	0.0	1.6	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.8	1.1	1.3	8.5	1.3	5.4	4.2	0.0	7.4	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	110.3	32.7	32.8	69.0	48.5	14.5	14.8	0.0	22.6	25.1
LnGrp LOS	D	A	F	C	C	E	D	B	B	A	C	C
Approach Vol, veh/h		139			379			1206			1698	
Approach Delay, s/veh		96.2			57.5			17.4			23.3	
Approach LOS		F			E			B			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		60.0		14.0	9.6	50.4		26.0				
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s		53.9		8.9	* 11	37.9		21.9				
Max Q Clear Time (g_c+I1), s		17.3		10.3	5.2	24.1		20.7				
Green Ext Time (p_c), s		8.4		0.0	0.1	9.4		0.2				

Intersection Summary

HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

4: La Media Rd & SR 905 EB Ramps

NT + P PM
06/11/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↶↷	↶↷	↑↑↑	↑↑	↶
Traffic Volume (veh/h)	542	248	33	578	460	436
Future Volume (veh/h)	542	248	33	578	460	436
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	571	261	35	608	484	459
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	16	16	16	16	16	16
Cap, veh/h	662	535	96	3098	1909	1126
Arrive On Green	0.22	0.22	0.03	0.68	0.60	0.60
Sat Flow, veh/h	3072	2480	3072	4689	3243	1361
Grp Volume(v), veh/h	571	261	35	608	484	459
Grp Sat Flow(s),veh/h/ln	1536	1240	1536	1513	1580	1361
Q Serve(g_s), s	17.9	9.2	1.1	4.9	7.2	9.2
Cycle Q Clear(g_c), s	17.9	9.2	1.1	4.9	7.2	9.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	662	535	96	3098	1909	1126
V/C Ratio(X)	0.86	0.49	0.37	0.20	0.25	0.41
Avail Cap(c_a), veh/h	765	618	255	3098	1909	1126
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	34.4	47.5	5.8	9.2	2.4
Incr Delay (d2), s/veh	8.9	0.7	0.9	0.1	0.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	6.5	0.4	1.4	2.4	6.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.7	35.1	48.4	6.0	9.6	3.5
LnGrp LOS	D	D	D	A	A	A
Approach Vol, veh/h	832			643	943	
Approach Delay, s/veh	43.1			8.3	6.6	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		73.3		26.7	7.8	65.5
Change Period (Y+Rc), s		5.1		5.1	* 4.7	5.1
Max Green Setting (Gmax), s		64.9		24.9	* 8.3	51.9
Max Q Clear Time (g_c+I1), s		6.9		19.9	3.1	11.2
Green Ext Time (p_c), s		5.0		1.6	0.0	6.0
Intersection Summary						
HCM 6th Ctrl Delay			19.6			
HCM 6th LOS			B			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary
5: Britannia Blvd & Airway Rd

NT + P PM
06/11/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	23	2	40	19	545	3	680	52	315	355	97
Future Volume (veh/h)	113	23	2	40	19	545	3	680	52	315	355	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663	1663
Adj Flow Rate, veh/h	147	0	0	45	21	241	3	764	58	354	399	109
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	16	16	16	16	16	16	16	16	16	16	16	16
Cap, veh/h	205	108	0	243	113	302	5	939	71	318	855	698
Arrive On Green	0.06	0.00	0.00	0.22	0.22	0.22	0.00	0.32	0.32	0.20	0.51	0.51
Sat Flow, veh/h	3167	1663	0	1096	512	1360	1584	2964	225	1584	1663	1358
Grp Volume(v), veh/h	147	0	0	66	0	241	3	407	415	354	399	109
Grp Sat Flow(s),veh/h/ln	1584	1663	0	1608	0	1360	1584	1580	1609	1584	1663	1358
Q Serve(g_s), s	4.4	0.0	0.0	3.2	0.0	16.4	0.2	23.1	23.2	19.6	15.0	4.1
Cycle Q Clear(g_c), s	4.4	0.0	0.0	3.2	0.0	16.4	0.2	23.1	23.2	19.6	15.0	4.1
Prop In Lane	1.00		0.00	0.68		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	205	108	0	357	0	302	5	500	510	318	855	698
V/C Ratio(X)	0.72	0.00	0.00	0.19	0.00	0.80	0.59	0.81	0.81	1.11	0.47	0.16
Avail Cap(c_a), veh/h	214	112	0	560	0	474	67	500	510	318	855	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	0.0	0.0	30.8	0.0	35.9	48.6	30.7	30.7	39.0	15.1	12.5
Incr Delay (d2), s/veh	8.7	0.0	0.0	0.3	0.0	6.4	34.7	13.5	13.3	84.3	1.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	1.3	0.0	5.9	0.1	10.4	10.6	14.9	5.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	0.0	0.0	31.1	0.0	42.3	83.3	44.2	44.0	123.3	17.0	13.0
LnGrp LOS	D	A	A	C	A	D	F	D	D	F	B	B
Approach Vol, veh/h		147			307			825			862	
Approach Delay, s/veh		53.5			39.9			44.3			60.1	
Approach LOS		D			D			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	36.0		10.7	4.7	55.3		26.8				
Change Period (Y+Rc), s	4.4	* 5.1		4.4	4.4	5.1		5.2				
Max Green Setting (Gmax), s	19.6	* 31		6.6	4.1	46.2		34.0				
Max Q Clear Time (g_c+T), s	19.6	25.2		6.4	2.2	17.0		18.4				
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	4.2		1.5				

Intersection Summary

HCM 6th Ctrl Delay	50.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
6: Project Driveway (West) & Airway Rd

NT + P PM
06/11/2020

Intersection

Int Delay, s/veh 2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	24	28	222	43	48
Future Vol, veh/h	176	24	28	222	43	48
Conflicting Peds, #/hr	0	10	10	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	16	16	16	16	16	16
Mvmt Flow	187	26	30	236	46	51

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	223	0	516
Stage 1	-	-	-	-	210
Stage 2	-	-	-	-	306
Critical Hdwy	-	-	4.26	-	6.56
Critical Hdwy Stg 1	-	-	-	-	5.56
Critical Hdwy Stg 2	-	-	-	-	5.56
Follow-up Hdwy	-	-	2.344	-	3.644
Pot Cap-1 Maneuver	-	-	1267	-	495
Stage 1	-	-	-	-	793
Stage 2	-	-	-	-	716
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1255	-	472
Mov Cap-2 Maneuver	-	-	-	-	472
Stage 1	-	-	-	-	785
Stage 2	-	-	-	-	690

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	1255	-
HCM Lane V/C Ratio	0.163	-	-	0.024	-
HCM Control Delay (s)	12.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

HCM 6th TWSC
7: Project Driveway (East)/Centurion St & Airway Rd

NT + P PM
06/11/2020

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	206	16	18	216	10	28	0	32	30	0	6
Future Vol, veh/h	2	206	16	18	216	10	28	0	32	30	0	6
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	16	16	2	2	16	16	2	2	2	16	2	16
Mvmt Flow	2	219	17	19	230	11	30	0	34	32	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	0	246	0	0	529	531	248	543	534	256
Stage 1	-	-	-	-	-	-	242	242	-	284	284	-
Stage 2	-	-	-	-	-	-	287	289	-	259	250	-
Critical Hdwy	4.26	-	-	4.12	-	-	7.12	6.52	6.22	7.26	6.52	6.36
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.26	5.52	-
Follow-up Hdwy	2.344	-	-	2.218	-	-	3.518	4.018	3.318	3.644	4.018	3.444
Pot Cap-1 Maneuver	1237	-	-	1320	-	-	460	454	791	430	452	750
Stage 1	-	-	-	-	-	-	762	705	-	694	676	-
Stage 2	-	-	-	-	-	-	720	673	-	716	700	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1225	-	-	1307	-	-	441	437	776	397	435	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	441	437	-	397	435	-
Stage 1	-	-	-	-	-	-	753	697	-	686	658	-
Stage 2	-	-	-	-	-	-	695	655	-	677	692	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.6			12.1			14.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	573	1225	-	-	1307	-	-	430
HCM Lane V/C Ratio	0.111	0.002	-	-	0.015	-	-	0.089
HCM Control Delay (s)	12.1	7.9	0	-	7.8	0	-	14.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.3

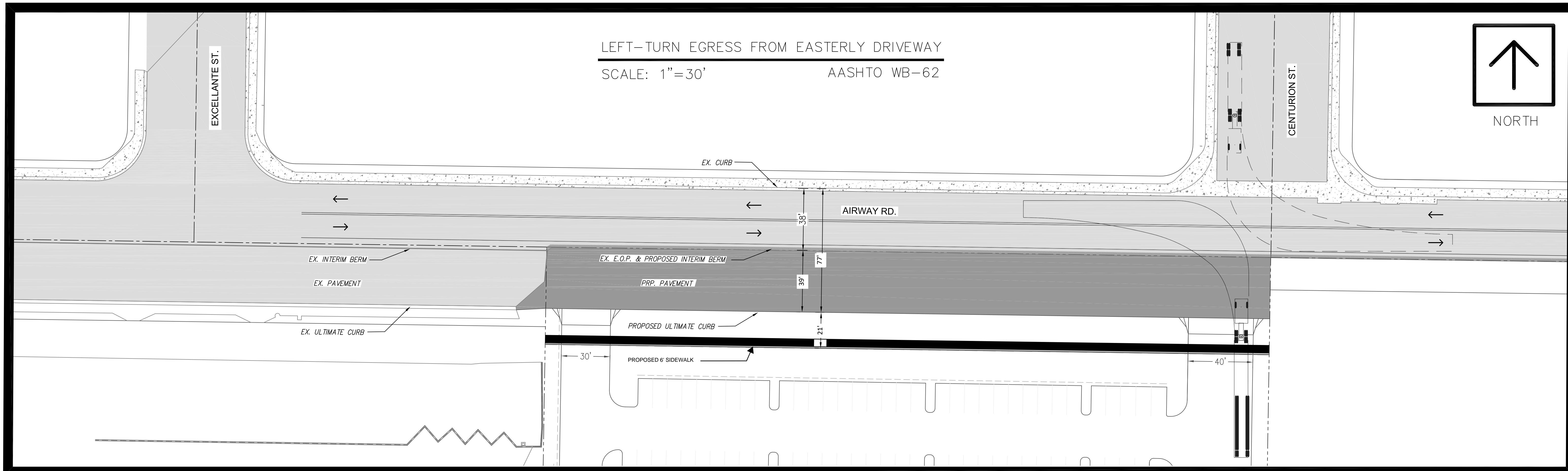
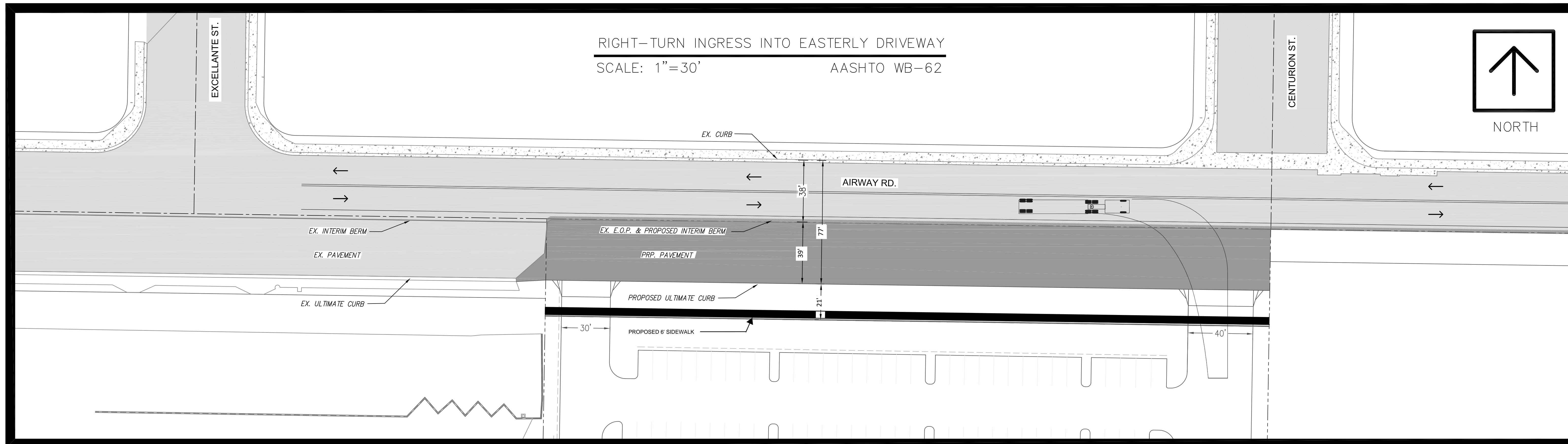
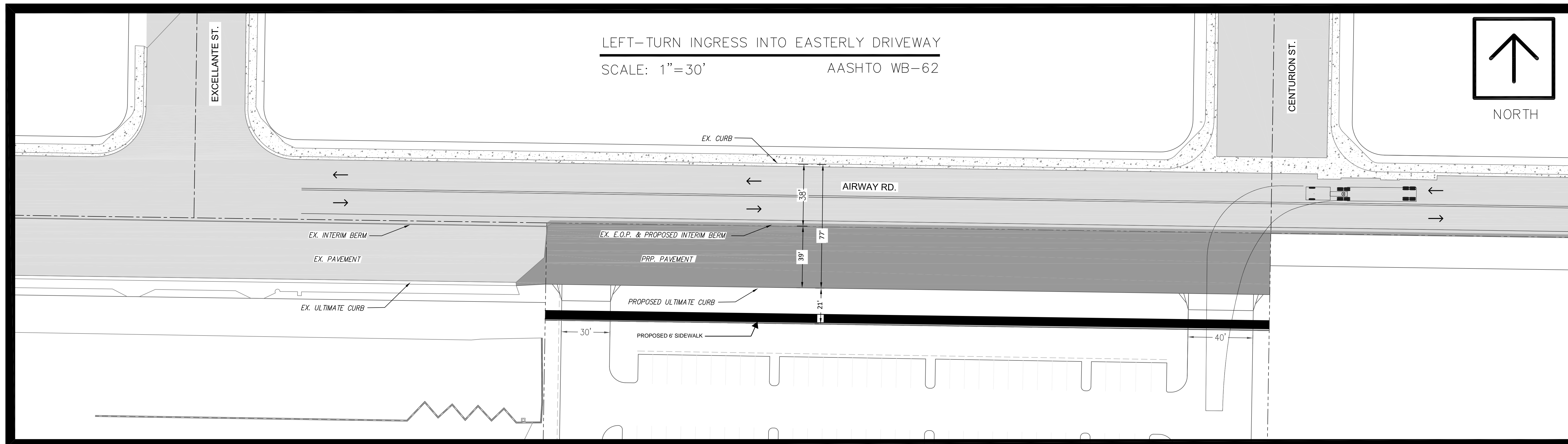
Intersection	
Intersection Delay, s/veh	33.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔↔	
Traffic Vol, veh/h	186	82	0	0	84	425	0	0	0	254	240	160
Future Vol, veh/h	186	82	0	0	84	425	0	0	0	254	240	160
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	16	16	16	16	16	16	16	16	16	16	16	16
Mvmt Flow	198	87	0	0	89	452	0	0	0	270	255	170
Number of Lanes	0	1	0	0	1	0	0	0	0	0	2	0

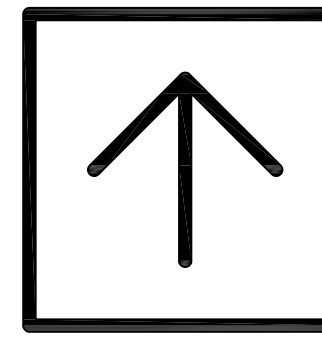
Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	19.5	44.9	30.3
HCM LOS	C	E	D

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	69%	0%	68%	0%
Vol Thru, %	31%	17%	32%	43%
Vol Right, %	0%	83%	0%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	268	509	374	280
LT Vol	186	0	254	0
Through Vol	82	84	120	120
RT Vol	0	425	0	160
Lane Flow Rate	285	541	398	298
Geometry Grp	2	2	7	7
Degree of Util (X)	0.57	0.92	0.84	0.567
Departure Headway (Hd)	7.195	6.114	7.603	6.847
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	499	590	473	524
Service Time	5.291	4.194	5.391	4.635
HCM Lane V/C Ratio	0.571	0.917	0.841	0.569
HCM Control Delay	19.5	44.9	39.2	18.3
HCM Lane LOS	C	E	E	C
HCM 95th-tile Q	3.5	11.5	8.3	3.5

APPENDIX I
PROJECT DRIVEWAYS AND FRONTAGE IMPROVEMENT
DESIGN

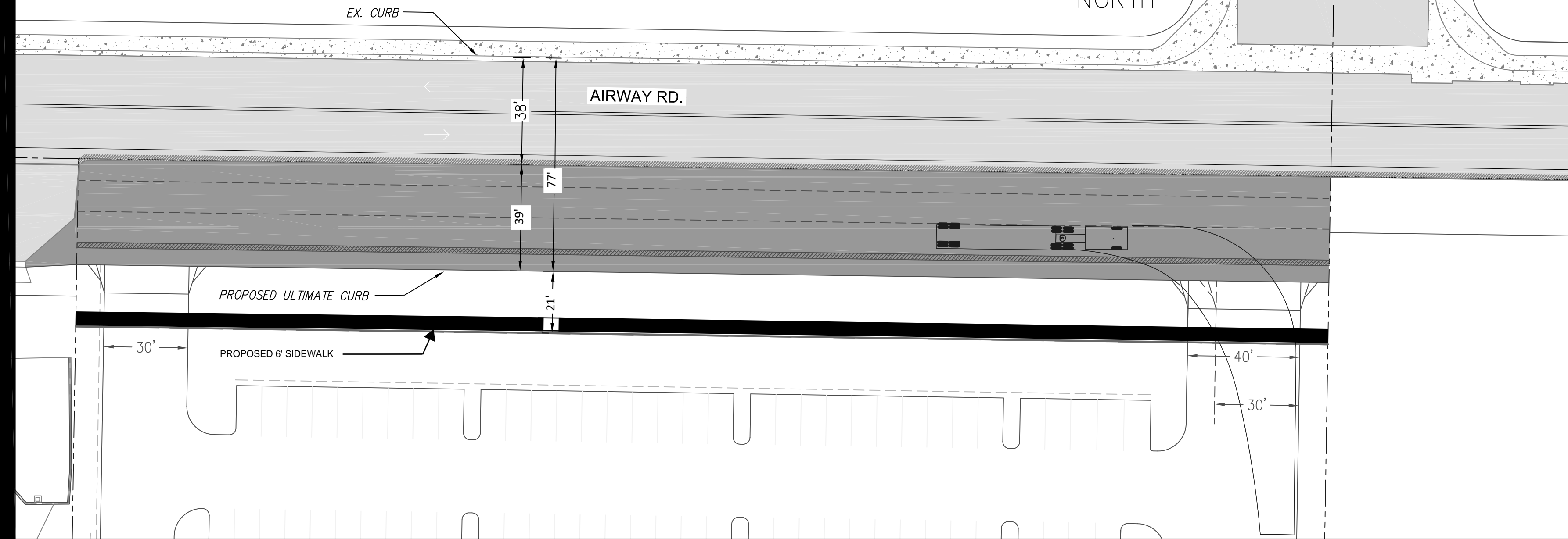


EASTERLY DRIVEWAY WIDTH DESIGN EXEMPTION TO A 40' DRIVEWAY
SCALE: 1"=30' AASHTO WB-62



NORTH

CENTURION ST.



APPENDIX J
CONCEPTUAL STRIPING PLAN

LA MEDIA ROAD NORTHBOUND WIDENING

