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TRAFFIC IMPACT ANALYSIS

SHARP CHULA VISTA MEDICAL CENTER
OCEAN VIEW TOWER

Chula Vista, California
March 22, 2016

LLG Ref. 3-15-2536

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TABLE OF CONTENTS

SECTION PAGE

APPENDICES

APPENDIX	
A.	Existing Intersection and Segment Manual Count Sheets
B.	Existing Peak Hour Intersection Analysis Worksheets
C.	Existing + Project Peak Hour Intersection Analysis Worksheets
D.	Excerpt from South Bay Bus Rapid Transit Final Environmental Impact Report, July 2013
E.	Near-Term Peak Hour Intersection Analysis Worksheets
F.	Near-Term + Project Peak Hour Intersection Analysis Worksheets
G.	I-805 Managed Lanes South Project: Traffic Section
H.	Long-Term with Project Intersection Analysis Worksheets
I.	HCM 2010 Excerpt – Passenger Car Equivalents
J.	Near-Term + Construction Peak Hour Intersection Analysis Worksheets
K.	AVRP Studio's Parking Study
L.	Conceptual Mitigation Figure

LIST OF FIGURES

LIST OF TABLES

TRAFFIC IMPACT ANALYSIS

SHARP CHULA VISTA MEDICAL CENTER
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1.0 INTRODUCTION

The following traffic study has been prepared to determine and evaluate the traffic impacts on the local circulation system due to the proposed Sharp Chula Vista Medical Center Ocean View Tower project ("Project") in the City of Chula Vista. This traffic study analyzes intersections, street segments, ramp meters, and freeway mainlines in the Project vicinity to determine potential impacts related to the traffic generated by the proposed Project.

Included in this traffic study are the following:

- Project Description
- Existing Conditions Description
- Study Area, Analysis Approach & Methodology
- Significance Criteria
- Existing Conditions Analysis
- Trip Generation / Distribution / Assignment
- Existing + Project Conditions Analysis
- Near-Term Conditions Analysis
- Long-Term Analysis
- Construction Traffic Analysis
- Parking Assessment
- Significance of Impacts & Mitigation Measures

2.0 PROJECT DESCRIPTION

The Sharp Chula Vista Medical Center Ocean View Tower Project proposes the construction of a new 138-bed hospital tower on the existing Sharp Medical Center campus. The ultimate bed count may be reduced slightly. The Project is located east of Medical Center Court in the northern section of the Sharp Chula Vista Medical Center in the City of Chula Vista. Site access will be provided via the campus's five (5) current driveways on Medical Center Court, with primary access provided via the Hospital's Main Driveway, just north of Camino Tivoli. No new driveways on Medical Center Court are proposed as part of the Project.

Figure 2–1 shows the Project's Vicinity Map and ***Figure 2-2*** shows a more detailed Project Area Map. ***Figure 2–3*** shows the Project's site plan.

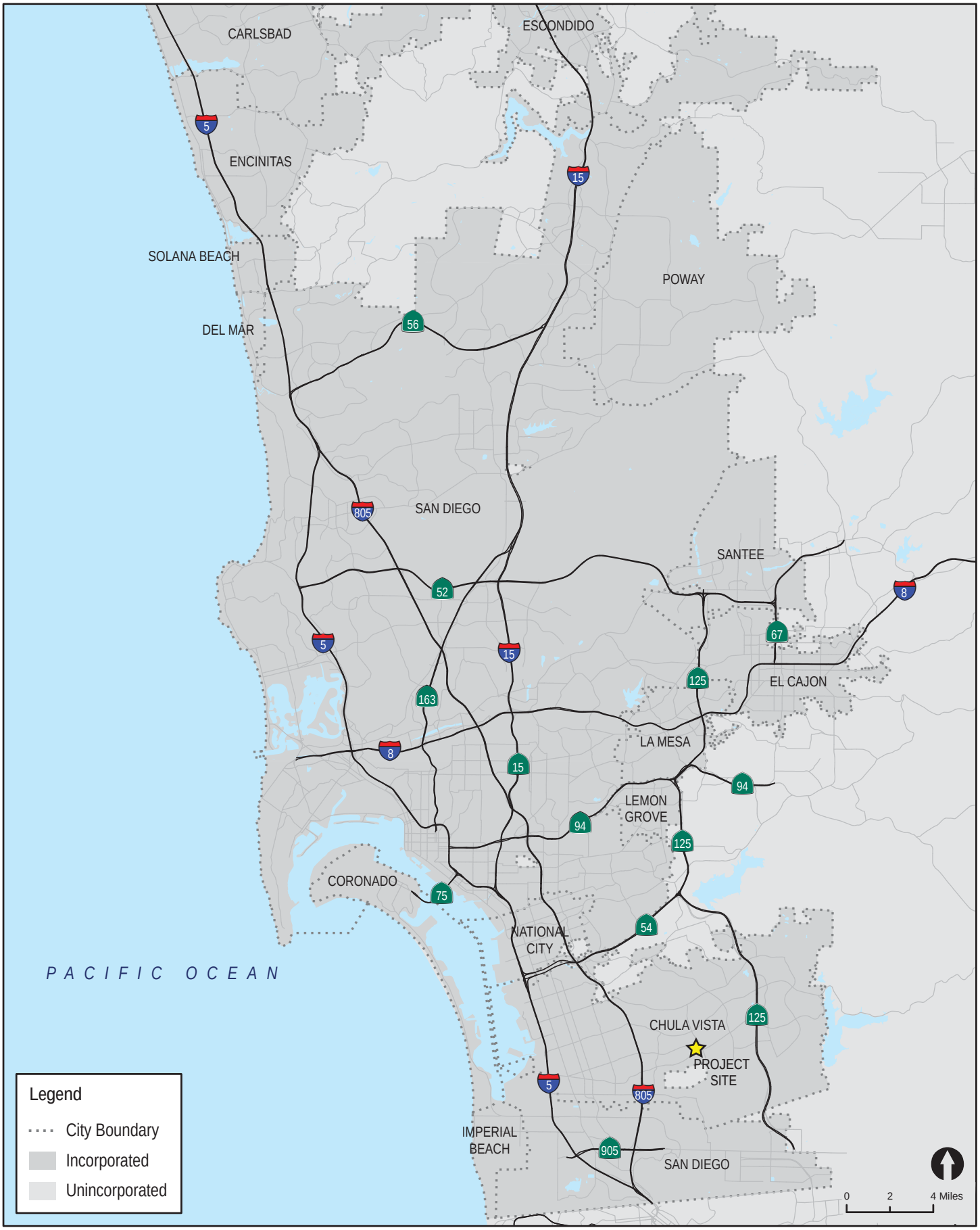

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Figure 2-1

Vicinity Map

SHARP CHULA VISTA TOWER

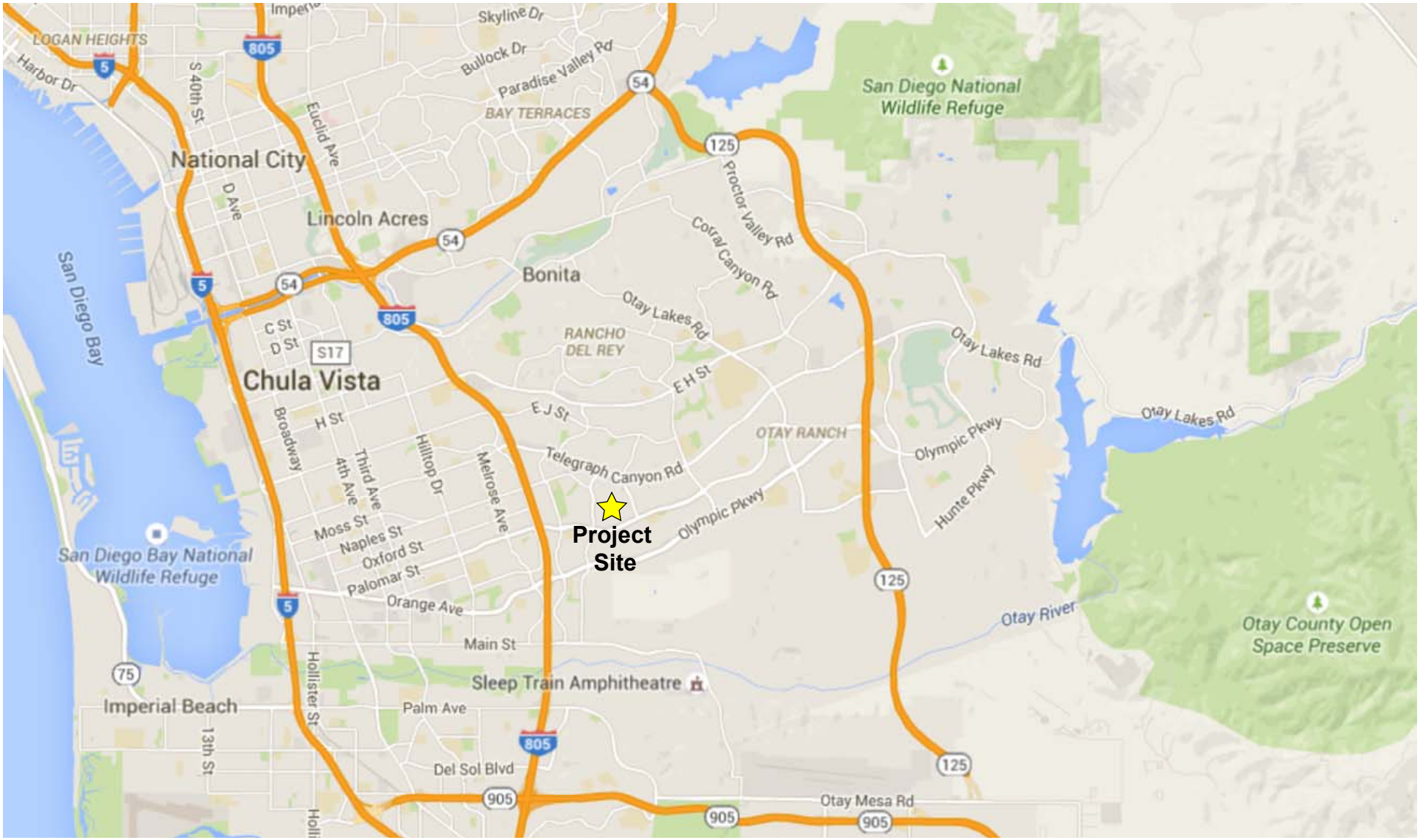

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Figure 2-2

Project Area Map

SHARP CHULA VISTA TOWER

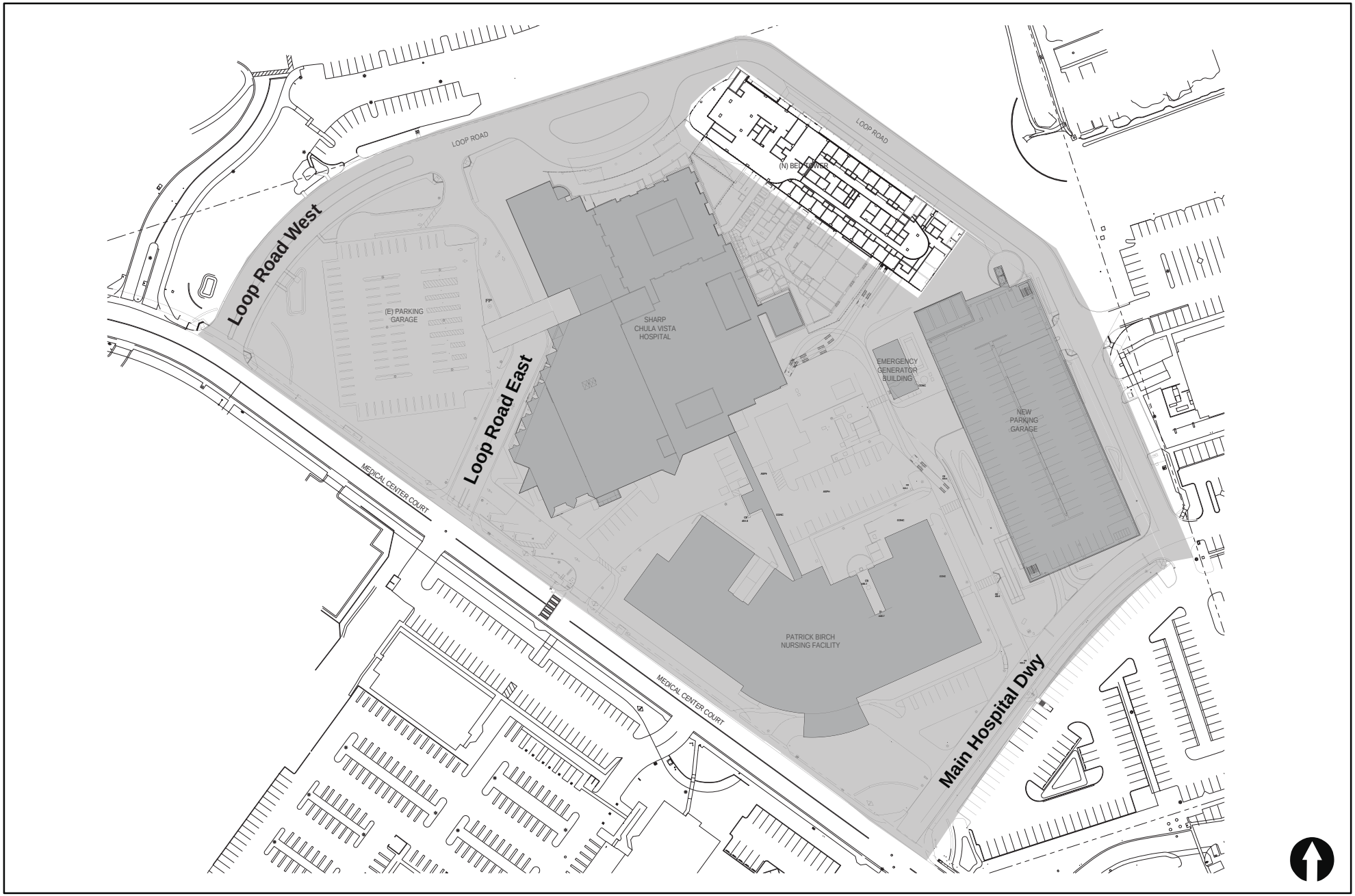

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Figure 2-3

Site Plan

SHARP CHULA VISTA TOWER

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The following are brief descriptions of the existing streets in the project area. ***Figure 3-1*** depicts the existing conditions within the study area.

Telegraph Canyon Road is classified as a six-lane Prime in the *City of Chula Vista General Plan*. Currently, Telegraph Canyon Road is constructed as a six-lane divided roadway. Bike lanes exist on both sides of the street and curbside parking is prohibited. The posted speed limit is 50 mph.

Medical Center Drive is classified as a four-lane Class I Collector in the *City of Chula Vista General Plan.* Currently, Medical Center Drive is constructed as a four-lane divided roadway. Bike lanes exist on both sides of the street and curbside parking is prohibited. The posted speed limit is 35 mph. Medical Center Drive becomes Brandywine Avenue south of E. Palomar Street.

Medical Center Court is an unclassified two-lane undivided roadway in the *City of Chula Vista General Plan*. Bus stops exist on both sides of the street and curbside parking is prohibited. The posted speed limit is 25 mph. Medical Center Court provides primary access to Sharp Medical Hospital.

E. Palomar Street is classified as a four-lane Major in the *City of Chula Vista General Plan.* Currently, E. Palomar Street is constructed as a four-lane divided roadway. On-street parking is prohibited. The posted speed limit is 35 mph and bike lanes are provided.

Olympic Parkway is classified as a 6-lane Prime Arterial in the *City of Chula Vista General Plan*. Olympic Parkway is currently constructed as a six-lane divided roadway with bike lanes on both sides of the roadway. Bus stops are not provided along the segment. The posted speed limit is 45 mph from Oleander Avenue to Brandywine Avenue and 50 mph east of Brandywine Avenue.

3.2 Existing Traffic Volumes

Existing weekday AM and PM peak hour (7:00-9:00 AM and 4:00-6:00 PM) turning movement counts at the study intersections and 24-hour average daily traffic (ADT) volumes along the study area street segment were conducted on Thursday, October 27th, 2015 while area schools in the area were in session. Counts at the Hospital driveway intersections were conducted on Tuesday, November 3rd and Thursday, November 12th, 2015.

It should be noted that the East Palomar Street overcrossing has been closed since the summer of 2014 due to the planned construction of the DAR access ramps to the I-805 and therefore, the existing baseline counts were done with the East Palomar Street overcrossing closed.

Table 3–1 provides a summary of the counted average daily traffic volumes (ADTs).

Freeway volumes were obtained from the Performance Measurement System (PeMS). The PeMS software distributes real-time peak hour and average daily traffic volumes and provides a graphical

representation of volumes at each PeMS station location. Peak hour freeway volumes were obtained from data collected during October 2015.

Figure 3–2 shows the Existing Traffic Volumes. ***Appendix A*** contains the manual count sheets.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT[a]	Source	Date
Telegraph Canyon Road			
Halecrest Drive to Oleander Avenue	60,784	LLG	Oct. 27, 2015
Oleander Avenue to Medical Center Drive	56,236	LLG	Oct. 27, 2015
Medical Center Drive to Heritage Road	45,001	LLG	Oct. 27, 2015
Medical Center Drive			
Telegraph Canyon Road to Medical Center Court	18,807	LLG	Oct. 27, 2015
Medical Center Court to E. Palomar Street	9,062	LLG	Oct. 27, 2015
Medical Center Court			
East of Medical Center Drive	9,829	LLG	Oct. 27, 2015
North of E. Palomar Street	4,171	LLG	Oct. 27, 2015
E. Palomar Street			
Oleander Avenue to Medical Center Drive	4,428	LLG	Oct. 27, 2015
Medical Center Drive to Medical Center Court	12,593	LLG	Oct. 27, 2015
Medical Center Court to Heritage Road	10,257	LLG	Oct. 27, 2015
Olympic Parkway			
I-805 Ramps to Oleander Avenue	55,710	LLG	Oct. 27, 2015
Oleander Avenue to Brandywine Avenue	53,460	LLG	Oct. 27, 2015
Brandywine Avenue to Heritage Road	52,125	LLG	Oct. 27, 2015

Footnotes:

a. Average Daily Traffic Volumes.

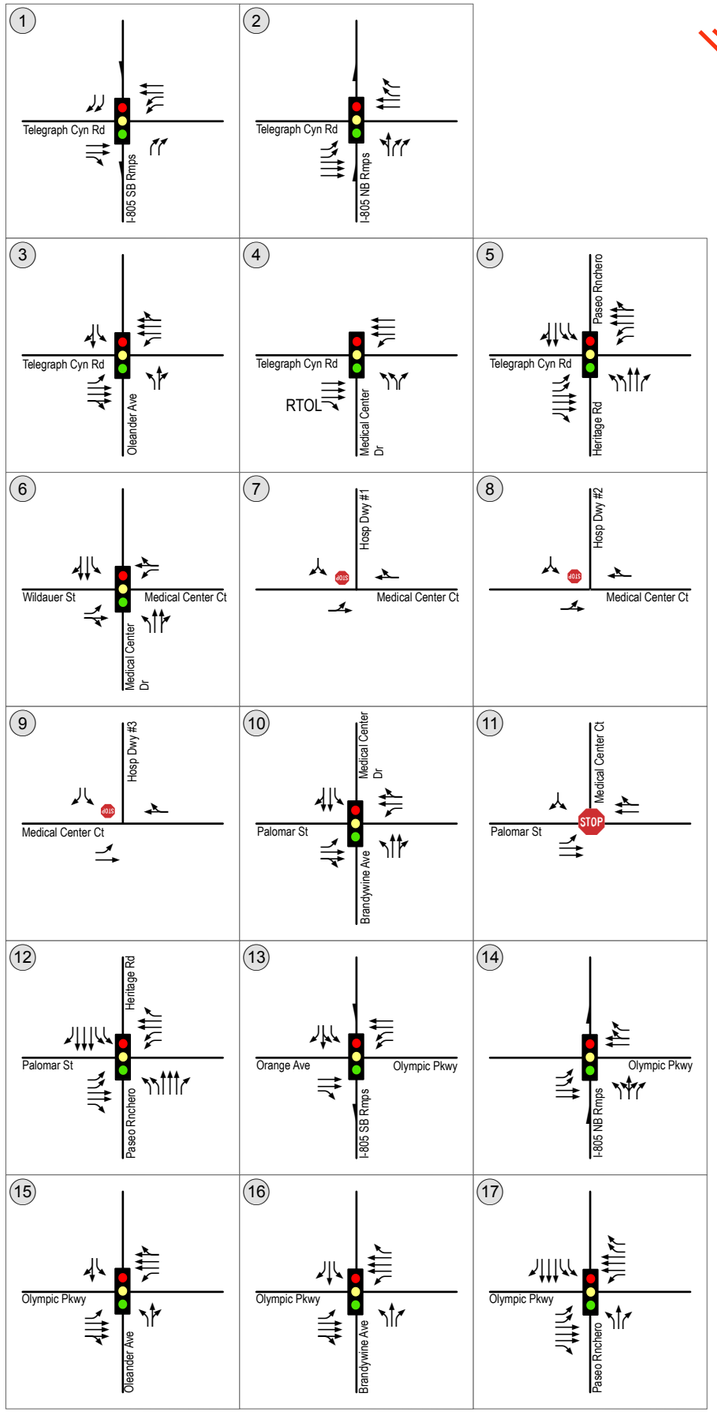

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Figure 3-1

Existing Conditions Diagram

SHARP CHULA VISTA TOWER

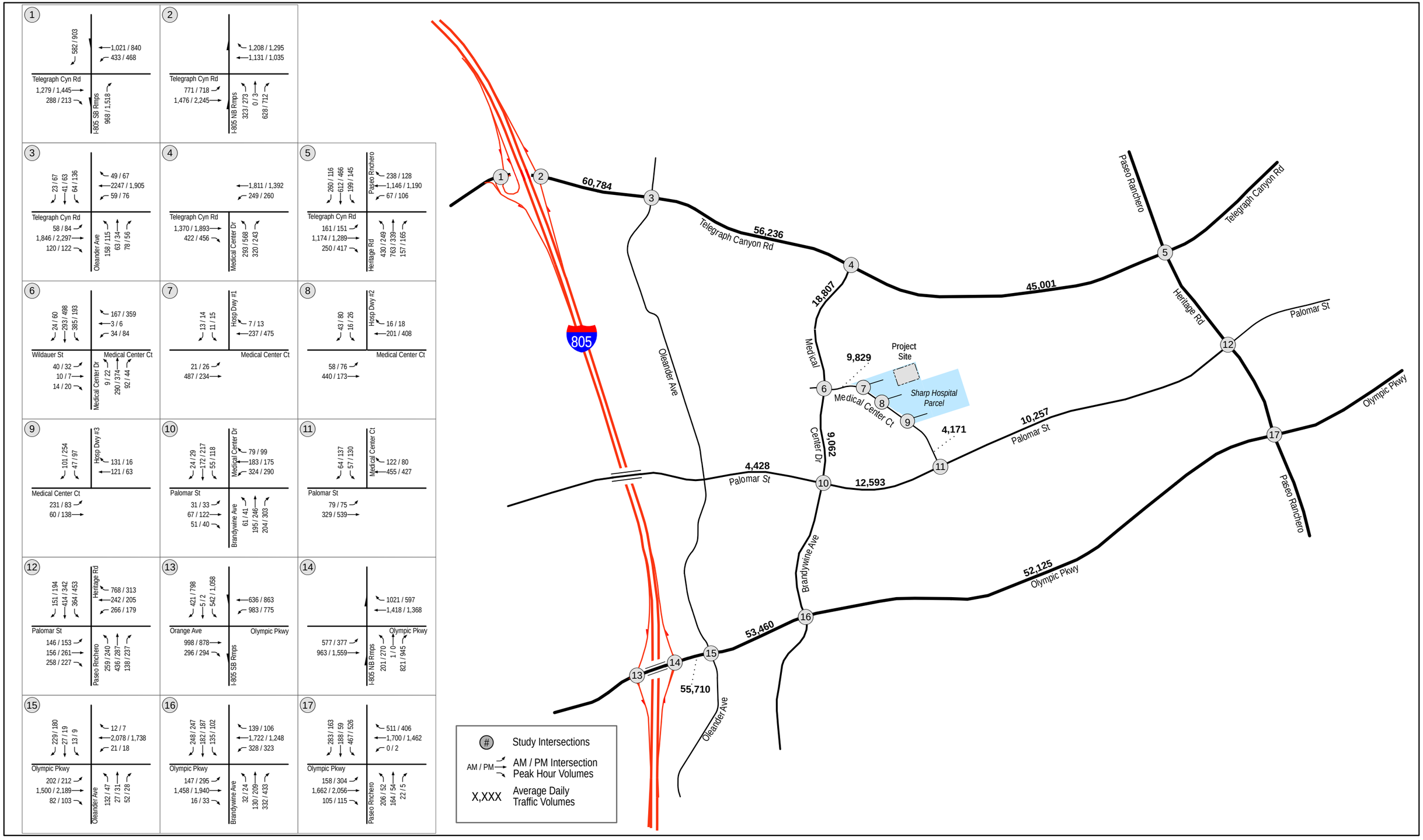

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Figure 3-2

Existing Traffic Volumes

SHARP CHULA VISTA TOWER

4.0 STUDY AREA, ANALYSIS APPROACH AND METHODOLOGY

4.1 Study Area

The study area was determined based on City of Chula Vista standards and the SANTEC/ITE Regional Guidelines for Traffic Impact Studies. In addition, the study area locations were selected based on the Project's trip distribution and are the most likely locations to be impacted by the Project. The Project study area includes the following locations:

INTERSECTIONS

1. Telegraph Canyon Road / I-805 Southbound Ramps
2. Telegraph Canyon Road / I-805 Northbound Ramps
3. Telegraph Canyon Road / Oleander Avenue
4. Telegraph Canyon Road / Medical Center Drive
5. Telegraph Canyon Road / Heritage Road
6. Medical Center Court / Medical Center Drive
7. Medical Center Court / Loop Road Access West
8. Medical Center Court / Loop Road Access East
9. Medical Center Court / Main Hospital Driveway
10. E. Palomar Street / Medical Center Drive
11. E. Palomar Street / Medical Center Court
12. E. Palomar Street / Heritage Road
13. Olympic Parkway / I-805 Southbound Ramps
14. Olympic Parkway / I-805 Northbound Ramps
15. Olympic Parkway / Oleander Avenue
16. Olympic Parkway / Brandywine Avenue
17. Olympic Parkway / Heritage Road

STREET SEGMENTS

Telegraph Canyon Road

Halecrest Drive to Oleander Avenue

Oleander Avenue to Medical Center Drive

Medical Center Drive to Heritage Road

Medical Center Drive

Telegraph Canyon Road to Medical Center Drive

Medical Center Drive to Medical Center Court

Medical Center Court to Heritage Road

Medical Center Court

East of Medical Center Drive

North of E. Palomar Street

E. Palomar Street

Oleander Avenue to Medical Center Drive

Medical Center Drive to Medical Center Court

Medical Center Court to Heritage Road

Olympic Parkway

I-805 Ramps to Oleander Avenue

Oleander Avenue to Brandywine Avenue

Brandywine Avenue to Heritage Road

FREEWAY RAMP METERS

- Telegraph Canyon Road / I-805 NB On-Ramp (AM peak hour only. Ramp meter is not used during the PM peak hour.)
- Olympic Parkway / I-805 NB On-Ramp (AM peak hour only. Ramp meter is not used during the PM peak hour.)

FREEWAY MAINLINE SEGMENTS

- I-805: North of Telegraph Canyon Road
- I-805: South of Olympic Parkway

4.2 Analysis Approach

This study analyzes the above mentioned intersections, street segments, ramp meters and freeway mainline segments in the Project area. The study area locations were analyzed under the following conditions to determine potential impacts to the road network:

- Existing
- Existing + Project
- Near-Term without Project
- Near-Term + Project
- Long-Term (with Project)

4.3 Analysis Methodology

There are various methodologies used to analyze signalized intersections, un-signalized intersections and street segments. The measure of effectiveness for intersection and segment operations is level of service which denotes the operating conditions which occur at a given intersection or 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. Levels of service designations range from A to F,

with LOS A representing the best operating conditions and LOS F representing the worst. Level of service designation is reported differently for signalized and un-signalized intersections, as well as for roadway segments.

In the 2010 Highway Capacity Manual (HCM), Level of Service for signalized intersections is defined in terms of delay. The level of service analysis results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. ***Table 4-1*** summarizes the signalized intersections levels of service descriptions.

4.3.1 *Signalized Intersections*

Table 4-2 depicts the criteria, which are based on the overall average control delay for a signalized intersection. The level of service criteria is 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.

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.

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

TABLE 4–1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	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.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	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 volume-to-capacity 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

TABLE 4–2
INTERSECTION LOS & DELAY RANGES

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	Un-signalized Intersections
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: 2010 Highway Capacity Manual

4.3.2 *Un-signalized Intersections*

Table 4-2 depicts the criteria, which are based on the average control delay for any particular minor movement at an un-signalized intersection. The 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.

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.

4.3.3 *Street Segments*

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Chula Vista'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 Chula Vista's *Roadway Classification, Level of Service and ADT* table is shown in ***Table 4–3.***

TABLE 4–3
CITY OF CHULA VISTA ROADWAY CAPACITY STANDARDS
AVERAGE DAILY VEHICLE TRIPS

Road		**Level of Service**				
Roadway Classification	**X-Section**	**A** **(V/C = 0.6)**	**B** **(V/C = 0.7)**	**C** **(V/C = 0.8)**	**D** **(V/C = 0.9)**	**E** **(V/C = 1.0)**
Expressway	104/128	52,000	61,300	70,000	78,800	87,500
Prime Arterial	104/128	37,500	43,800	50,000	56,300	62,500
Major Street (6 lanes)	104/128	30,000	35,000	40,000	45,000	50,000
Major Street (4 lanes)	80/104	22,500	26,300	30,000	33,800	37,500
Class I Collector	74/94	16,500	19,300	22,000	24,800	27,500
Class II Collector	52/72	9,000	10,500	12,000	13,500	15,000
Class III Collector	40/60	5,600	6,600	7,500	8,400	9,400

4.3.4 *Ramp Meters*

The method currently accepted by the City to calculate ramp delays and queues is a *fixed rate* approach. The fixed rate approach is based solely on the specific time intervals at which the ramp meter is programmed to release traffic.

The fixed rate approach, used in this report, generally tends to produce unrealistic queue lengths and delays. The results are theoretical and based on Caltrans' most restrictive ramp meter rate. Because ramp meter rates are not constant, even within the peak hours, the analysis was conducted using the most restrictive meter rates. The meter rates dynamically adjust based on the level of traffic on the freeway mainlines. The meter rates were obtained from Caltrans. Furthermore, the fixed rate approach does not take into account driver behavior such as "ramp shopping" or trip diversion.

4.3.5 *Freeway Segments*

Freeway segments were analyzed during the AM and PM peak hours based on the methodologies as outlined in the SANTEC/ITE Guidelines developed by Caltrans. The freeway segments LOS is based on a Volume to Capacity (V/C) method. Page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies,* December 2002 documents a maximum service flow rate of 2,350 passenger cars per hour per lane. However, a service flow rate of 2,000 was used for this analysis for mainline lanes and 1,200 for Auxiliary and HOV lanes. The freeway LOS thresholds are summarized in ***Table 4–4.***

TABLE 4–4
FREEWAY SEGMENT LEVELS OF SERVICE

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1.00
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

Footnotes:
LOS = Level of Service
V/C = Volume/Capacity
Source: SANTEC/ITE Guidelines, March 2000 (based on Caltrans)

5.0 SIGNIFICANCE CRITERIA

Traffic impacts will be defined as either project specific direct impacts or cumulative impacts. Project specific impacts are those impacts for which the addition of project trips result in an identifiable degradation in level of service on freeway segments, roadway segments, or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those in which the project trips contribute to a poor level of service, at a nominal level.

Criteria for determining whether the project results in either project specific or cumulative impacts on freeway segments, roadway segments, or intersections are as follows:

Roadway sections may be defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program. Analysis of roadway links under short-term conditions may require a more detailed analysis using the Growth Management Oversight Committee (GMOC) methodology if the typical planning analysis using volume to capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program. The project is unlikely to be built within the next 4 years and hence the GMOC analysis was not done.

SHORT TERM (STUDY HORIZON YEAR 0 TO 4)

INTERSECTIONS

a. Project specific impact if both the following criteria are met:
    i. Level of service is LOS E or LOS F.
    ii. Project trips comprise 5% or more of entering volume.
b. Cumulative impact if only (i) is met.

STREET LINKS/SEGMENTS

If the planning analysis using the volume to capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E or F, the GMOC method should be utilized. The following criteria would then be utilized.

a. Project specific impact if all the following criteria are met:
    i. Level of service is LOS D for more than 2 hours or LOS E/F for 1 hour
    ii. Project trips comprise 5% or more of segment volume
    iii. Project adds greater than 800 ADT to the segment
b. Cumulative impact if only (i) is met.

FREEWAYS

a. Project specific impact if all the following criteria are met:
    i. Freeway segment LOS is LOS E or LOS F
    ii. Project comprises 5% or more of the total forecasted ADT on that freeway segment.

b. Cumulative impact if only (i) is met.

LONG TERM (STUDY HORIZON YEAR 5 AND LATER)

INTERSECTIONS

a. Project specific impact if both the following criteria are met:
   i. Level of service is LOS E or LOS F.
   ii. Project trips comprise 5% or more of entering volume.
b. Cumulative impact if only (i) is met.

STREET LINKS/SEGMENTS

Use the planning analysis using the volume to capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a four-year horizon.

a. Project specific impact if all the following criteria are met:
   i. Level of service is LOS D for more than 2 hours or LOS E/F for 1 hour
   ii. Project trips comprise 5% or more of segment volume
   iii. Project adds greater than 800 ADT to the segment
b. Cumulative impact if only (i) above is met. However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.
c. Notwithstanding the foregoing, if the impact identified in paragraph a. above occurs at study horizon year 10 or later, and is offsite and not adjacent to the project, the impact is considered cumulative. Study year 10 may be that typical SANDAG model year which is between 8 and 13 years in the future. In this case of a traffic study being performed in the period of 2000 to 2002, because the typical model will only evaluate traffic at years divisible by 5 (i.e. 2005, 2010, 2015 and 2020) study horizon year 10 would correspond to the Sandag model for year 2010 and would be 8 years in the future. If the model year is less than 7 years in the future, study horizon year 10 would be 13 years in the future.
d. In the event a direct identified project specific impact in paragraph a. above occurs at study horizon year 5 or earlier and the impact is offsite and not adjacent to his project, but the property immediately adjacent to the identified project specific impact is also proposed to be developed in approximately the same time frame , an additional analysis may be required to determine whether or not the identified project specific impact would still occur if the development of the adjacent property does not take place. If the additional analysis concludes that the identified project specific impact is no longer a direct impact, then the impact shall be considered cumulative.

FREEWAYS

a. Project specific impact if all the following criteria are met:
   iii. Freeway segment LOS is LOS E or LOS F
   iv. Project comprises 5% or more of the total forecasted ADT on that freeway segment.
b. Cumulative impact if only (i) is met.

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 Peak Hour Intersection Analysis

Table 6–1 summarizes the peak hour intersection operations under Existing conditions in the study area. As shown, the study area intersections are calculated to currently operate acceptably at LOS D or better during the AM and PM peak hours, with the exception of the following:

- E. Palomar Street / Heritage Road (LOS F during the AM peak hour)
- Olympic Parkway / I-805 SB Ramps (LOS E during the AM and PM peak hours)
- Olympic Parkway / I-805 NB Ramps (LOS E during the AM peak hour)

Appendix B contains the Existing intersection analysis worksheets.

6.2 Daily Street Segment Operations

Table 6–2 summarizes the Existing street segment operations along the key study area roadways. As shown, the study area street segments are calculated to currently operate acceptably at LOS C or better, with the exception of the following:

- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive (LOS D)
- Olympic Parkway: I-805 Ramps to Oleander Avenue (LOS D)
- Olympic Parkway: Oleander Avenue to Brandywine Avenue (LOS D)
- Olympic Parkway: Brandywine Avenue to Heritage Road (LOS D)

6.3 Ramp Meter Operations

Table 6–3 summarizes the Existing AM peak hour ramp meter operations at the Telegraph Canyon Road / I-805 NB On-Ramp and the Olympic Parkway / I-805 NB On-Ramp. As shown, the ramp meters are calculated to operate acceptably during the AM peak hour. The ramp meters are not used during the PM peak hour, and therefore, PM peak hour analysis was not conducted for the study area ramp meters.

6.4 Freeway Mainline Operations

Table 6–4 summarizes the Existing freeway mainline operations. As shown, the study area freeway mainline segments are calculated to operate at acceptable levels of service during the AM and PM peak hours.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
1. Telegraph Canyon Road / I- 805 SB Ramps	Signal	AM	11.9	B
		PM	29.0	C
2. Telegraph Canyon Road / I-805 NB Ramps	Signal	AM	34.5	C
		PM	46.0	D
3. Telegraph Canyon Road / Oleander Avenue	Signal	AM	23.1	C
		PM	23.9	C
4. Telegraph Canyon Road / Medical Center Drive	Signal	AM	25.7	C
		PM	31.0	C
5. Telegraph Canyon Road / Heritage Road	Signal	AM	47.6	D
		PM	42.5	D
6. Medical Center Court / Medical Center Drive	Signal	AM	20.0	C
		PM	21.4	C
7. Medical Center Court / Loop Road Access West	OWSC [c]	AM	13.5	B
		PM	15.2	C
8. Medical Center Court / Loop Road Access East	OWSC	AM	12.8	B
		PM	14.5	B
9. Medical Center Court / Main Hospital Driveway	OWSC	AM	13.8	B
		PM	10.9	B
10. E. Palomar Street / Medical Center Drive	Signal	AM	30.7	C
		PM	41.9	D
11. E. Palomar Street / Medical Center Court	AWSC [d]	AM	12.6	B
		PM	15.3	C
12. E. Palomar Street / Heritage Road	Signal	AM	**81.8**	**F**
		PM	46.4	D
13. Olympic Parkway / I-805 SB Ramps	Signal	AM	**57.8**	**E**
		PM	**65.7**	**E**
14. Olympic Parkway / I-805 NB Ramps	Signal	AM	**79.3**	**E**
		PM	43.6	D

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
15. Olympic Parkway / Oleander Avenue	Signal	AM	44.5	D
		PM	38.9	D
16. Olympic Parkway / Brandywine Avenue	Signal	AM	34.6	C
		PM	51.5	D
17. Olympic Parkway / Heritage Road	Signal	AM	44.9	D
		PM	51.7	D

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC – One Way Stop Controlled intersection. Minor street left-turn delay reported.
d. AWSC – All Way Stop Controlled intersection.

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	Functional Classification	Capacity (LOS C) [a]	Existing	
			ADT[b]	LOS[c]
Telegraph Canyon Road				
Halecrest Drive to Oleander Avenue	7-Lane Expressway	61,250	60,784	C
Oleander Avenue to Medical Center Drive	6-Lane Prime	50,000	**56,236**	**D**
Medical Center Drive to Heritage Road	6-Lane Prime	50,000	45,001	C
Medical Center Drive				
Telegraph Canyon Road to Medical Center Court	Class I Collector	22,000	18,807	B
Medical Center Court to E. Palomar Street	Class I Collector	22,000	9,062	A
Medical Center Court				
East of Medical Center Drive	Class II Collector	12,000	9,829	B
North of E. Palomar Street	Class II Collector	12,000	4,171	A
E. Palomar Street				
Oleander Avenue to Medical Center Drive	4-Lane Major Road	30,000	4,428	A
Medical Center Drive to Medical Center Court	4-Lane Major Road	30,000	12,593	A
Medical Center Court to Heritage Road	4-Lane Major Road	30,000	10,257	A
Olympic Parkway				
I-805 Ramps to Oleander Avenue	6-Lane Prime	50,000	**55,710**	**D**
Oleander Avenue to Brandywine Avenue	6-Lane Prime	50,000	**53,460**	**D**
Brandywine Avenue to Heritage Road	6-Lane Prime	50,000	**52,125**	**D**

Footnotes:
a. Capacities based on City of Chula Vista Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.

TABLE 6–3
EXISTING RAMP METER OPERATIONS

Location/Condition	Peak Hour	Peak Hour Flow F [a]	Discharge Rate R [a]	Excess Demand E [a]	Delay [b]	Queue [c]
Telegraph Canyon Road to NB I-805 – 2 SOV + 1 HOV						
Existing	AM	841 [d]	828	13	1	327
Olympic Parkway to NB I-805 – 2 SOV + 1 HOV						
Existing	AM	680 [d]	778	0	0	0

Footnotes:

a. Vehicles per hour per lane.

b. Calculated delay in minutes per lane

c. Calculated queue length in feet per lane

d. 15% Reduction in volume due to HOV lane

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle

TABLE 6–4
EXISTING FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	Hourly Capacity [b]	ADT [c]	Peak Hour Volume		V/C [d]		LOS [e]	
					AM	PM	AM	PM	AM	PM
Interstate 805										
North of Telegraph Canyon Road	NB	4 / 1 / 1	10,400	198,300	5,673	5,559	0.545	0.535	B	B
	SB	4 / 1 / 1	10,400		5,609	7,796	0.539	0.750	B	C
Interstate 805										
South of Olympic Parkway	NB	4 / 1 / 0	9,200	136,100	4,160	4,719	0.452	0.513	B	B
	SB	4 / 1 / 0	9,200		3,924	5,157	0.427	0.561	B	B

Footnotes:

a. Number of mainline lanes / number of auxiliary lanes / number of HOV lanes.
b. Capacity calculated at 2000 vph per lane, 1200 vph per Auxiliary lane and 1200 vph per HOV Lane.
c. Existing ADT Volumes were obtained directly from the freeway Performance Measurement System (PeMS) website.
d. Volume to Capacity ratio.
e. Level of Service.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

As described in *Section 2* of this study, the Project proposes to construct a 138-bed hospital tower on the existing Sharp Medical Center campus. The ultimate bed count may be reduced slightly. Trip generation rates for the Project were obtained from the *(Not So) Brief Guide of Traffic Generators for the San Diego Region* published by the San Diego Association of Governments (SANDAG) in April 2002.

Table 7–1 summarizes the trip generation for the Project. As shown in *Table 7–1*, the Project is calculated to generate 2,760 ADT with a total of 221 trips during the AM peak hour (155 inbound/66 outbound trips) and 276 trips during PM peak hour (110 inbound/ 166 outbound trips).

7.1 Trip Distribution and Assignment

A Select Zone Assignment (SZA) plot was obtained from SANDAG to determine the local and regional distribution of the Project traffic. The Project's distribution was also informed by the locations of the proposed access points and traffic patterns observed from the existing traffic counts.

Figure 7–1 shows the regional and local distribution of the Project trips. ***Figure 7–2*** shows the total Project traffic volumes. ***Figure 7-3*** shows the Existing + Project traffic volumes.

TABLE 7–1
PROJECT TRIP GENERATION

Use	Quantity	Daily Trip Ends (ADTS)[a]		AM Peak Hour				PM Peak Hour			
		Rate [b]	Volume	% of ADT	In:Out Split	Volume		% of ADT	In:Out Split	Volume	
						In	Out			In	Out
Hospital	138 Beds	20 / Bed	2,760	8%	70:30	155	66	10%	40:60	110	166

Footnotes:

a. Average Daily Trips

b. Trip Generation Rate from the SANDAG's *Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* 2002.

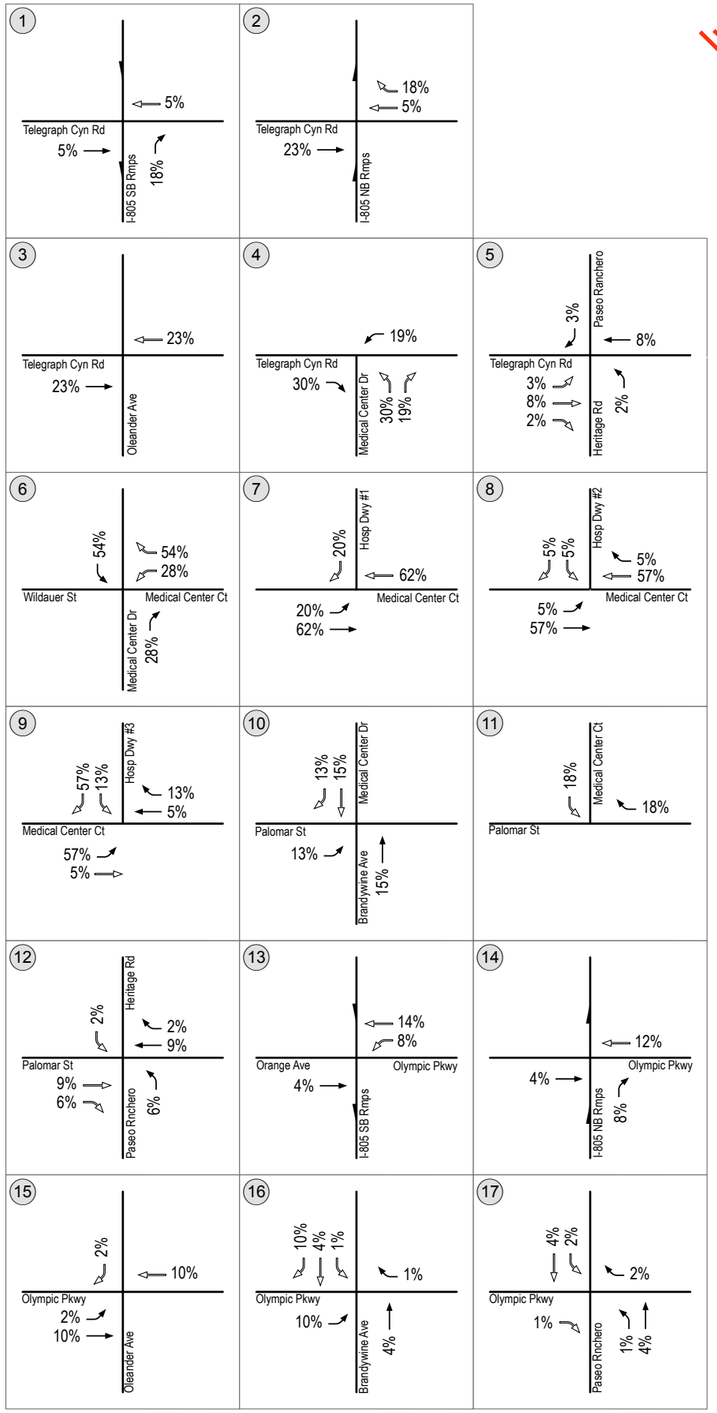

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Figure 7-1

Project Traffic Distribution

SHARP CHULA VISTA TOWER

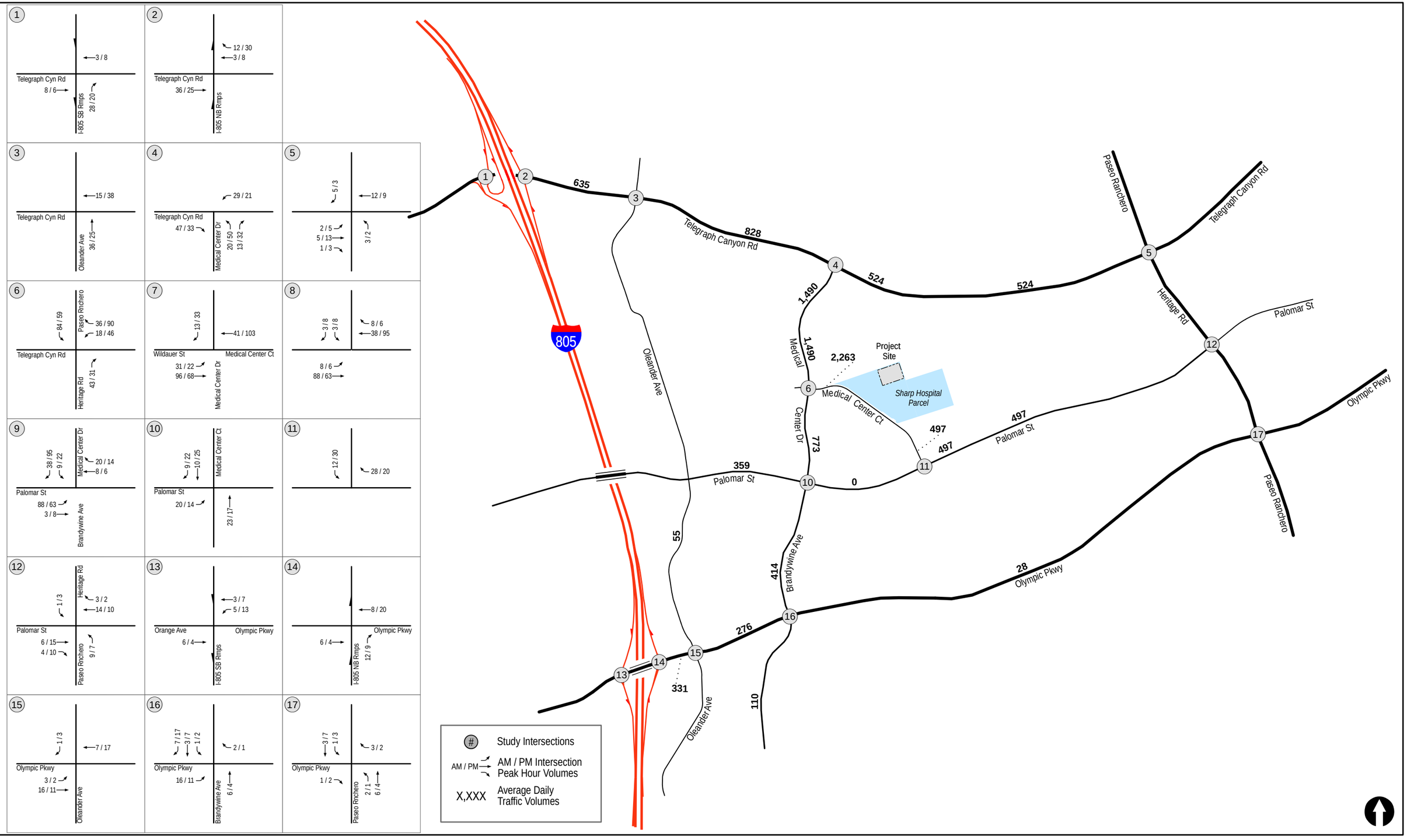

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Figure 7-2

Project Traffic Volumes

Sharp Chula Vista Tower

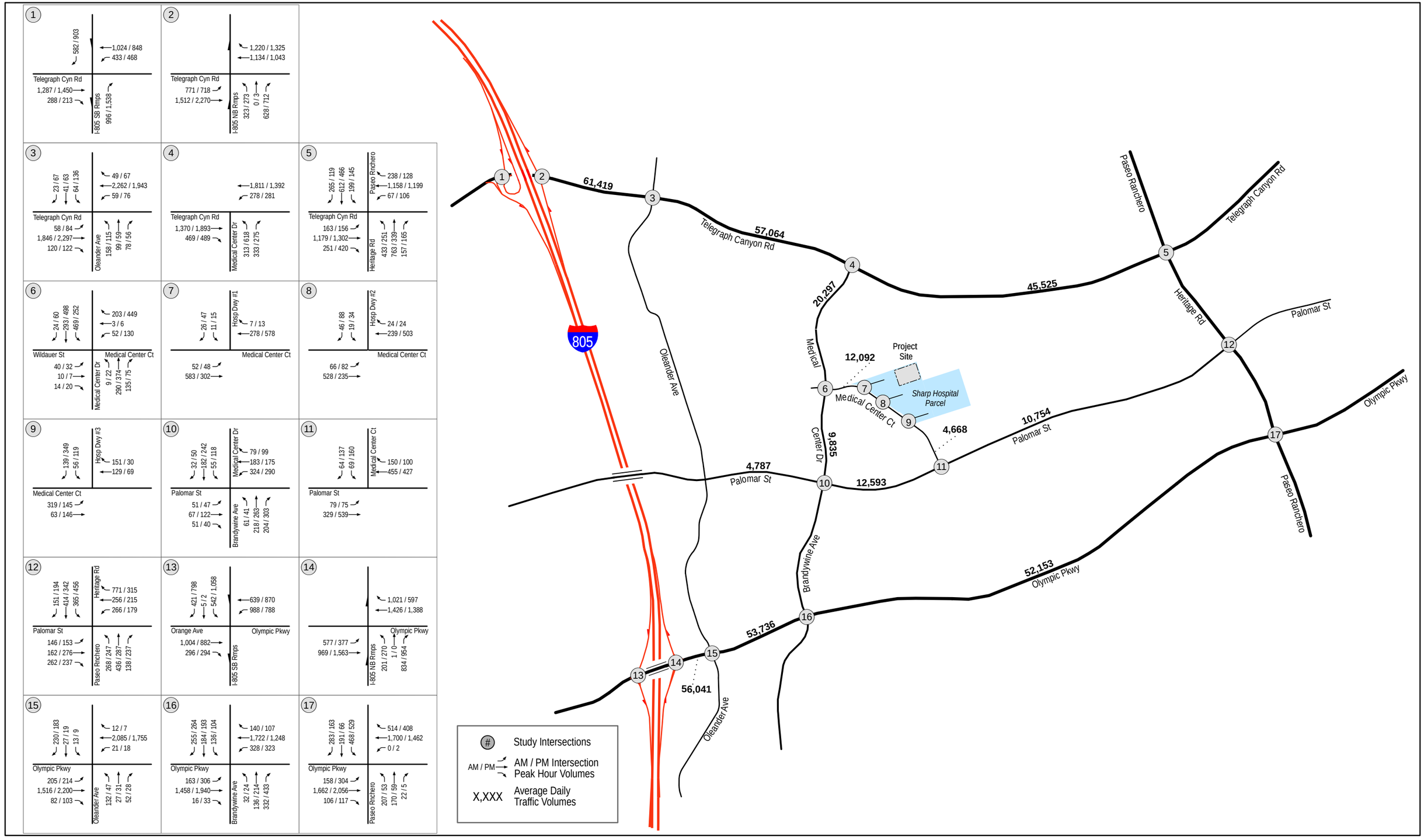

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Figure 7-3

Existing + Project Traffic Volumes

SHARP CHULA VISTA TOWER

8.0 ANALYSIS OF EXISTING + PROJECT CONDITIONS

8.1 Peak Hour Intersection Analysis

Table 8–1 summarizes the peak hour intersection operations under Existing + Project conditions in the study area. As shown, with the addition of Project traffic, the study area intersections are calculated to continue to operate acceptably at LOS D or better during the AM and PM peak hours, with the exception of the following:

- E. Palomar Street / Heritage Road (LOS F during the AM peak hour)
- Olympic Parkway / I-805 SB Ramps (LOS E during the AM and PM peak hours)
- Olympic Parkway / I-805 NB Ramps (LOS F during the AM peak hour)

Based on the City of Chula Vista's significance criteria, ***significant cumulative impacts*** are calculated at the three (3) intersections listed above.

Appendix C contains the Existing + Project intersection analysis worksheets.

8.2 Daily Street Segment Operations

Table 8–2 summarizes the Existing + Project street segment operations along the key study area roadways. As shown, with the addition of Project traffic, the study area street segments are calculated to continue to operate acceptably at LOS C or better, with the exception of the following:

- Telegraph Canyon Road: Halecrest Drive to Oleander Avenue (LOS D)
- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive (LOS E)
- Medical Center Court: East of Medical Center Drive (LOS D)
- Olympic Parkway: I-805 Ramps to Oleander Avenue (LOS D)
- Olympic Parkway: Oleander Avenue to Brandywine Avenue (LOS D)
- Olympic Parkway: Brandywine Avenue to Heritage Road (LOS D)

Based on the City of Chula Vista's significance criteria, a ***significant project specific direct impact*** is calculated along the following segment:

- Medical Center Court: East of Medical Center Drive

Based on the City of Chula Vista's significance criteria, ***significant cumulative impacts*** are calculated along the following segments:

- Telegraph Canyon Road: Halecrest Drive to Oleander Avenue
- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive
- Olympic Parkway: I-805 Ramps to Oleander Avenue
- Olympic Parkway: Oleander Avenue to Brandywine Avenue
- Olympic Parkway: Brandywine Avenue to Heritage Road

8.3 Ramp Meter Operations

Table 8–3 summarizes the Existing + Project AM peak hour ramp meter operations at the Telegraph Canyon Road / I-805 NB On-Ramp and the Olympic Parkway / I-805 NB On-Ramp. As shown, with the addition of Project traffic, the ramp meters are calculated to continue to operate acceptably during the AM peak hour. The ramp meters are not used during the PM peak hour, and therefore, PM peak hour analysis was not conducted for the study area ramp meters.

8.4 Freeway Mainline Operations

Table 8–4 summarizes the Existing + Project freeway mainline operations. As shown, with the addition of Project traffic, the study area freeway mainline segments are calculated to continue to operate at acceptable levels of service during the AM and PM peak hours.

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Project % of Entering Volume (>5%)	Impact Type
			Delay[a]	LOS[b]	Delay	LOS		
1. Telegraph Canyon Road / I-805 SB Ramps	Signal	AM	11.9	B	11.9	B	1%	None
		PM	29.0	C	29.4	C	1%	
2. Telegraph Canyon Road / I-805 NB Ramps	Signal	AM	34.5	C	34.7	C	1%	None
		PM	46.0	D	48.4	D	1%	
3. Telegraph Canyon Road / Oleander Avenue	Signal	AM	23.1	C	23.4	C	1%	None
		PM	23.9	C	24.2	C	1%	
4. Telegraph Canyon Road / Medical Center Drive	Signal	AM	25.7	C	27.2	C	2%	None
		PM	31.0	C	33.6	C	3%	
5. Telegraph Canyon Road / Heritage Road	Signal	AM	47.6	D	48.1	D	1%	None
		PM	42.5	D	42.7	D	1%	
6. Medical Center Court / Medical Center Drive	Signal	AM	20.0	C	25.3	C	12%	None
		PM	21.4	C	35.8	D	12%	
7. Medical Center Court / Loop Road Access West	OWSC[c]	AM	13.5	B	14.6	B	19%	None
		PM	15.2	C	17.5	C	23%	
8. Medical Center Court / Loop Road Access East	OWSC	AM	12.8	B	14.9	B	16%	None
		PM	14.5	B	18.6	C	19%	
9. Medical Center Court / Main Hospital Dwy	OWSC	AM	13.8	B	18.2	C	19%	None
		PM	10.9	B	12.7	B	24%	
10. E Palomar Street / Medical Center Drive	Signal	AM	30.7	C	31.3	C	4%	None
		PM	41.9	D	42.0	D	4%	
11. E Palomar Street / Medical Center Court	AWSC[d]	AM	12.6	B	13.2	B	3%	None
		PM	15.3	C	16.8	C	3%	
12. E Palomar Street / Heritage Road	Signal	AM	**81.8**	**F**	**82.1**	**F**	1%	**Cuml**
		PM	46.4	D	46.6	D	1%	
13. Olympic Parkway / I-805 SB Ramps	Signal	AM	**57.8**	**E**	**57.8**	**E**	0%	**Cuml**
		PM	**65.7**	**E**	**67.0**	**E**	1%	

TABLE 8–1
EXISTING + PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Project % of Entering Volume (>5%)	Impact Type
			Delay[a]	LOS[b]	Delay	LOS		
14. Olympic Parkway / I-805 NB Ramps	Signal	AM	**79.3**	**E**	**81.5**	**F**	1%	**Cuml**
		PM	43.6	D	44.4	D	1%	
15. Olympic Parkway / Oleander Avenue	Signal	AM	44.5	D	50.8	D	1%	None
		PM	38.9	D	39.1	D	1%	
16. Olympic Parkway / Brandywine Avenue	Signal	AM	34.6	C	35.1	D	1%	None
		PM	51.5	D	51.8	D	1%	
17. Olympic Parkway / Heritage Road	Signal	AM	44.9	D	45.2	D	0%	None
		PM	51.7	D	52.0	D	0%	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC – One Way Stop Controlled intersection. Minor street left-turn delay reported.
d. AWSC – All Way Stop Controlled intersection.

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	Capacity (LOS C) [a]	Existing		Existing + Project		Significance Criteria		Impact Type
		ADT[b]	LOS[c]	ADT	LOS	Project ADT > 800	Project Contribution > 5%	
Telegraph Canyon Road								
Halecrest Drive to Oleander Avenue	61,250	60,784	C	**61,419**	**D**	635	1%	**Cuml**
Oleander Avenue to Medical Center Drive	50,000	**56,236**	**D**	**57,064**	**E**	**828**	1%	**Cuml**
Medical Center Drive to Heritage Road	50,000	45,001	C	45,525	C	524	1%	None
Medical Center Drive								
Telegraph Canyon Road to Medical Center Court	22,000	18,807	B	20,297	C	1,490	7%	None
Medical Center Court to E. Palomar Street	22,000	9,062	A	9,835	A	773	8%	None
Medical Center Court								
East of Medical Center Drive	12,000	9,829	B	**12,092**	**D**	**2,263**	**19%**	**Direct**
North of E. Palomar Street	12,000	4,171	A	4,668	A	497	11%	None
E. Palomar Street								
Oleander Avenue to Medical Center Drive	30,000	4,428	A	4,787	A	359	7%	None
Medical Center Drive to Medical Center Court	30,000	12,593	A	12,593	A	0	0%	None
Medical Center Court to Heritage Road	30,000	10,257	A	10,754	A	497	5%	None

TABLE 8-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS C) [a]	Existing		Existing + Project		Significance Criteria		Impact Type
		ADT[b]	LOS[c]	ADT	LOS	Project ADT > 800	Project Contribution > 5%	
Olympic Parkway								
I-805 Ramps to Oleander Avenue	50,000	**55,710**	**D**	**56,041**	**D**	331	1%	**Cuml**
Oleander Avenue to Brandywine Avenue	50,000	**53,460**	**D**	**53,736**	**D**	276	1%	**Cuml**
Brandywine Avenue to Heritage Road	50,000	**52,125**	**D**	**52,153**	**D**	28	0%	**Cuml**

Footnotes:
a. Capacities based on City of Chula Vista Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.

TABLE 8–3
EXISTING + PROJECT RAMP METER OPERATIONS

Location/Condition	Peak Hour	Peak Hour Flow F [a]	Discharge Rate R [a]	Excess Demand E [a]	Delay [b]	Queue [c]
Telegraph Canyon Road to NB I-805 – 2 SOV + 1 HOV						
Existing	AM	841 [d]	828	13	1	327
Existing + Project	AM	961 [d]	828	33	2	837
Olympic Parkway to SB I-805 – 2 SOV + 1 HOV						
Existing	AM	680 [d]	778	0	0	0
Existing + Project	AM	680 [d]	778	0	0	0

Footnotes:

a. Vehicles per hour per lane.

b. Calculated delay in minutes per lane

c. Calculated queue length in feet per lane

d. 15% reduction in volume due to HOV lane.

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle

TABLE 8–4
EXISTING + PROJECT FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	Hourly Capacity [b]	Peak Hour Volume						V/C [d]		LOS [e]		Δ V/C [f]	
				Existing [c]		Project		Existing + Project							
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 805															
North of Telegraph Canyon Road	NB	4 / 1 / 1	10,400	5,673	5,559	12	30	5,685	5,589	0.547	0.537	B	B	0.001	0.003
	SB	4 / 1 / 1	10,400	5,609	7,796	28	20	5,637	7,816	0.542	0.752	B	C	0.003	0.002
Interstate 805															
South of Olympic Parkway	NB	4 / 1 / 0	9,200	4,160	4,719	13	9	4,173	4,728	0.454	0.514	B	B	0.001	0.001
	SB	4 / 1 / 0	9,200	3,924	5,157	5	13	3,929	5,170	0.427	0.562	B	B	0.001	0.001

Footnotes:

a. Number of mainline lanes / number of auxiliary lanes / number of HOV lanes.
b. Capacity calculated at 2000 vph per lane, 1200 vph per Auxiliary lane and 1200 vph per HOV Lane.
c. Existing ADT Volumes were obtained directly from the freeway Performance Measurement System (PeMS) website.
d. Volume to Capacity ratio.
e. Level of Service.
f. Increase in V/C ratio due to project traffic.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

9.0 CUMULATIVE PROJECTS

Cumulative projects are other projects within the vicinity of the study area that will add traffic to the local circulation system in the near future. Based on coordination with City staff, it was decided to account for cumulative projects by applying a 10% growth factor to the Existing volumes. It should be noted that the South Bay Bus Rapid Transit project was taken into consideration. This project, once completed, will serve as a mode of rapid transit from Downtown San Diego to the Otay Mesa Port of Entry. Construction for this project is scheduled to commence in January 2017. Additional details can be found in ***Appendix D***.

Figure 9–1 shows the Cumulative Projects traffic volumes, ***Figure 9–2*** shows the Existing + Cumulative Projects (Near-Term without Project) traffic volumes, and ***Figure 9–3*** shows the Existing + Cumulative Projects (Near-Term) + Project traffic volumes.

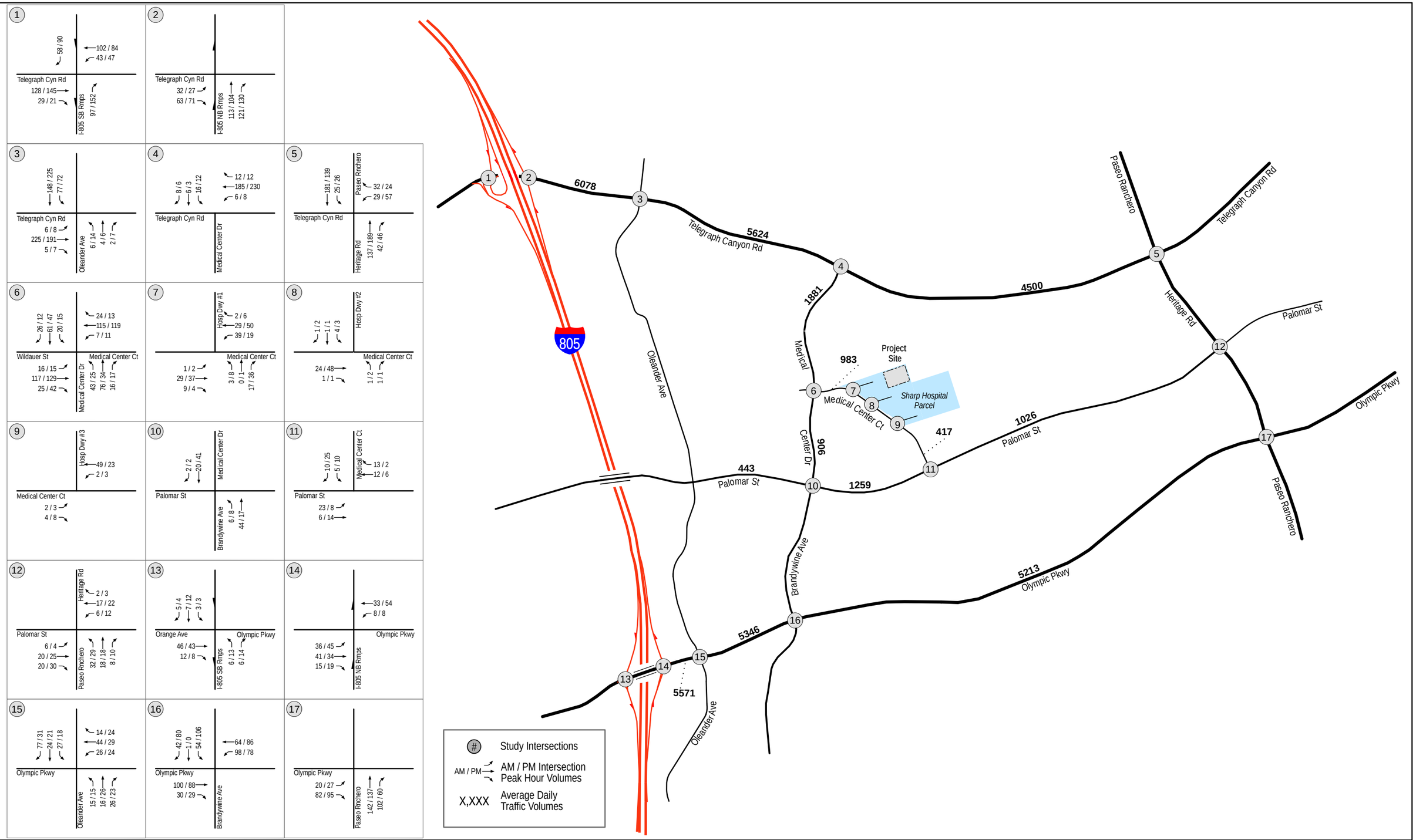

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Figure 9-1

Cumulative Projects Traffic Volumes

SHARP CHULA VISTA TOWER

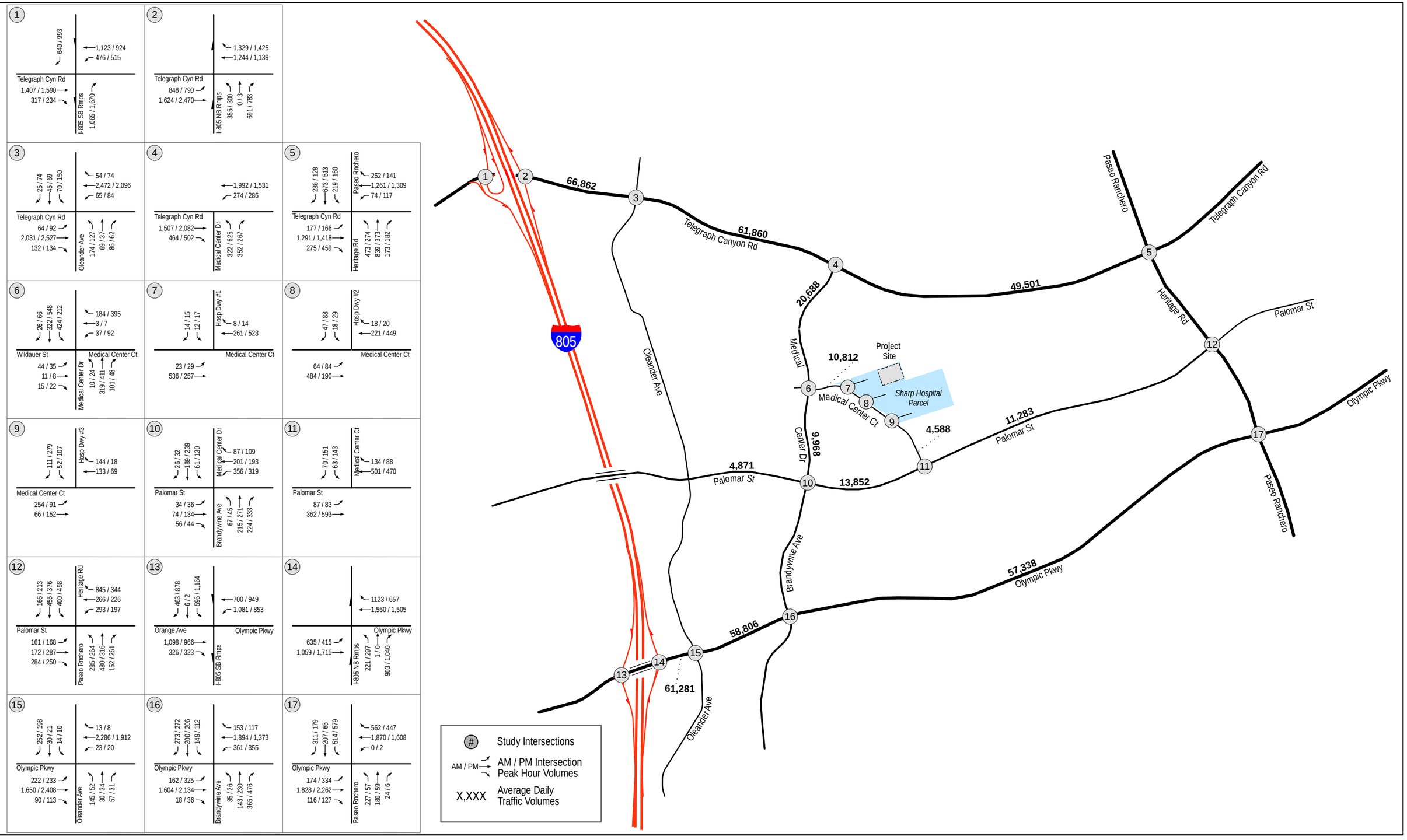

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Figure 9-2

Near-Term (Existing + Cumulative Projects) Traffic Volumes

SHARP CHULA VISTA TOWER

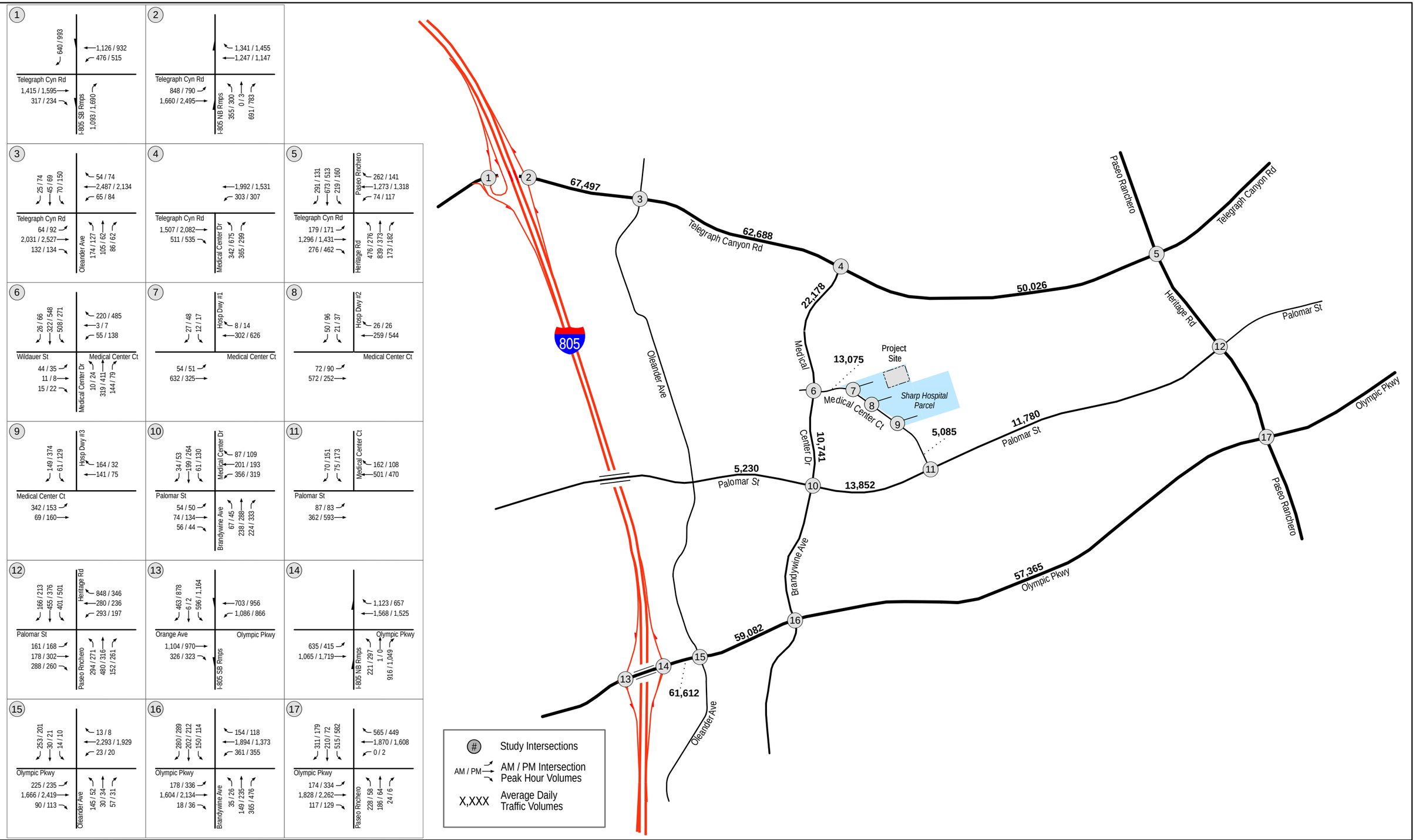

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Figure 9-3

Near-Term (Existing + Cumulative Projects) + Project Traffic Volumes

SHARP CHULA VISTA TOWER

10.0 NEAR-TERM ANALYSIS

10.1 Near-Term (Existing + Cumulative Projects) Conditions

10.1.1 *Peak Hour Intersection Analysis*

Table 10–1 summarizes the peak hour intersection operations under Near-Term conditions in the study area. As shown, the study area intersections are calculated to operate acceptably at LOS D or better during the AM and PM peak hours, with the exception of the following:

- Telegraph Canyon Road / I-805 NB Ramps (LOS E during the PM peak hour)
- E. Palomar Street / Heritage Road (LOS F during the AM peak hour)
- Olympic Parkway / I-805 SB Ramps (LOS E during the AM and LOS F during the PM peak hours)
- Olympic Parkway / I-805 NB Ramps (LOS F during the AM peak hour)
- Olympic Parkway / Oleander Avenue (LOS E during the AM peak hour)
- Olympic Parkway / Brandywine Avenue (LOS E during the PM peak hour)
- Olympic Parkway / Heritage Road (LOS E during the PM peak hour)

Appendix E contains the Near-Term intersection analysis worksheets.

10.1.2 *Daily Street Segment Operations*

Table 10–2 summarizes the Near-Term street segment operations along the key study area roadways. As shown, the study area street segments are calculated to operate acceptably at LOS C or better, with the exception of the following:

- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive (LOS D)
- Olympic Parkway: I-805 Ramps to Oleander Avenue (LOS D)
- Olympic Parkway: Oleander Avenue to Brandywine Avenue (LOS D)
- Olympic Parkway: Brandywine Avenue to Heritage Road (LOS D)

10.1.3 *Ramp Meter Operations*

Table 10–3 summarizes the Near-Term AM peak hour ramp meter operations at the Telegraph Canyon Road / I-805 NB On-Ramp and the Olympic Parkway / I-805 NB On-Ramp. As shown, the ramp meters are calculated to operate acceptably during the AM peak hour. The ramp meters are not used during the PM peak hour, and therefore, PM peak hour analysis was not conducted for the study area ramp meters.

10.1.4 *Freeway Mainline Operations*

Table 10–4 summarizes the Near-Term freeway mainline operations. As shown, the study area freeway mainline segments are calculated to operate at acceptable levels of service during the AM and PM peak hours.

10.2 Near-Term + Project Conditions

10.2.1 *Peak Hour Intersection Analysis*

Table 10–1 summarizes the peak hour intersection operations under Near-Term + Project conditions in the study area. As shown, with the addition of Project traffic, the study area intersections are calculated to continue to operate acceptably at LOS D or better during the AM and PM peak hours, with the exception of the following:

- Telegraph Canyon Road / I-805 NB Ramps (LOS E during the PM peak hour)
- E. Palomar Street / Heritage Road (LOS F during the AM peak hour)
- Olympic Parkway / I-805 SB Ramps (LOS E during the AM and LOS F during the PM peak hours)
- Olympic Parkway / I-805 NB Ramps (LOS F during the AM peak hour)
- Olympic Parkway / Oleander Avenue (LOS E during the AM peak hour)
- Olympic Parkway / Brandywine Avenue (LOS E during the PM peak hour)
- Olympic Parkway / Heritage Road (LOS E during the PM peak hour)

Based on the City of Chula Vista's significance criteria, ***significant cumulative impacts*** are calculated at the seven (7) intersections listed above.

Appendix F contains the Near-Term + Project intersection analysis worksheets.

10.2.2 *Daily Street Segment Operations*

Table 10–2 summarizes the Near-Term + Project street segment operations along the key study area roadways. As shown, with the addition of Project traffic, the study area street segments are calculated to continue to operate acceptably at LOS C or better, with the exception of the following:

- Telegraph Canyon Road: Halecrest Drive to Oleander Avenue (LOS D)
- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive (LOS E)
- Medical Center Court: East of Medical Center Drive (LOS D)
- Olympic Parkway: I-805 Ramps to Oleander Avenue (LOS D)
- Olympic Parkway: Oleander Avenue to Brandywine Avenue (LOS D)
- Olympic Parkway: Brandywine Avenue to Heritage Road (LOS D)

Based on the City of Chula Vista's significance criteria, a ***significant project specific direct impact*** is calculated along the following segment:

- Medical Center Court: East of Medical Center Drive

Based on the City of Chula Vista's significance criteria, ***significant cumulative impacts*** are calculated along the following segments:

- Telegraph Canyon Road: Halecrest Drive to Oleander Avenue
- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive
- Olympic Parkway: I-805 Ramps to Oleander Avenue

- Olympic Parkway: Oleander Avenue to Brandywine Avenue
- Olympic Parkway: Brandywine Avenue to Heritage Road

10.2.3 *Ramp Meter Operations*

Table 10–3 summarizes the Near-Term + Project AM peak hour ramp meter operations at the Telegraph Canyon Road / I-805 NB On-Ramp and the Olympic Parkway / I-805 NB On-Ramp. As shown, with the addition of Project traffic, the ramp meters are calculated to continue to operate acceptably during the AM peak hour. The ramp meters are not used during the PM peak hour, and therefore, PM peak hour analysis was not conducted for the study area ramp meters.

10.2.4 *Freeway Mainline Operations*

Table 10-4 summarizes the Near-Term + Project freeway mainline operations. As shown, with the addition of Project traffic, the study area freeway mainline segments are calculated to continue to operate at acceptable levels of service during the AM and PM peak hours.

TABLE 10–1
NEAR TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near Term		Near Term + Project		Project % of Entering Volume (>5%)	Impact Type
			Delay[a]	LOS[b]	Delay	LOS		
1. Telegraph Canyon Road / I-805 SB Ramps	Signal	AM	12.0	B	12.0	B	1%	None
		PM	37.3	D	37.8	D	1%	
2. Telegraph Canyon Road / I-805 NB Ramps	Signal	AM	46.6	D	47.1	D	1%	**Cuml**
		PM	**63.1**	**E**	**65.7**	**E**	1%	
3. Telegraph Canyon Road / Oleander Avenue	Signal	AM	25.3	C	25.6	C	1%	None
		PM	26.2	C	26.6	C	1%	
4. Telegraph Canyon Road / Medical Center Drive	Signal	AM	28.0	C	29.7	C	2%	None
		PM	34.4	C	38.3	D	3%	
5. Telegraph Canyon Road / Heritage Road	Signal	AM	54.1	D	54.8	D	0%	None
		PM	45.9	D	46.2	D	1%	
6. Medical Center Court / Medical Center Drive	Signal	AM	21.8	C	30.9	C	11%	None
		PM	25.2	C	43.0	D	11%	
7. Medical Center Court / Loop Road Access West	OWSC [c]	AM	14.5	B	15.9	C	17%	None
		PM	16.7	C	33.7	D	21%	
8. Medical Center Court / Loop Road Access East	OWSC	AM	13.8	B	20.3	C	15%	None
		PM	15.9	C	21.4	C	18%	
9. Medical Center Court / Main Hospital Dwy	OWSC	AM	15.3	C	21.9	C	18%	None
		PM	11.4	B	13.5	B	22%	
10. E Palomar Street / Medical Center Drive	Signal	AM	33.2	C	33.4	C	4%	None
		PM	50.8	D	52.0	D	4%	
11. E Palomar Street / Medical Center Court	Signal [d]	AM	9.0	A	9.3	A	3%	None
		PM	10.9	B	11.6	B	3%	
12. E Palomar Street / Heritage Road	Signal	AM	**97.3**	**F**	**97.7**	**F**	1%	**Cuml**
		PM	51.2	D	51.8	D	1%	
13. Olympic Parkway / I-805 SB Ramps	Signal	AM	**63.8**	**E**	**64.0**	**E**	0%	**Cuml**
		PM	**84.2**	**F**	**85.7**	**F**	0%	

TABLE 10–1
NEAR TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Near Term		Near Term + Project		Project % of Entering Volume (>5%)	Impact Type
			Delay[a]	LOS[b]	Delay	LOS		
14. Olympic Parkway / I-805 NB Ramps	Signal	AM	**104.2**	**F**	**106.4**	**F**	0%	**Cuml**
		PM	53.7	D	54.6	D	1%	
15. Olympic Parkway / Oleander Avenue	Signal	AM	**57.7**	**E**	**58.1**	**E**	1%	**Cuml**
		PM	45.8	D	46.0	D	1%	
16. Olympic Parkway / Brandywine Avenue	Signal	AM	38.3	D	39.0	D	1%	**Cuml**
		PM	**59.4**	**E**	**59.8**	**E**	1%	
17. Olympic Parkway / Heritage Road	Signal	AM	45.1	D	45.1	D	0%	**Cuml**
		PM	**62.7**	**E**	**62.9**	**E**	0%	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC – One Way Stop Controlled intersection. Minor street left-turn delay reported.
d. This intersection is assumed to be signalized in 2017.

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 10–2
NEAR TERM STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS C) [a]	Near Term		Near Term + Project		Significance Criteria		Impact Type
		ADT[b]	LOS[c]	ADT	LOS	Project ADT > 800	Project Contribution > 5%	
Telegraph Canyon Road								
Halecrest Drive to Oleander Avenue	61,250	66,862	C	**67,497**	**D**	635	1%	**Cuml**
Oleander Avenue to Medical Center Drive	50,000	**61,860**	**D**	**62,688**	**E**	**828**	1%	**Cuml**
Medical Center Drive to Heritage Road	50,000	49,501	C	50,026	C	524	1%	None
Medical Center Drive								
Telegraph Canyon Road to Medical Center Court	22,000	20,688	B	22,178	C	1,490	7%	None
Medical Center Court to E. Palomar Street	22,000	9,968	A	10,741	A	773	7%	None
Medical Center Court								
East of Medical Center Drive	12,000	10,812	C	**13,075**	**D**	**2,263**	**17%**	**Direct**
North of E. Palomar Street	12,000	4,588	A	5,085	A	497	10%	None
E. Palomar Street								
Oleander Avenue to Medical Center Drive	30,000	4,871	A	5,230	A	359	7%	None
Medical Center Drive to Medical Center Court	30,000	13,852	A	13,852	A	0	0%	None
Medical Center Court to Heritage Road	30,000	11,283	A	11,780	A	497	4%	None

TABLE 10–2
NEAR TERM STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS C) [a]	Near Term		Near Term + Project		Significance Criteria		Impact Type
		ADT[b]	LOS[c]	ADT	LOS	Project ADT > 800	Project Contribution > 5%	
Olympic Parkway								
I-805 Ramps to Oleander Avenue	50,000	**61,281**	**D**	**61,612**	**D**	331	1%	**Cuml**
Oleander Avenue to Brandywine Avenue	50,000	**58,806**	**D**	**59,082**	**D**	276	0%	**Cuml**
Brandywine Avenue to Heritage Road	50,000	**57,338**	**D**	**57,365**	**D**	28	0%	**Cuml**

Footnotes:
a. Capacities based on City of Chula Vista Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.

TABLE 10–3
NEAR TERM RAMP METER OPERATIONS

Location/Condition	Peak Hour	Peak Hour Flow F [a]	Discharge Rate R [a]	Excess Demand E [a]	Delay [b]	Queue [c]
Telegraph Canyon Road to NB I-805 – 2 SOV + 1 HOV						
Near-Term	AM	925 [d]	828	97	7	2431
Near-Term + Project	AM	946 [d]	828	118	9	2941
Olympic Parkway to NB I-805 – 2 SOV + 1 HOV						
Near-Term	AM	748 [d]	778	0	0	0
Near-Term + Project	AM	748 [d]	778	0	0	0

Footnotes:

a. Vehicles per hour per lane.

b. Calculated delay in minutes per lane

c. Calculated queue length in feet per lane

d. 15% reduction in volume due to HOV lane.

General Notes:

1. SOV = Single Occupancy Vehicle, HOV = High Occupancy Vehicle

TABLE 10–4
NEAR-TERM FREEWAY MAINLINE OPERATIONS

Freeway Segment	Dir.	# of Lanes [a]	Hourly Capacity [b]	Peak Hour Volume						V/C [c]		LOS [d]		Δ V/C [e]	
				Near-Term		Project		Near-Term + Project							
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 805															
North of Telegraph Canyon Road	NB	4 / 1 / 1	10,400	5,794	5,689	12	30	5,806	5,719	0.558	0.550	B	B	0.001	0.003
	SB	4 / 1 / 1	10,400	5,706	7,948	28	20	5,734	7,968	0.551	0.766	B	C	0.003	0.002
Interstate 805															
South of Olympic Parkway	NB	4 / 1 / 0	9,200	4,258	4,797	13	9	4,271	4,806	0.464	0.522	B	B	0.001	0.001
	SB	4 / 1 / 0	9,200	4,006	5,252	5	13	4,011	5,265	0.436	0.572	B	B	0.001	0.001

Footnotes:

a. Number of mainline lanes / number of auxiliary lanes / number of HOV lanes.
b. Capacity calculated at 2,000 vph per lane and 1,200 vph per Auxiliary lane.
c. Volume to Capacity ratio.
d. Level of Service.
e. Increase in V/C ratio due to project traffic.

LOS	V/C
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

11.0 LONG-TERM ANALYSIS

This section provides analysis of Long-Term Conditions. Since the Project is consistent with Long-Term plans in the area, and with the existing zoning for the property, this section provides analysis of the intersections immediately adjacent to the Project site and street segments for the entire study area under Long-Term (with Project conditions).

11.1 Long-Term Volumes

Long-Term traffic volumes were forecasted for the study area using the SANDAG Series 11 Regional Traffic Model, with adjustments made as necessary to reflect appropriate growth. As noted above, the Project is consistent with Long-Term plans in the area and with the existing zoning, and is therefore reflected in the SANDAG Series 11 traffic volumes.

Based on the projected forecast ADT volumes, the Long-Term peak hour volumes were calculated based on the existing relationship between ADT and peak hour volumes. The forecast volumes were also checked for consistency between intersections, where no driveways or roadways exist between intersections, and were compared to existing volumes for accuracy.

Appendix G contains additional information on the I-805 / DAR Project and projected volumes for Long-term conditions along East Palomar Street, Telegraph Canyon, and Olympic Parkway once the construction of the DAR on East Palomar Street is complete. The Long-term analysis assumes the I-805 / DAR Project to be completed.

Figure 11–1 depicts the Long-Term with Project traffic volumes.

11.2 Peak Hour Intersection Operations

Table 11–1 summarizes the Long-Term with Project traffic peak hour intersection operations for the intersections immediately adjacent to the Project site. As shown, the study area intersections are calculated to operate acceptably at LOS D or better during the AM and PM peak hours, with the exception of the following:

- E. Palomar Street / Medical Center Drive (LOS E during the AM and PM peak hours)

Based on the City of Chula Vista's significance criteria, a ***significant <u>cumulative</u> impact*** is calculated at this intersection.

Appendix H contains the Long-Term with Project peak hour analysis worksheets.

11.3 Daily Street Segment Operations

Table 11–2 summarizes the Long-Term with Project traffic street segment operations. As shown, the study area street segments are calculated to operate acceptably at LOS C or better, with the exception of the following:

- Telegraph Canyon Road: Halecrest Drive to Oleander Avenue (LOS E)
- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive (LOS F)

- Telegraph Canyon Road: Medical Center Drive to Heritage Road (LOS D)
- Medical Center Drive: Telegraph Canyon Road to Medical Center Court (LOS D)
- Medical Center Court: East of Medical Center Drive (LOS E)
- Olympic Parkway: Brandywine Avenue to Heritage Road (LOS D)

Based on the City of Chula Vista's significance criteria, a ***significant project specific direct impact*** is calculated at the following segment:

- Medical Center Court: East of Medical Center Drive

Based on the City of Chula Vista's significance criteria, ***significant cumulative impacts*** are calculated at the following segments:

- Telegraph Canyon Road: Halecrest Drive to Oleander Avenue
- Telegraph Canyon Road: Oleander Avenue to Medical Center Drive

TABLE 11–1
LONG TERM WITH PROJECT INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Long Term with Project		Project % of Entering Volume (>5%)	Impact Type
			Delay[a]	LOS[b]		
4. Telegraph Canyon Road / Medical Center Drive	Signal	AM PM	29.2 38.4	C D	2% 3%	None
6. Medical Center Court / Medical Center Drive	Signal	AM PM	25.5 31.9	C C	11% 11%	None
10. E. Palomar Street / Medical Center Drive	Signal	AM PM	**69.6** **79.8**	**E** **E**	2% 2%	**Cuml**
11. E. Palomar Street / Medical Center Court	Signal[c]	AM PM	9.3 11.7	A B	3% 3%	None

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. This intersection is assumed to be signalized in 2017.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 11–2
LONG TERM WITH PROJECT STREET SEGMENT OPERATIONS

Street Segment	Classification	LOS C Capacity[a]	Long-Term with Project		Significance Criteria		Impact Type
			ADT[b]	LOS[c]	Project ADT > 800	Project % of Entering Volume (>5%)	
Telegraph Canyon Road							
Halecrest Drive to Oleander Avenue	7-Lane Expressway	61,250	**70,900**	**E**	635	1%	**Cuml**
Oleander Avenue to Medical Center Drive	6-Lane Prime Arterial	50,000	**65,800**	**F**	**828**	1%	**Cuml**
Medical Center Drive to Heritage Road	6-Lane Prime Arterial	50,000	52,500	D	524	1%	None
Medical Center Drive							
Telegraph Canyon Road to Medical Center Court	Class I Collector	22,000	24,400	D	1,490	6%	None
Medical Center Court to E. Palomar Street	Class I Collector	22,000	11,800	A	773	7%	None
Medical Center Court							
East of Medical Center Drive	Class II Collector	12,000	**14,400**	**E**	**2,263**	**16%**	**Direct**
North of E. Palomar Street	Class II Collector	12,000	5,600	A	497	9%	None
E. Palomar Street							
Oleander Avenue to Medical Center Drive	4-Lane Major Road	30,000	17,800	A	359	2%	None
Medical Center Drive to Medical Center Court	4-Lane Major Road	30,000	17,900	A	0	0%	None
Medical Center Court to Heritage Road	4-Lane Major Road	30,000	14,100	A	497	4%	None
Olympic Parkway							
I-805 Ramps to Oleander Avenue	6-Lane Prime Arterial	50,000	46,300	C	331	1%	None
Oleander Avenue to Brandywine Avenue	6-Lane Prime Arterial	50,000	48,800	C	276	1%	None

TABLE 11–2
LONG TERM WITH PROJECT STREET SEGMENT OPERATIONS

Street Segment	Classification	LOS C Capacity[a]	Long-Term with Project		Significance Criteria		Impact Type
			ADT[b]	LOS[c]	Project ADT > 800	Project % of Entering Volume (>5%)	
Brandywine Avenue to Heritage Road	6-Lane Prime Arterial	50,000	53,000	D	28	1%	None

Footnotes:

a. Capacities based on City of Chula Vista Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.

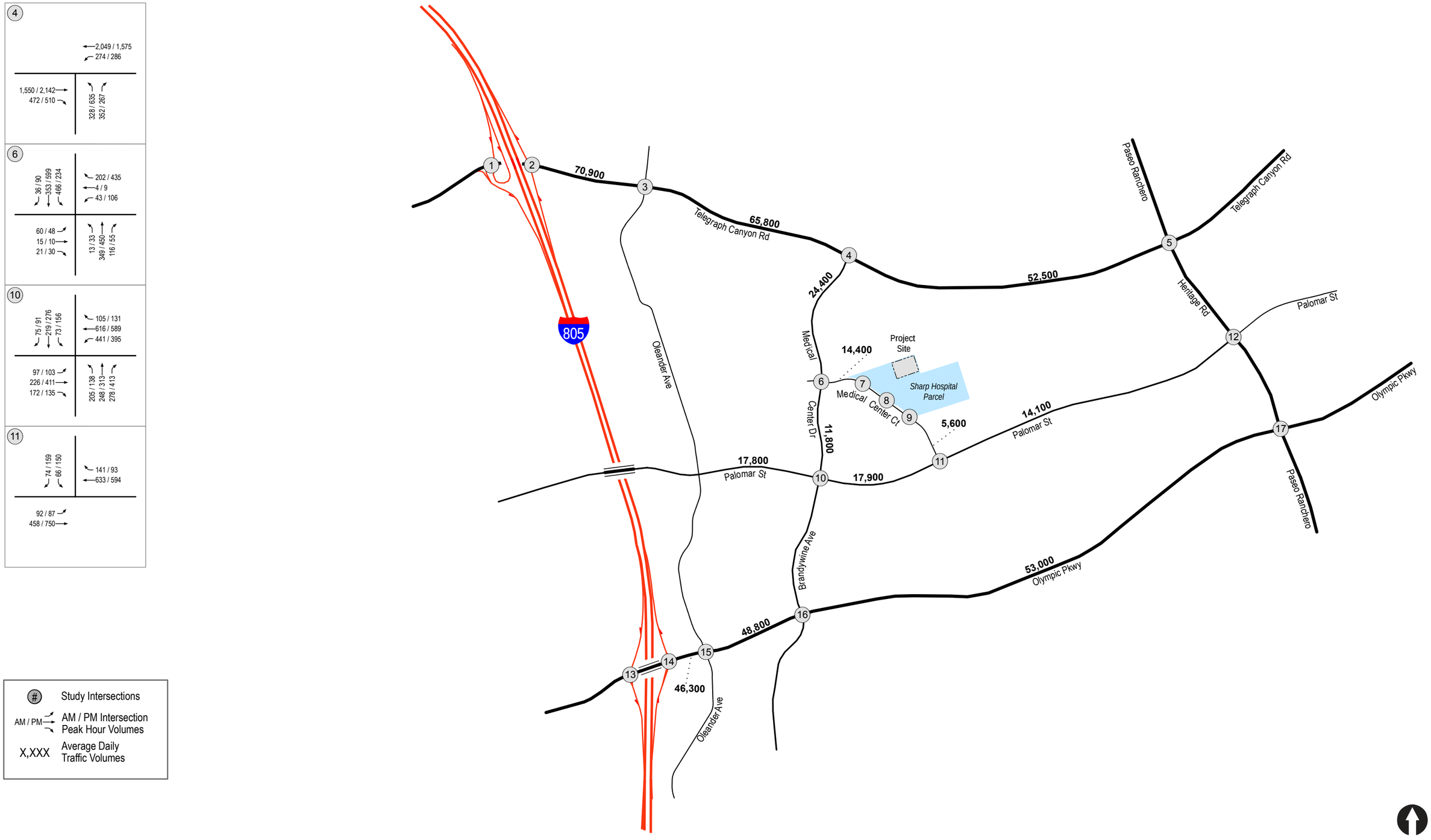

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Figure 11-1

Long-Term With Project Traffic Volumes

SHARP CHULA VISTA TOWER

12.0 CONSTRUCTION TRAFFIC ANALYSIS

In addition to the Project generated traffic analysis conducted for the Sharp Chula Vista Medical Center Ocean View Tower project, a supplemental construction traffic analysis was conducted for Near-Term (Existing + Cumulative Projects) + Construction traffic conditions. The purpose of the construction analysis is to review any traffic implications due to construction traffic associated with the Project. The construction analysis was based on the same analysis methodologies used throughout this report. The following is a discussion summarizing the anticipated construction activities, trip generation, key assumptions, and traffic analysis.

12.1 Construction Phases

The Project is proposing four (4) construction phases as summarized below:

- **Phase 1 (Planning and Coordination)** January 2016 – August 2016: Key activities include design, OSHPD permitting, investigation of existing conditions, and coordination/planning. Phase 1 is expected to require a maximum of 20 employees per day, with the delivery of approximately 20 trailers between February and March 2016. This phase is calculated to generate a maximum of 140 ADT.
- **Phase 2 (Preliminary Utility Relocation, Shoring, and Foundations)** September 2016 – February 2017: Key activities include design, OSHPD permitting, securing of the construction site, the construction of pedestrian walkways, initial utilities, and the construction of a temporary loading dock. The Loop Road on will be closed for this Phase of construction. Traffic using the Loop Road will be rerouted to the Hospital's Main Driveway. Phase 2 is expected to require a maximum of 130 employees per day, with a maximum of 20 heavy vehicle deliveries per day. This phase is calculated to generate a maximum of 360 ADT.
- **Phase 3 (Structure through Exterior)** March 2017-September 2019: Key activities include construction of the building structure, building enclosure, interior finishes, and site work/loading dock. The Loop Road on will be closed for this Phase of construction. Traffic using the Loop Road will be rerouted to the Hospital's Main Driveway. Phase 3 is expected to require a maximum of 230 employees per day, with a maximum of 10 heavy vehicle deliveries per day. This phase is calculated to generate a maximum of 510 ADT.
- **Phase 4 (Finishing Touches)** October 2019 – February 2020: Key activities include Sharp move-in, licensing, and corridor tie-in / renovation. Phase 4 is expected to require a maximum of 70 employees per day. This phase is calculated to generate a maximum of 140 ADT.

Phase 3 will be the most intensive in terms of traffic generation and proposes the closure of the Loop Road. Therefore, Phase 3 was selected for analysis.

It should be noted that there are three bus stops located on Medical Center Court at the following locations. These bus stops will be maintained throughout construction of the Project:

- Approximately 35' west of Loop Road Access West on the north side of Medical Center Court
- Approximately 40' east of the Emergency Driveway on the north side of Medical Center Court
- Approximately 30' east of the Emergency Driveway on the south side of Medical Center Court

12.2 Phase 3 Construction Trip Generation

The construction workforce is expected to include employees involved in the day-to-day construction activities, trucks for equipment/material delivery, and admin/overhead staff to supervise construction activities.

Employees

A typical day during the peak of the construction period will include approximately 230 employees. It was conservatively assumed that all employees would drive to the site in the morning during the AM peak hour and leave the site in the evening during the PM peak hour. It should be noted that carpooling amongst employees will be strongly encouraged. However, to be conservative, no carpooling was assumed in the trip generation calculations.

Trucks

Construction traffic will also consist of heavy vehicles (trucks). It is estimated that during the peak of construction a maximum of 10 trucks will deliver materials to the construction site on a daily basis. The assumed percent of ADT to occur during the peak hours for truck traffic is approximately 20% during the AM peak hour and 20% during the PM peak hour, as the truck trips are expected to be relatively equally distributed throughout the day.

According to *Highway Capacity Manual 2010*, a passenger car equivalent (PCE) factor of 2.5 for trucks is used to account for the effects of heavy vehicles in the traffic flow. "Passenger Car Equivalence" is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since:

- They are larger than passenger cars, and therefore, occupy more roadway space; and
- Their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades), which cannot always be effectively filled by normal passing maneuvers.

Exhibit 11-10, Passenger Car Equivalents by Type of Terrain, (*obtained from "Highway Capacity Manual 2010*) summarizes PCE factors for various types of vehicles. The type of terrain in the project area is relatively level. However, in order to be conservative the "rolling" terrain PCE was

applied. As seen in *Exhibit 11-10*, the passenger car equivalents are 2.5 for trucks on a rolling terrain (See ***Appendix I***).

Table 12–1 tabulates the construction traffic generation for Phase 3. As shown, Phase 3 is calculated to generate 510 ADT with 228 inbound / 22 outbound trips during the AM peak hour and 22 inbound / 228 outbound trips during the PM peak hour.

The construction generated trips were assigned to the street network based on the trip distribution percentages on *Figure 7–1* and are depicted on ***Figure 12–1***. The Near-Term (Existing + Cumulative) + Phase 3 Construction traffic volumes are depicted in ***Figure 12–2***. It should be noted that since the Loop Road on will be closed during Phase 3 of construction, the Existing traffic using the Loop Road was rerouted to the Hospital's Main Driveway (Intersection #9).

TABLE 12–1
CONSTRUCTION TRAFFIC TRIP GENERATION – PHASE 3

Land Use	Trucks or Workers (per day)[a]	Daily Trip Rate	PCE[b]	ADT[c]	AM Peak Hour		PM Peak Hour	
					In	Out	In	Out
Worker Vehicles[d]	230	2	N/A	460	218	12	12	218
Heavy Trucks[e]	10	2	2.5	50	10	10	10	10
Total:	**240**	**–**	**–**	**510**	**228**	**22**	**22**	**228**

Footnotes:

a. Daily trucks or workers needed for Phase 3 of construction.

b. Passenger Car Equivalents. Based on the Highway Capacity Manual's Exhibit 21-8, a Passenger Car Equivalent (PCE) factor of 2.5 was applied. The 2.5 PCE for rolling terrain was used in order to be conservative.

c. Average Daily Trips.

d. 100% of the workers are assumed to arrive / depart from the site during the peak hours (95:5 spit in/out during the AM and 5:95 split in / out during the PM)

e. Given that the heavy vehicle traffic will occur throughout the day, approximately 20% was conservatively assumed to occur during both the AM and PM peak hours (50:50 split in / out).

12.3 Near-Term Construction Analysis

Table 12–2 summarizes the peak hour intersection operations under Near-Term (Existing + Cumulative) + Construction conditions at the intersections immediately adjacent to the Project site. As shown, the study area intersections are calculated to operate acceptably at LOS D or better during the AM and PM peak hours, with the exception of the following:

- Medical Center Court / Main Hospital Driveway (LOS F during the AM peak hour)

Based on the City of Chula Vista's significance criteria, a ***significant project specific direct impact*** is calculated at the intersection listed above during construction of the Project.

Appendix J contains the Near-Term (Existing + Cumulative Projects) + Construction intersection analysis worksheets.

TABLE 12-2
NEAR-TERM INTERSECTION CONSTRUCTION OPERATIONS

	Intersection	Control Type	Peak Hour	Near-Term		Near-Term + Construction		Project % of Entering Volume (>5%)	Impact Type
				Delay[a]	LOS[a]	Delay	LOS		
6.	Medical Center Court / Medical Center Drive	Signal	AM	21.8	C	35.9	D	12%	None
			PM	25.2	C	35.8	D	10%	None
7.	Medical Center Court / Loop Road Access West [c]	OWSC [d]	AM	14.5	B	-	-	-	-
			PM	16.7	C	-	-	-	-
8.	Medical Center Court / Loop Road Access East [c]	OWSC	AM	13.8	B	-	-	-	-
			PM	15.9	C	-	-	-	-
9.	Medical Center Court / Main Hospital Driveway	OWSC	AM	15.3	C	**143.5**	**F**	**22%**	**Direct**
			PM	11.4	B	18.5	C	21%	None
11.	E Palomar Street / Medical Center Court	Signal [e]	AM	9.0	A	9.2	A	4%	None
			PM	10.9	B	11.7	B	3%	None

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Intersection will be closed during the construction phase of the project.
d. OWSC – One-way Stop Controlled intersection. Minor street left-turn delay reported.
e. This intersection is assumed to be signalized in 2017.

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

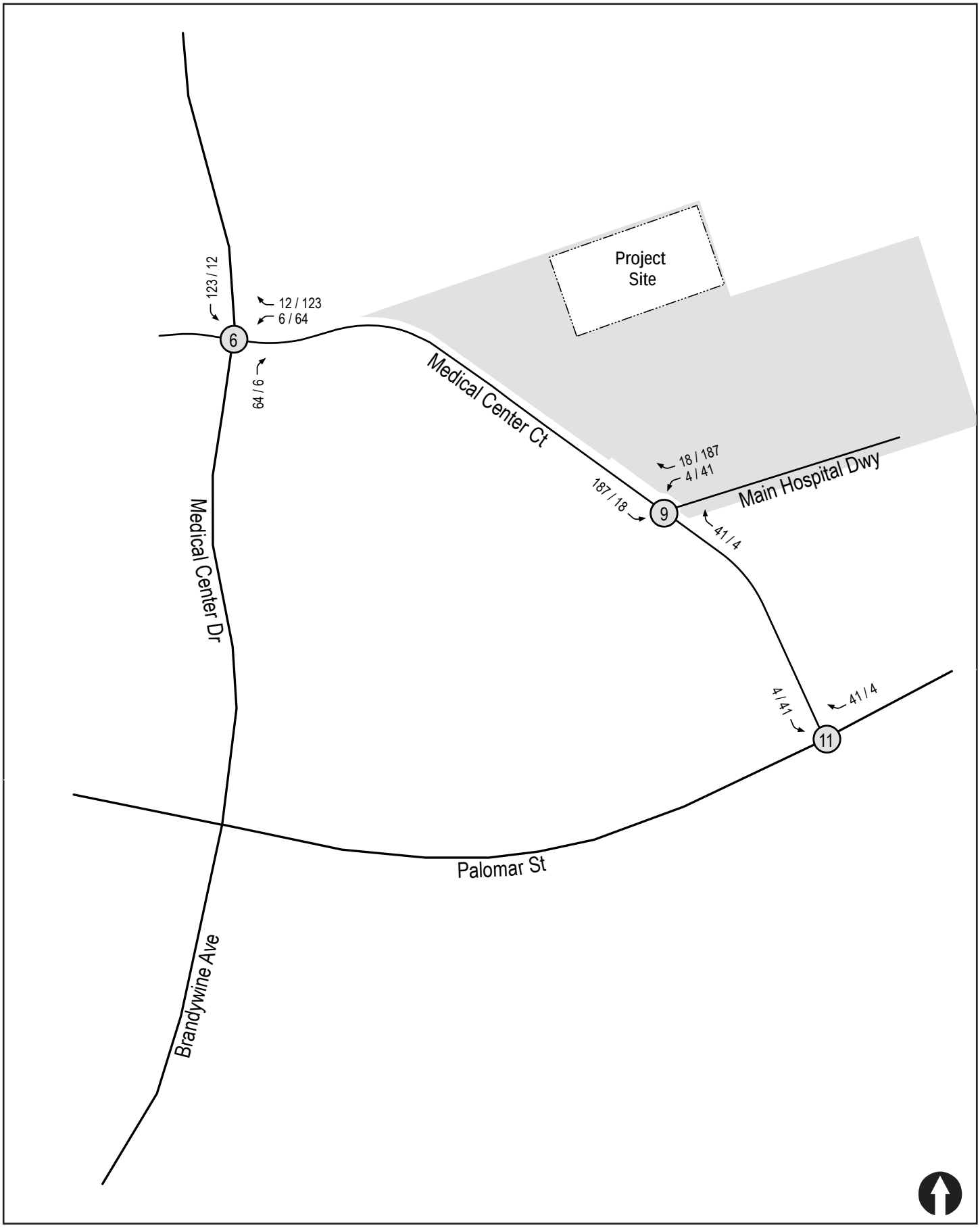

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Figure 12-1

Construction Traffic Volumes

SHARP CHULA VISTA TOWER

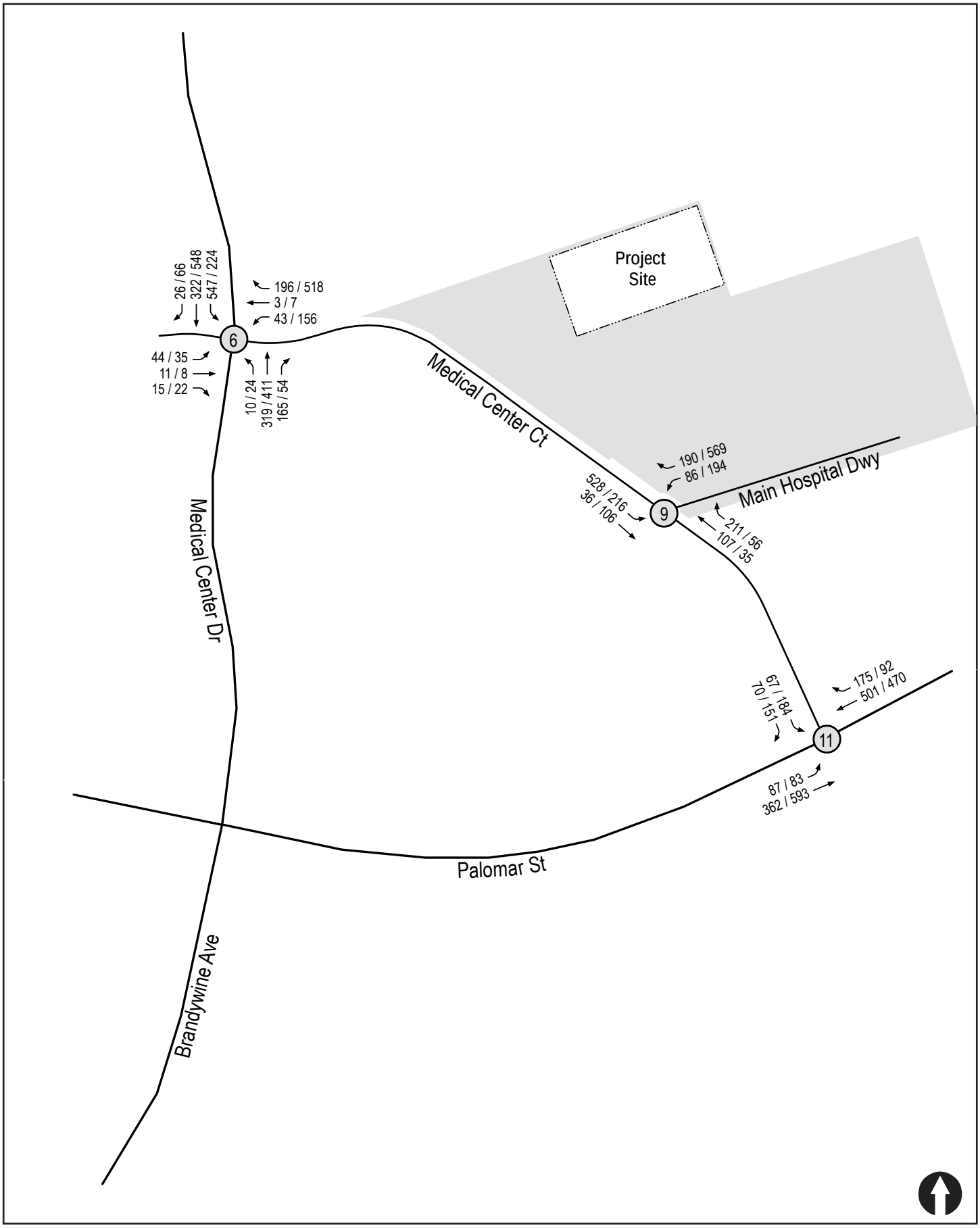

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Figure 12-2

Existing + Cumulative Projects + Construction Traffic Volumes

SHARP CHULA VISTA TOWER

13.0 PARKING ASSESSMENT

A Parking Study, dated January 25, 2016, was prepared by AVRP Studios for the Sharp Chula Vista Medical Center campus, summarizing the total parking supply under existing conditions, during construction and post-construction of the Project's 138-bed hospital tower. Based on information contained in the Parking Study (included in ***Appendix K***), post-construction the Hospital will provide a total of 481 beds and 176,588 SF of floor space.

Per 19.62.050 of the City of Chula Vista's Municipal Code, hospitals shall provide 1.5 parking spaces / bed and 1 parking space / 200 SF of floor space. Therefore, based on the uses outlined in the AVRP Studio's Parking Study, Sharp Chula Vista is required to provide a total of 1,605 parking spaces, as summarized below:

- 481 Beds x 1.5 parking spaces = 722 parking spaces
- 176,588 SF of floor space x 1 parking space per 200 SF = 883 parking spaces
- Total required = ***1,605 parking spaces***

Based on the Parking Study, there is currently a total of 2,300 parking spaces provided by the Hospital. During construction, 32 parking spaces will be removed for the tower space and 300 parking spaces will be temporarily occupied by a construction trailer, reducing the supply to 1,968 parking spaces. Once construction is complete, a total of 2,268 parking spaces will be provided on the Sharp Chula Vista Medical Center campus, a surplus of 663 parking spaces above the 1,605 spaces required.

14.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per the City of Chula Vista's significance thresholds and the analysis methodologies presented in this report, Project-related traffic is calculated to contribute to project specific direct, and cumulative significant impacts within the study area. The following section lists the significant impacts and provides recommendations for mitigation measures to address operating deficiencies.

14.1 Significant Impacts Prior to Mitigation

14.1.1 *Project Specific Direct Impacts*

Based on the City of Chula Vistas significance thresholds, the following project specific direct impacts are calculated.

INTERSECTIONS:

DI-1. Medical Center Court / Main Hospital Driveway (Intersection #9). Impact only calculated during the construction phase of the Project.

SEGMENTS:

DI-2. Medical Center Court: East of Medical Center Drive

14.1.2 *Cumulative Impacts*

Based on the City of Chula Vista's significance thresholds, the following significant cumulative impacts are calculated.

INTERSECTION:

CI-1. Telegraph Canyon Road / I-805 NB Ramps
CI-2. E. Palomar Street / Medical Center Drive
CI-3. E. Palomar Street / Heritage Road
CI-4. Olympic Parkway / I-805 SB Ramps
CI-5. Olympic Parkway / I-805 NB Ramps
CI-6. Olympic Parkway / Oleander Avenue
CI-7. Olympic Parkway / Brandywine Avenue
CI-8. Olympic Parkway / Heritage Road

SEGMENTS:

CI-9. Telegraph Canyon Road: Halecrest Drive to Oleander Avenue
CI-10. Telegraph Canyon Road: Oleander Avenue to Medical Center Drive
CI-11. Olympic Parkway: I-805 Ramps to Oleander Avenue
CI-12. Olympic Parkway: Oleander Avenue to Brandywine Avenue
CI-13. Olympic Parkway: Brandywine Avenue to Heritage Road

14.2 Mitigation Measures

14.2.1 *Project Specific Direct Impacts*

Under Near-Term conditions, the Project is calculated to have significant project specific direct impacts at one (1) study intersection and one (1) street segment. The following summarizes the recommended mitigation measures. INTERSECTION:

DI-1. Medical Center Court / Main Hospital Driveway

The impact at this location is only calculated during the construction phase of the Project, and is therefore temporary and will not occur once the Project is constructed and occupied. To mitigate the project specific direct impact, it is recommended that the Project prepare and implement a traffic control plan during the construction phase of the Project. This plan may include construction personnel directing traffic, construction start / end times which avoid peak periods, and / or other traffic reducing measures.

SEGMENT:

DI-2. Medical Center Court: East of Medical Center Drive

Provide eastbound left turn lanes at the Veterans Home Driveway and the West Hospital Loop Road and restripe Medical Center Court between the West Hospital Loop Road and the Main Hospital Driveway to provide a two-way left-turn lane. Medical Center Court is currently 38' wide, and could accommodate two 14' thru lanes and a 10' two-way left-turn lane. Curbside parking along this segment is currently prohibited. A conceptual figure for this mitigation measure is shown in ***Appendix L***.

The Project adds a maximum of 2,263 ADT to Medical Center Court. County of San Diego standards indicate that the addition of a two-way-left-turn-lane to a two-lane roadway adds 2,800 ADT of capacity. Therefore the provision of the extra lane will fully mitigate the Project impact. The post-mitigation LOS on Medical Center Court would be LOS C.

14.2.2 *Cumulative Impacts*

The Project is calculated to have significant cumulative impacts at eight (8) study intersections and five (5) street segments. In coordination with the City of Chula Vista, it has been determined that the Project is not subject to the City's Transportation Development Impact Fees (TDIF). In order to mitigate the cumulative traffic impacts, the project shall contribute to the City's Capital Project Fund. These funds would then be used in conjunction with TDIF program funds to construct system improvements that address cumulative traffic impacts.