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TRAFFIC IMPACT ANALYSIS

BRIGHTWATER RANCH

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Lakeside, California
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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 development of a 66-unit Brightwater residential subdivision. This traffic study analyzes intersections and street segments in the vicinity to determine potential impacts related to the increased traffic generated by the proposed project.

Included in this traffic study are the following:

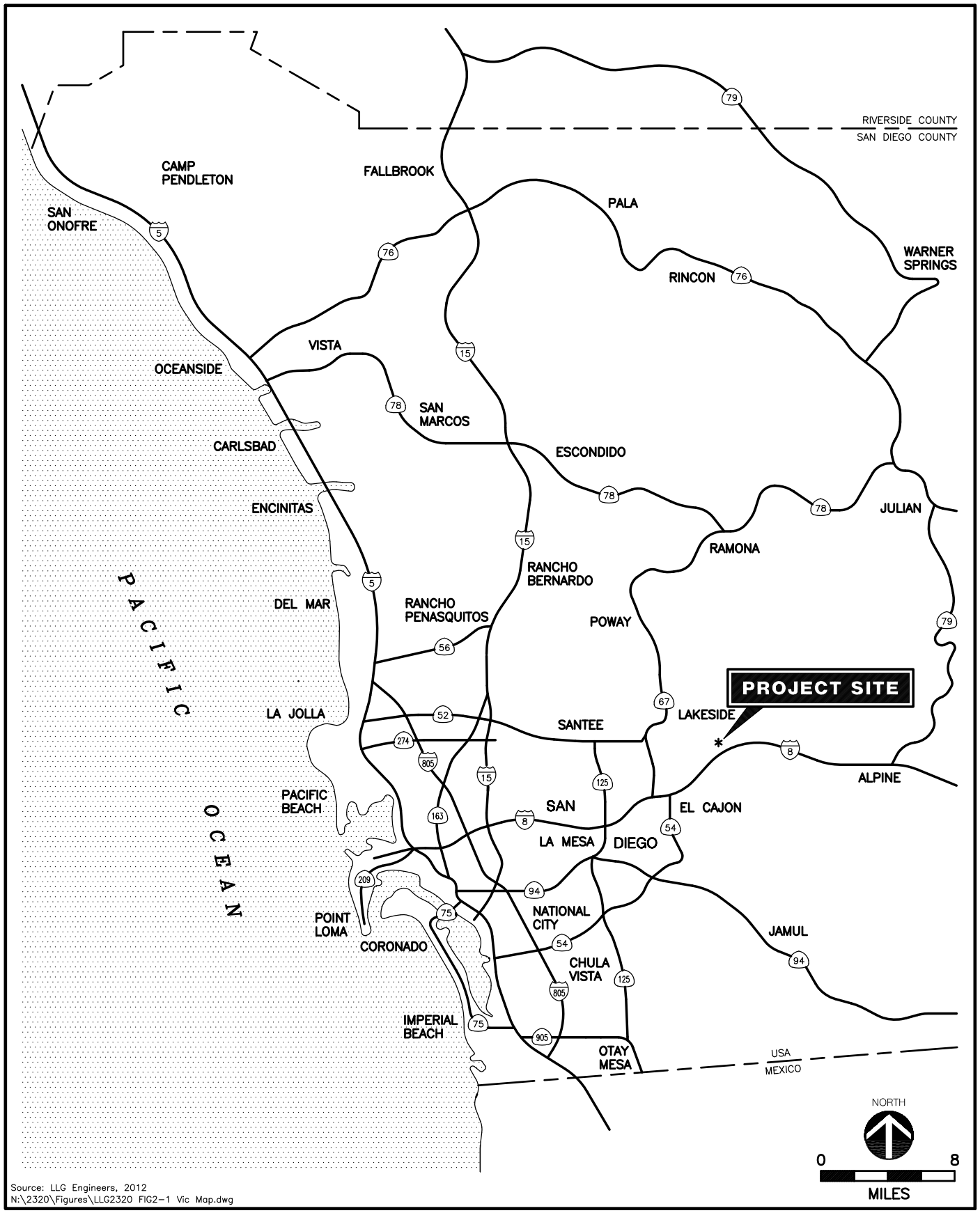
- Project description
- Existing conditions description
- Analysis approach and methodology
- Significance criteria
- Analysis of existing conditions
- Trip generation/distribution/assignment
- Cumulative projects discussion
- Analysis of near term conditions
- Site Access Discussion
- Significance of impacts/mitigation measures.

2.0 PROJECT DESCRIPTION

The proposed Brightwater project consists of a 66 single-family home subdivision on 78.8 acres within the Community of Lakeside in the County of San Diego. The project site is situated at the terminus of Wellington Hill Drive, west of Los Coches Road. The existing site is currently undeveloped. ***Figure 2-1*** shows the general location of the project, while ***Figure 2-2*** shows a more detailed project area map.

Access to the project site will be provided via the existing Wellington Hill Drive and a new public roadway which will connect to Highway 8 Business.

Figure 2-3shows the project's site plan.



Source: LLG Engineers, 2012
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Figure 2-1

Vicinity Map

BRIGHTWATER

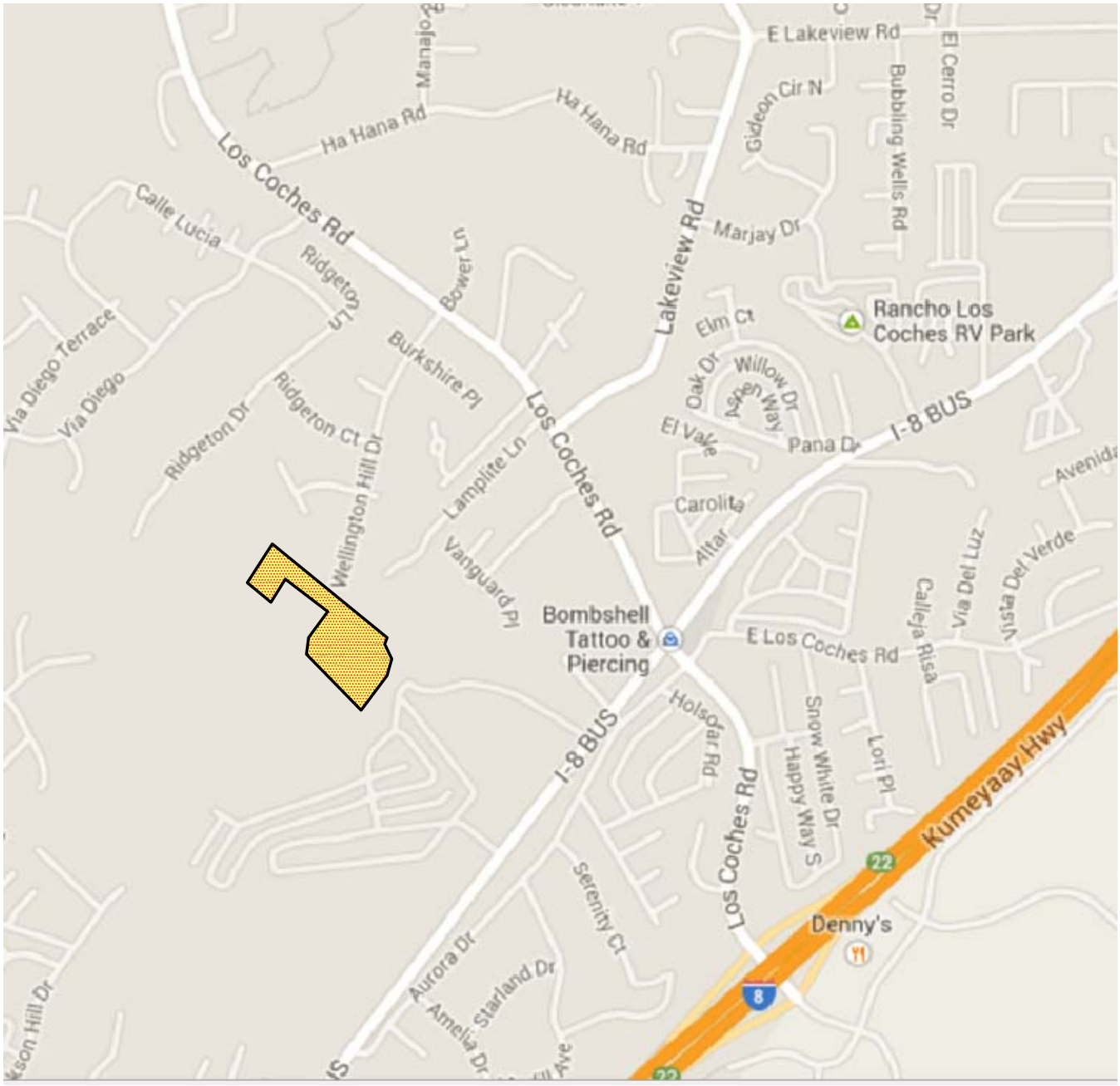

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Figure 2-2

Project Area Map

BRIGHTWATER

NORTH

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Source: Project Design Consultants, 02/2014

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Figure 2-3

Site Plan

BRIGHTWATER

3.0 EXISTING CONDITIONS

3.1 Study Area

The study area for this project encompasses areas of anticipated impact related to the project. The scope of the study area was developed based on the guidelines outlined in the *"County of San Diego Report Format and Content Requirements – Transportation and Traffic – Second Modification August 24, 2011"* Manual, existing traffic volumes, the proposed project distribution, and a working knowledge of the local transportation system based on LLG's prior work in this area.

The intersections and segments included in the study area are listed below:

Intersections:

1. Woodside Avenue / Maine Avenue
2. Los Coches Road / Julian Avenue
3. Los Coches Road / Wellington Hill Drive
4. Los Coches Road / Highway 8 Business
5. Los Coches Road / I-8 Westbound Ramps
6. Los Coches Road / I-8 Eastbound Ramps
7. Highway 8 Business / Project Access

Segments:

Wellington Hill Drive

- West of Los Coches Road

Los Coches Road

- Woodside Avenue to Wellington Hill Drive
- Wellington Hill Drive to Highway 8 Business
- Highway 8 Business to I-8

Highway 8 Business

- Pepper Drive to Project Driveway
- Project Driveway to Los Coches Road

3.2 Existing Street Network

The following is a description of the existing street network in the study area. ***Figure 3-1*** shows an existing conditions diagram.

Los Coches Road is classified as a 2.*1D Community Collector* from Julian Avenue to Highway 8 Business, and as a *4.1 B Major Road* from Highway 8 Business to Interstate 8 on the County of San Diego General Plan Mobility Element. Los Coches Road is currently constructed as a two-lane undivided roadway with a Two-Way Left-Turn-Lane (TWLTL) median between Woodside Avenue and Highway 8 Business. South of Highway 8 Business, Los Coches Road transitions into a four-lane roadway with a TWLTL median. Curbside parking is permitted on both sides of the roadway

for the majority of Los Coches Road and the posted speed limit is 45 mph. Bike lanes, curb, gutter, and sidewalks are provided.

Highway 8 Business is classified as a 4.*2B Boulevard* on the County of San Diego General Plan Mobility Element. Highway 8 Business is currently constructed as a two-lane undivided roadway east and west of Los Coches Road. Parking is generally prohibited and the posted speed limit is 45 mph. Bike lanes, bus stops, curb, gutter, and sidewalks are provided.

Wellington Hill Drive is an unclassified roadway on the County of San Diego General Plan Mobility Element serving fronting residential homes along both sides of the road. Currently, Wellington Hill Drive has an overall curb-to-curb width of 40 feet along the entire length of the Wellington Hill Drive and provides one lane of travel in each direction. The posted speed limit is 25 on Wellington Hill Drive. No bike lanes or bus stops are provided and curbside parking is permitted along both sides of the roadway. Curb, gutter, and sidewalks are also provided.

3.3 Existing Traffic Volumes

Weekday AM/PM peak hour intersection turning movement and bi-directional daily (24-hour) traffic counts were conducted at the study area intersections and street segments on Tuesday, February 25, 2014. The peak hour counts were conducted during the commuter peak hours of 7:00-9:00 AM and 4:00-6:00 PM. ***Table 3–1*** is a summary of the average daily traffic volumes (ADTs).

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]	Date	Source
Wellington Hill Drive			
West of Los Coches Road	1,020	February 2014	LLG
Los Coches Road			
Woodside Avenue to Wellington Hill Drive	12,400	February 2014	LLG
Wellington Hill Drive to Highway 8 Business	13,800	February 2014	LLG
Highway 8 Business to I-8	19,380	February 2014	LLG
Highway 8 Business			
Pepper Drive to Project Driveway	8,380	February 2014	LLG
Project Driveway to Los Coches Road	8,300	February 2014	LLG

Footnotes:

a. Average Daily Traffic Volumes.

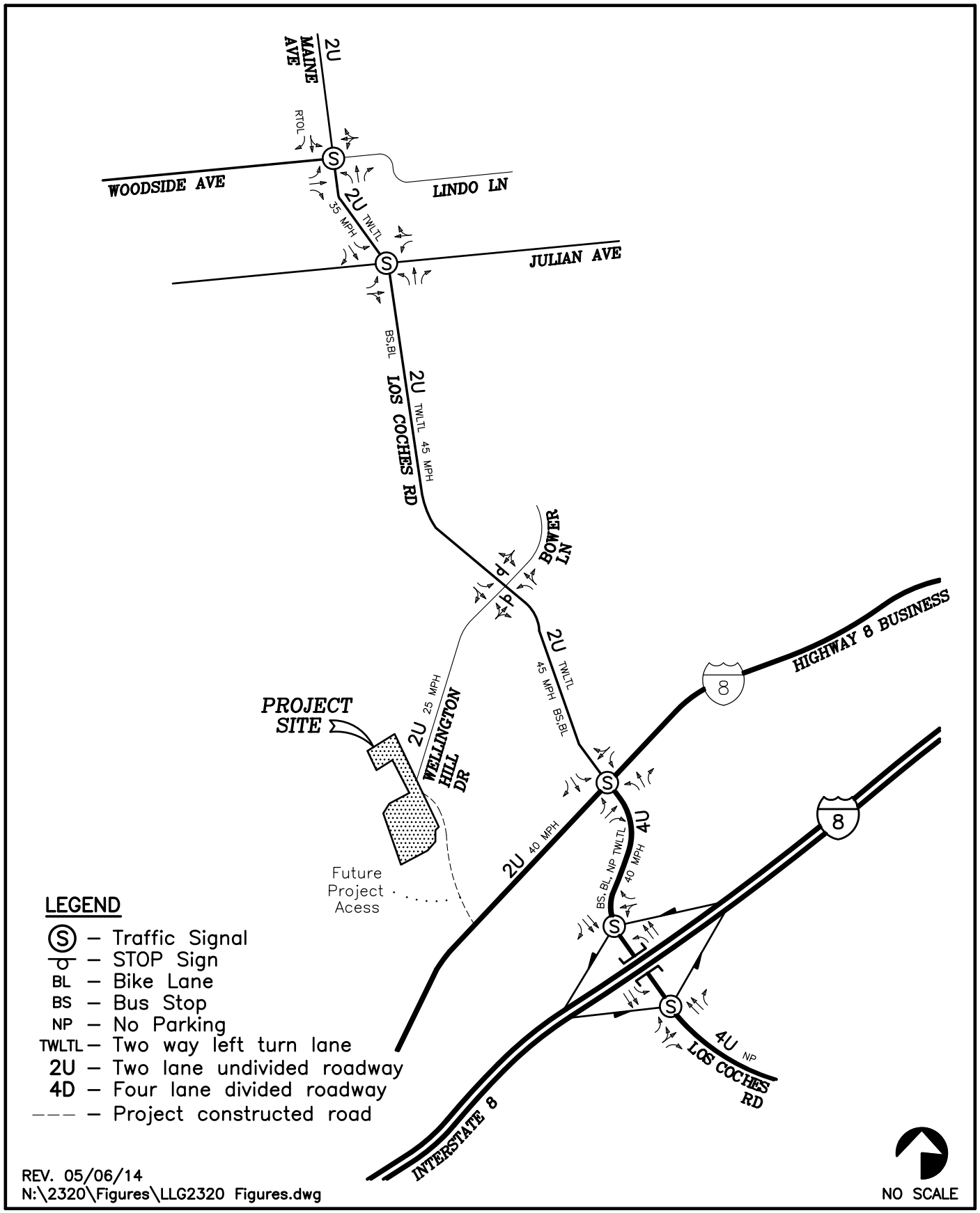

Figure 3-1

Existing Conditions Diagram

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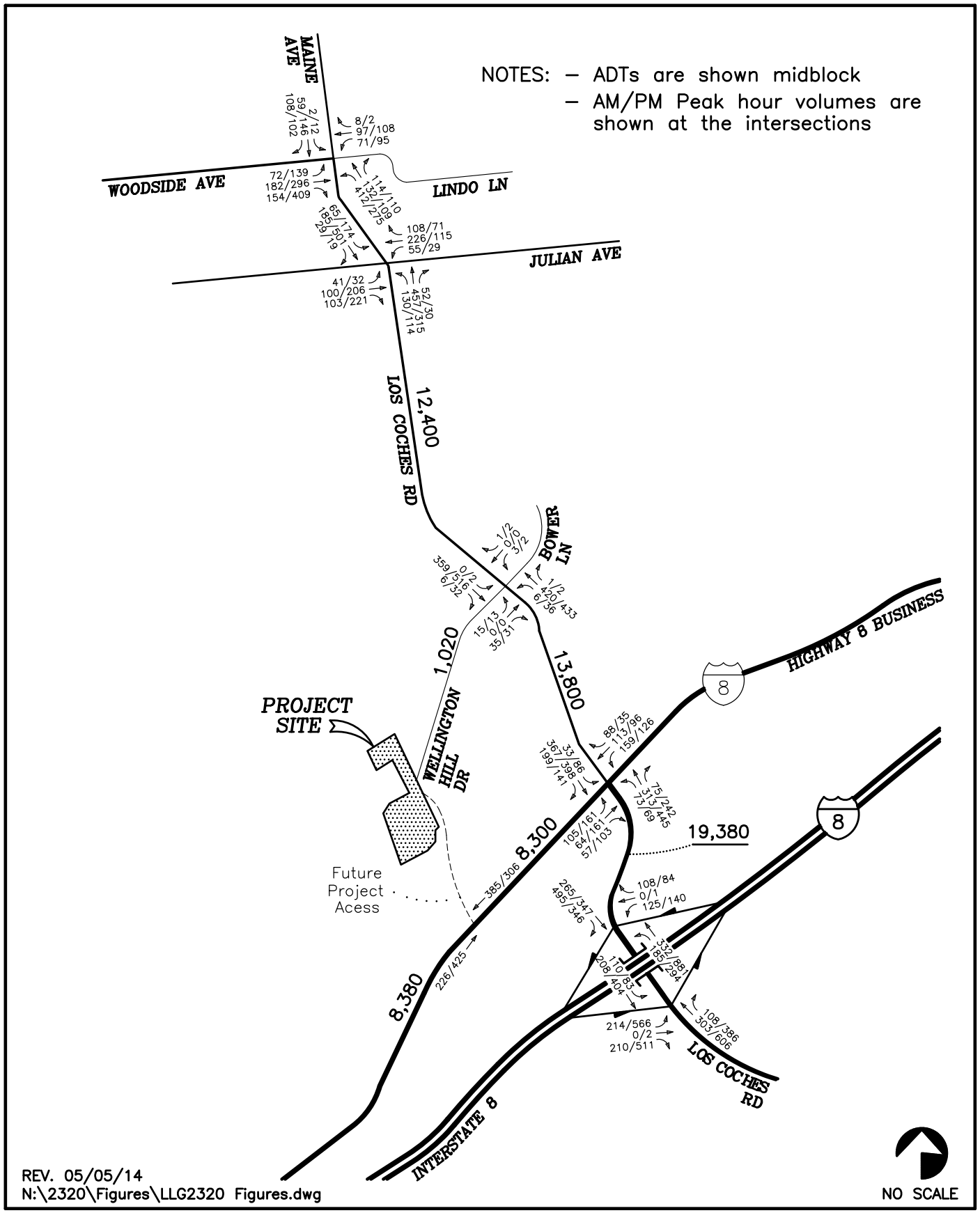

Figure 3-2

Existing Traffic Volumes AM/PM Peak Hours & ADTs

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BRIGHTWATER

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 16 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 7) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). A more detailed explanation of the methodology is 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 17 of the *2000 Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* (version 7) computer software. A more detailed explanation of the methodology is also attached in *Appendix B.*

4.1.1 *Caltrans ILV Analysis*

Caltrans requires that State-owned signalized intersections be analyzed using Intersecting Lane Vehicles (ILV) methodology as described in Chapter 400, Topic 406 of the Department Highway Design Manual. The ILV methodology is based on the concept that capacity of intersecting lanes of traffic is 1,500 vehicles per hour. For the typical local street interchange there is usually a critical intersection of a ramp and the crossroads that establishes the capacity of the interchange. ***Appendix G*** contains the Caltrans ILV calculation sheets. The following intersections were analyzed using the ILV methodology:

- Los Coches Road / I-8 Westbound Ramps
- Los Coches Road / I-8 Eastbound Ramps

4.2 Street Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the County 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 County of San Diego's *Roadway Classification, Level of Service, and ADT Table* is attached in ***Appendix C***.

5.0 SIGNIFICANCE CRITERIA

The following criteria was utilized to evaluate potential significant impacts, based on the *County of San Diego Guidelines for Determining Significance—Transportation and Traffic*, dated June 30, 2009 with a second modification effective August 24, 2011. The County of San Diego's General Plan Mobility Element discusses the County's Level of Service criteria under Goal M-2. It requires that development projects provide associated road improvements necessary to achieve a level of service of "D" or higher on all Mobility Element roads except for those where a failing level of service has been accepted by the County.

5.1 Road Segments

5.1.1 *Circulation Element Road Segments*

This section provides guidance for evaluating adverse environmental effects a project may have on Circulation Element street segments. The allowable ADT increases on LOS E/F operation roadways were obtained from County guidelines and are summarized in ***Table 5–1***. The thresholds in *Table 5–1* are based upon average operating conditions on County roadways. Exceeding the thresholds in *Table 5–1* would result in a significant impact. It should be noted that these thresholds only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

TABLE 5–1
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON
CIRCULATION ELEMENT ROAD SEGMENTS
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

General Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

5.1.2 *Non-Circulation Element Residential Streets*

Per the *County of San Diego Guidelines for Determining Significance—Transportation and Traffic*, "Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots and not to carry through traffic, however, for projects that will substantially increase traffic volumes on residential streets, a comparison of the traffic volumes on the residential streets with the recommended design capacity must be provided. Recommended design capacities for non-Circulation Element streets are provided in the San Diego County Public and Private Road Standards. Traffic volume that exceeds the design capacity on residential streets may impact residences and should be analyzed on a case-by-case basis".

5.2 Intersections

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections. ***Table 5–2*** was obtained from County guidelines and summarizes the allowable increases in delay or traffic volumes at signalized and unsignalized intersections. Exceeding the thresholds in *Table 5-2* would result in a significant impact.

TABLE 5–2
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS
ALLOWABLE INCREASES ON CONGESTED INTERSECTIONS

Level of service	Signalized	Unsignalized
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement
LOS F	Either a Delay of 1 second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement

General Notes:

1. A critical movement is an intersection movement (right-turn, left-turn, through-movement) that experiences excessive queues, which typically operate at LOS F.
2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay ***and*** the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

Signalized Intersections—Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in *Table 5–2*.
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

Unsignalized Intersections—The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic impact on an unsignalized intersection as listed in *Table 5–1* and described as text below:

- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 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 Woodside Avenue / Maine Street which is calculated to operate at LOS E during the PM peak hour.

Appendix D contains the Existing analysis calculation sheets.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
1. Woodside Avenue / Maine Avenue	Signal	AM	38.2	D
		PM	71.9	E
2. Los Coches Road / Julian Avenue	Signal	AM	33.2	C
		PM	35.0	C
3. Los Coches Road / Wellington Hill Drive	TWSC[c]	AM	12.6	B
		PM	13.6	B
4. Los Coches Road / Highway 8 Business	Signal	AM	22.8	C
		PM	28.7	C
5. Los Coches Road / I-8 WB Ramps	Signal	AM	16.0	B
		PM	15.1	B
6. Los Coches Road / I-8 EB Ramps	Signal	AM	16.2	B
		PM	19.5	B
7. Highway 8 Business / Project Access [e]	OWSC[d]	AM	-	-
		PM	-	-

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Two-Way Stop Controlled Intersection.
d. One-Way Stop Controlled Intersection.
e. Intersection does not exist under existing conditions.

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

6.2 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 with the exception of Los Coches Road between Wellington Hill Drive and Highway 8 Business, which is calculated to currently operate at LOS E.

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Existing Functional Classification	Capacity[a]	ADT[b]	LOS[c]
Wellington Hill Drive [d]				
West of Los Coches Road	Residential Collector	4,500	1,020	-
Los Coches Road				
Woodside Avenue to Wellington Hill Drive	Community Collector	19,000	12,400	D
Wellington Hill Drive to Highway 8 Business	Community Collector	19,000	13,800	**E**
Highway 8 Business to I-8	Major Road	34,200	19,380	B
Highway 8 Business				
Pepper Drive to Project Access	Light Collector	16,200	8,380	D
Project Access to Los Coches Road	Light Collector	16,200	8,300	D

Footnotes:

a. Capacities based on County of San Diego Roadway Classification & LOS table (See Appendix C).

b. Average Daily Traffic Volumes.

c. Level of Service.

d. Wellington Hill Drive is a non-Circulation Element Residential Street. The capacity listed for this roadway is the recommended design capacity as shown on the County of San Diego Roadway Classification & LOS table. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic, as discussed further in *Section 5* of this report.

6.3 Caltrans ILV Analysis

Table 6–3 summarizes the Existing ILV analysis for the State owned signalized study area intersections. As seen in ***Table 6–3***, both intersections are calculated to operate "under capacity" during both the AM and PM peak hours.

Appendix D contains the Existing intersection ILV analysis worksheets

TABLE 6–3
EXISTING ILV OPERATIONS

Intersection	Peak Hour	Existing	
		ILV/Hour	Capacity
5. Los Coches Road / I-8 WB Ramps	AM	805	Under Capacity
	PM	865	Under Capacity
6. Los Coches Road / I-8 EB Ramps	AM	476	Under Capacity
	PM	1,027	Under Capacity

SERVICE LEVELS	ILV / HOUR TOTAL
Under Capacity	<1,200
Near Capacity	1,200 – 1,500
Over Capacity	>1,500

7.0 TRIP GENERATION / DISTRIBUTION / ASSIGNMENT

The following is a discussion of the project trip generation calculations and the project traffic distribution and assignment through the local network.

7.1 Trip Generation

Trip generation estimates for the proposed development were calculated based on SANDAG rates provided in the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002*. Project trips were calculated using the trip rate for single-family detached estate homes of 12.0 / Dwelling Unit. ***Table 7-1*** shows the project is calculated to generate approximately 792 ADT with 19 inbound / 44 outbound trips during the AM peak hour and 55 inbound / 24 outbound trips during the PM peak hour.

7.2 Project Traffic Distribution /Assignment

The generated project traffic was distributed and assigned to the street system was primarily based on the existing traffic counts and other factors such as project access, the proximity of the project to I-8, and potential employment, retail, and educational opportunities.

Figure 7-1 presents the estimated project traffic distribution in the site environs. The assignment of project traffic to the surrounding circulation system was based on this estimated distribution and is illustrated in ***Figure 7-2***. ***Figure 7-3*** shows the Existing + Project traffic volumes.

TABLE 7-1
TRIP GENERATION SUMMARY

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
Single-Family	66	12 / DU	792	8%	30:70	19	44	10%	70:30	55	24

Footnotes:

a. Average Daily Trips

b. Rates are based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002 (Estate Home land use).

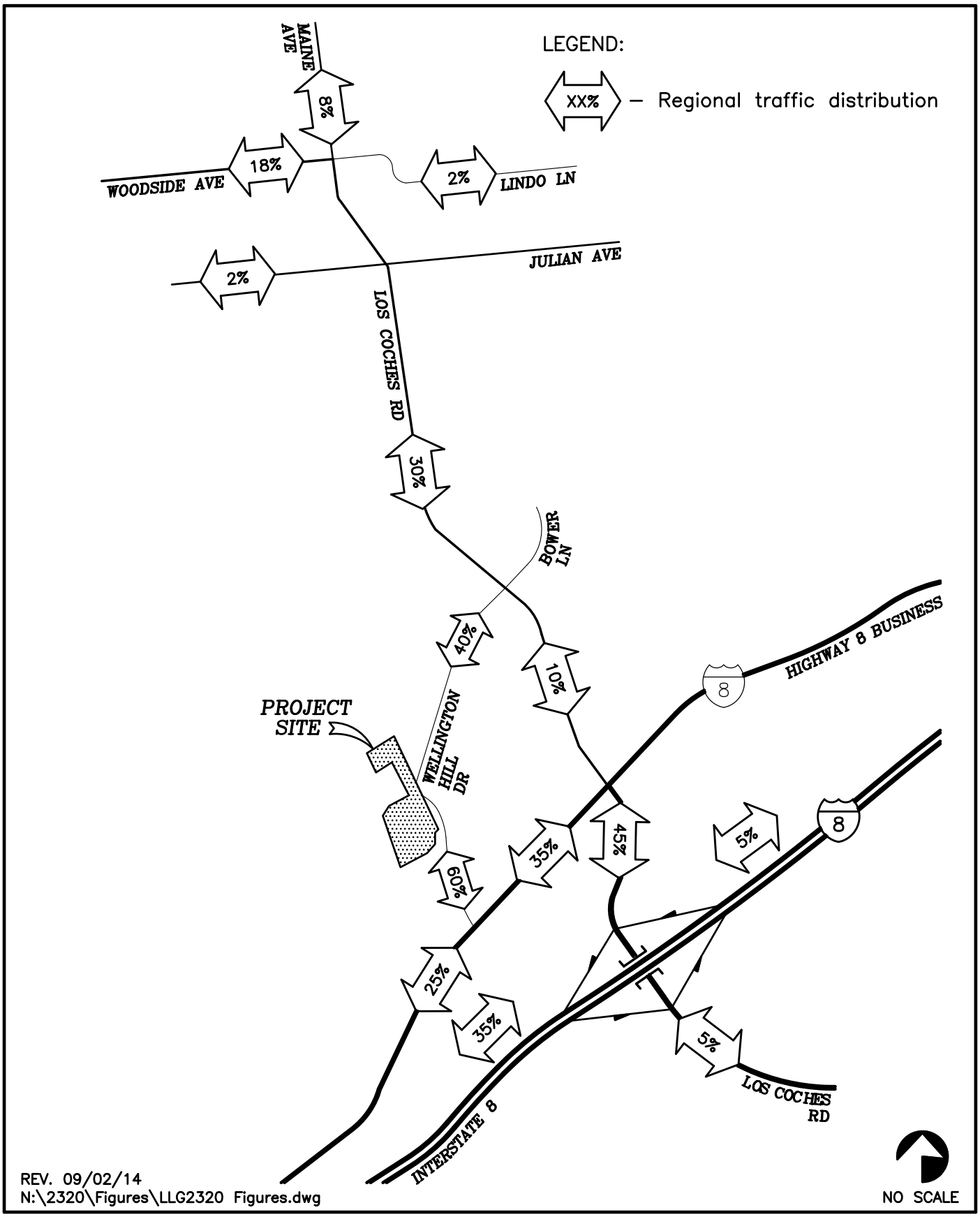

Figure 7-1

Project Traffic Distribution

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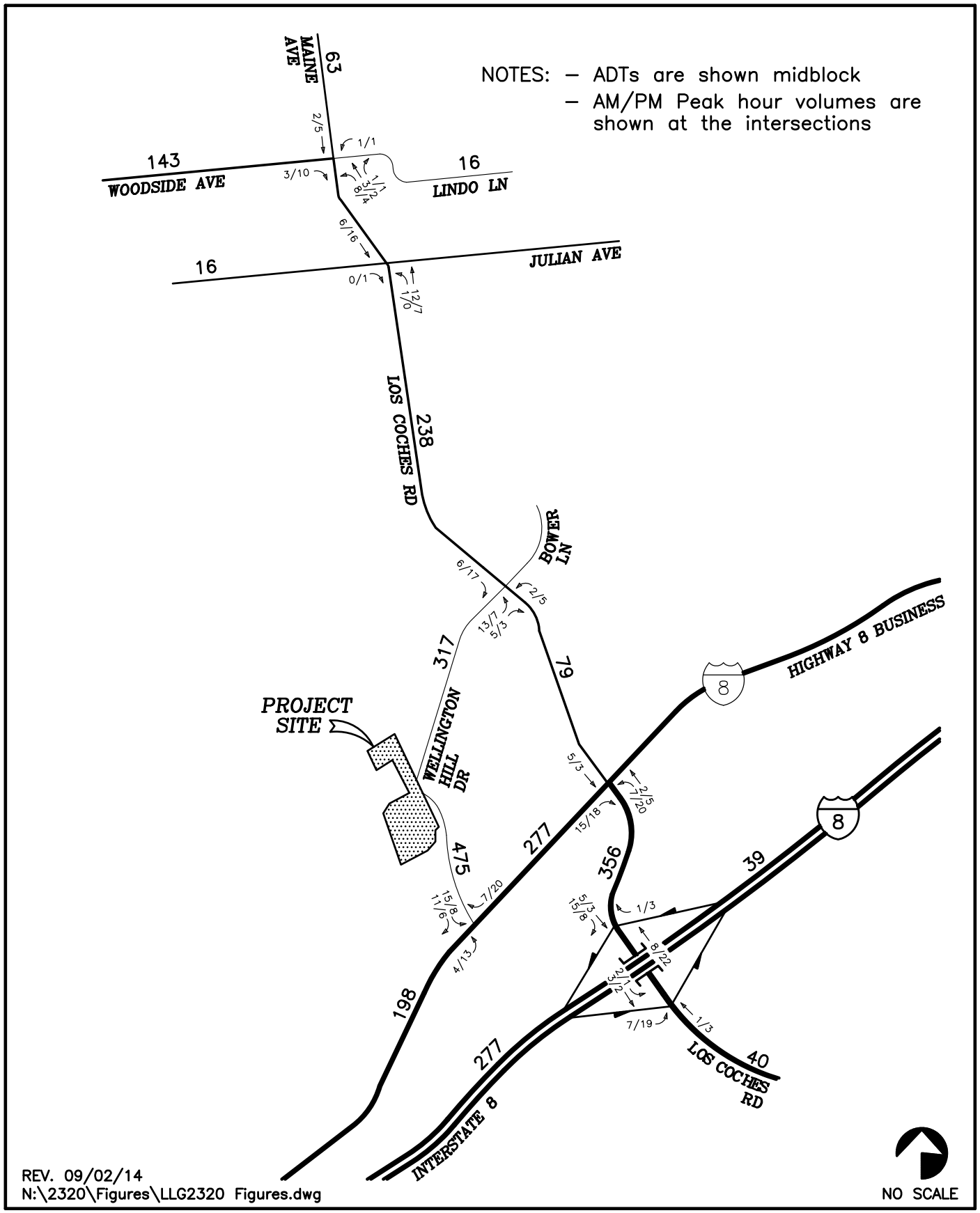

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Figure 7-2

Project Traffic Assignment AM/PM Peak Hours & ADTs

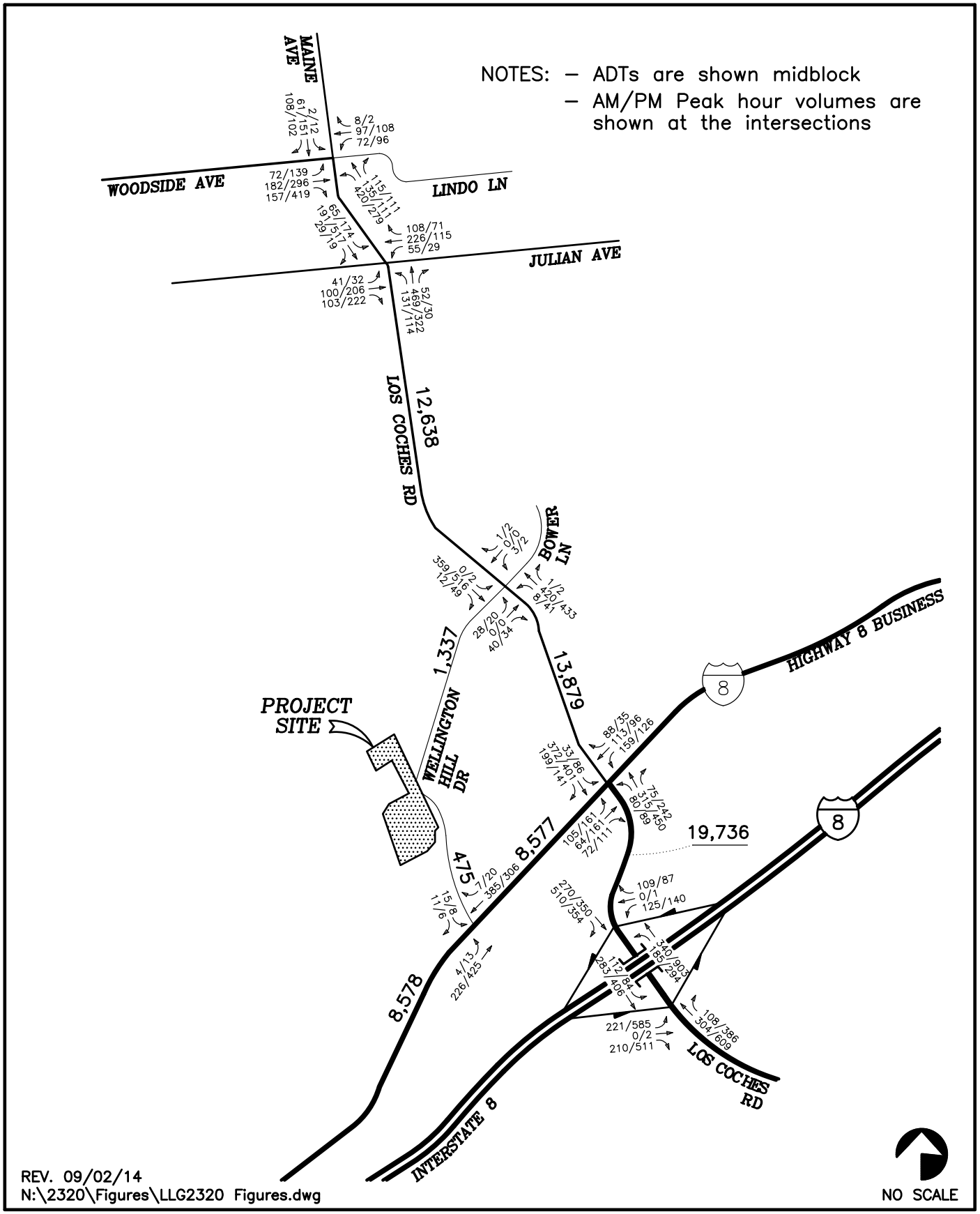

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Figure 7-3

Existing + Project Traffic Volumes AM/PM Peak Hours & ADTs

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8.0 CUMULATIVE PROJECTS

There are other projects in the nearby area that will add traffic to the roadways and intersections in the study area. Based on research conducted during two visits to the County of San Diego Projects Processing Department, and coordination with County of San Diego staff nineteen (19) cumulative development projects were identified for inclusion in this traffic study. The following is a brief description of each cumulative project. It should be noted that some of the following cumulative projects may have already been constructed at the time this study was conducted. Inclusion of any such cumulative projects provides a conservative analysis of cumulative conditions.

1. TM 4811 Subdivision is a proposed 6-unit single-family housing development on 2 acres. The project is proposed to be located on the west side of Los Coches Road between Leyendekker Road and Del Sol Road. This project is calculated to generate 60 ADT with 1 inbound and 4 outbound trips during the AM peak hour and 4 inbound and 2 outbound trips during the PM peak hour. Traffic data for this project was manually derived from the SANDAG 'Brief Guide of Vehicular Traffic Generation Rates', April 2002 for single-family homes.

2. TM 4771 Subdivision is a proposed housing development consisting of 113 single-family residences located east of Winter Gardens Boulevard with access being via Gay Rio Drive. This project is calculated to generate 1,130 ADT with 27 inbound and 63 outbound trips during the midday peak hour and 79 inbound and 34 outbound trips during the PM peak hour. Traffic data utilized for this project was obtained from a traffic study prepared by Federhart & Associates in June 2000.

3. GA Development Minor Subdivision is a proposed single-family residential subdivision. The project proposes to construct 4-single family homes located on Blossom Valley Road, east of Lake Jennings Road within the community of Lakeside.

4. Crest is a proposed single-family residential subdivision. The project proposes to construct 4 single-family homes located on La Cresta Road within the community of Crest.

5. Bridal Run TPM is a proposed single-family residential subdivision. The project proposes to construct 3-single family homes located on Rodeo Drive east of Los Coches Road within the community of Lakeside.

6. Shelia Street TM & Rezone is a proposed single-family residential subdivision. The project proposes to construct 11 single-family homes located on Gardena Road, west of Winter Gardens Boulevard within the community of Winter Gardens.

7. TPM 20305 is a proposed single-family residential subdivision. The project proposes to construct 3 single-family homes. The project site is located east of Jackson Hill Drive between Pepper Drive and Royal Road in the County of San Diego.

8. TPM 20775 is a proposed single-family residential subdivision. The project proposes to construct 2 single-family homes. The project site is located east of I-8, east of Greenfield Drive, and north of La Cresta Road in the County of San Diego.

9. Settler's Point Subdivision is a proposed multi-family residential lot, which will be developed with 236 condominiums within the community of Lakeside. The project site is situated north of Highway 8 Business and west of Los Coches Road. The existing site is currently undeveloped and access to and from the project site will be provided via one main access point to Highway 8 Business and via Wellington Hill Drive. The project is calculated to generate 1,890 ADT with 30 inbound and 121 outbound trips during the AM peak hour and 132 inbound and 57 outbound trips during the PM peak hour. Traffic data for this project was obtained from traffic study completed by LLG in February 2006.

10. The Lake Jennings Village is a proposed 192-unit Condominium project. The project site is situated along the east side of Lake Jennings Park Road and north of Highway 8 Business within the County of San Diego. Currently, one commercial business and three existing residences with associated garages and outbuildings are on the proposed project site. The project is calculated to generate 1,500 ADT with 25 inbound and 98 outbound trips during the AM peak hour and 108 inbound and 46 outbound trips during the PM peak hour. Traffic data from this report was taken from the traffic report by "*Katz, Okitsu & Associates*" in April 2007.

11. TPM 21030 is a proposed single-family residential subdivision. The project proposes to construct 3 single-family homes located north of Ha Hana Road between Chestnut Street and Los Coches Road within the community of Lakeside.

12. TPM 21033 is a proposed single-family residential subdivision. The project proposes to construct 2 single-family homes located west of Los Coches Road between Los Coches Road and Los Coches Creek one mile north of Interstate 8 Business Route within the community of Lakeside.

13. Highway Los Coches Project is a proposed 6,000 sf gas station facility located at 8445 Los Coches Road. A food mart and eight vehicle fueling spaces will be built.

14. Camino Canada is a proposed 44-unit single-family residential subdivision on 5.34 acres that will be developed in the community of Lakeside. The development will be arranged in 22 duplexes. The project site borders Camino Canada and will have internal access through a yet-to-be named street.

15. Lakeside Downs is located within the Lakeside Community Planning Area, just east of the City of Santee, west of Oak Creek Drive and north of El Nopal in the County of San Diego. The 410 acre project site will have a total of 139 single-family residential homes. The project would generate 1,596 ADT with 128 trips during the AM peak hour and 160 trips during the PM peak hour.

16. Lakeside Industrial Park is located south of Mast Boulevard, west of Riverford Road in the City of Santee. A portion of the project is also located within the County of San Diego jurisdiction,

as is the proposed access driveway from Mast Boulevard. The project proposes a Tentative Map application to divide two existing lots and create five (5) parcels for a light industrial park, with a remainder parcel to remain as open space. The project proposes to develop 50,484 SF of office space and 51,289 SF of light industrial. The project would generate 1,420 ADT with 186 trips during the AM peak hour and 180 trips during the PM peak hour.

17. Panwebster Investment Project is located at the north side of Los Coches Road, 250 feet west of Bower Lane. The project proposes a Tentative Map application to divide a 3.58 acre existing lot into four (4) single family residential parcels plus a remainder parcel. The project would generate 48 ADT with 4 trips during the AM peak hour and 5 trips during the PM peak hour.

18. Winter Gardens Elementary School is located on Pueblo Road, north of Winter Gardens Drive in the community of Lakeside. The project proposes changing the existing student mix from approximately 467 preschool / kindergarten students to approximately 456 kindergarten / 1st grade students. The project would result in a net decrease of 340 ADT with an increase of 101 trips during the AM peak hour and a net decrease of 60 trips during the school PM peak hour.

19. Marilla Drive Preschool is located on Marilla Drive, just south of Woodside Avenue in the community of Lakeside. The project proposes replacing an existing 65 student preschool with a 192 student preschool. The project would generate 635 ADT with 110 trips during the AM peak hour and 116 trips during the PM peak hour.

Figure 8-1 shows the total assignment of cumulative project traffic volumes. ***Figure 8-2*** shows the Existing + Project + Cumulative projects traffic volumes.

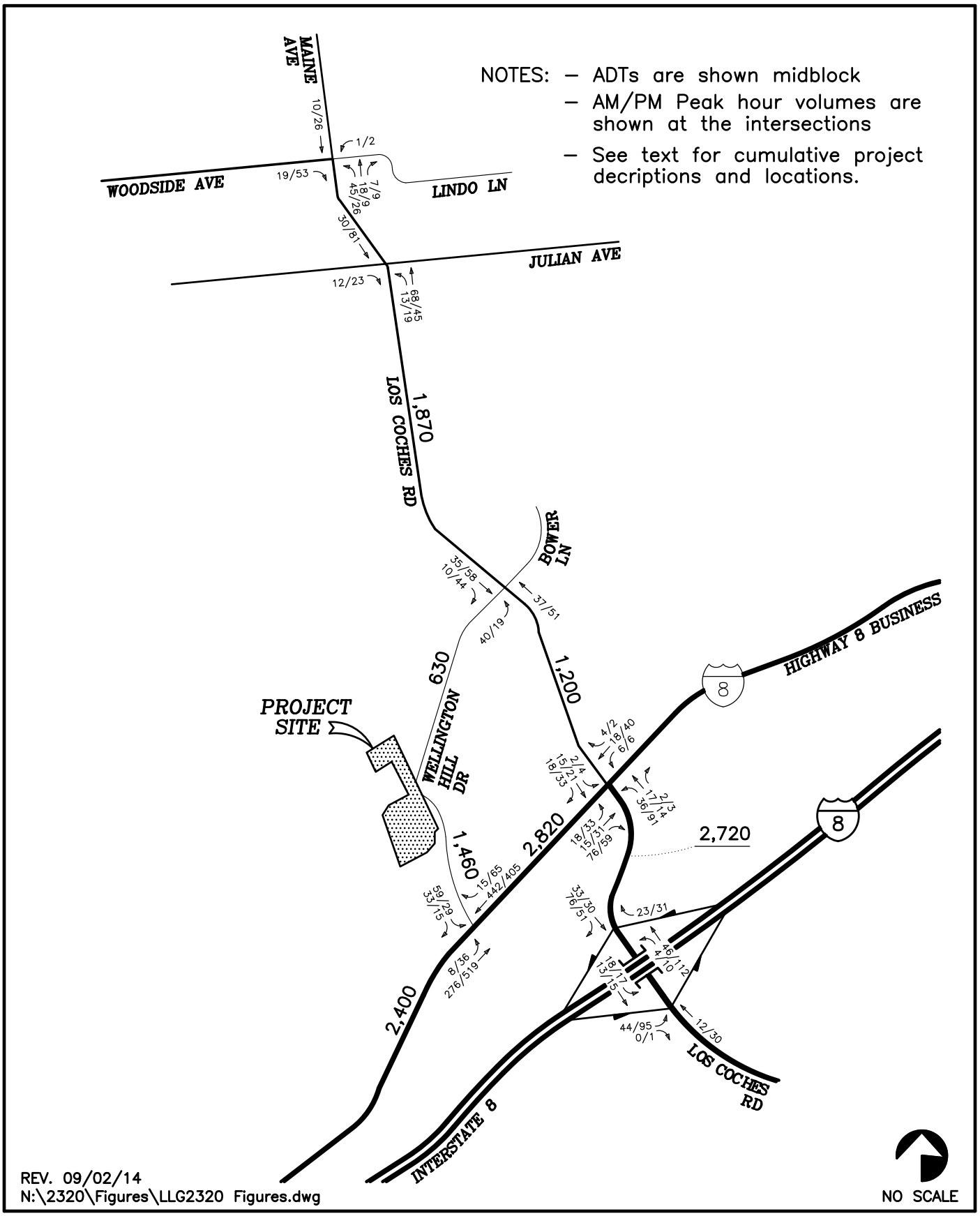

Figure 8-1

Cumulative Projects Traffic Volumes AM/PM Peak Hours & ADTs

LINSCOTT LAW & GREENSPAN engineers

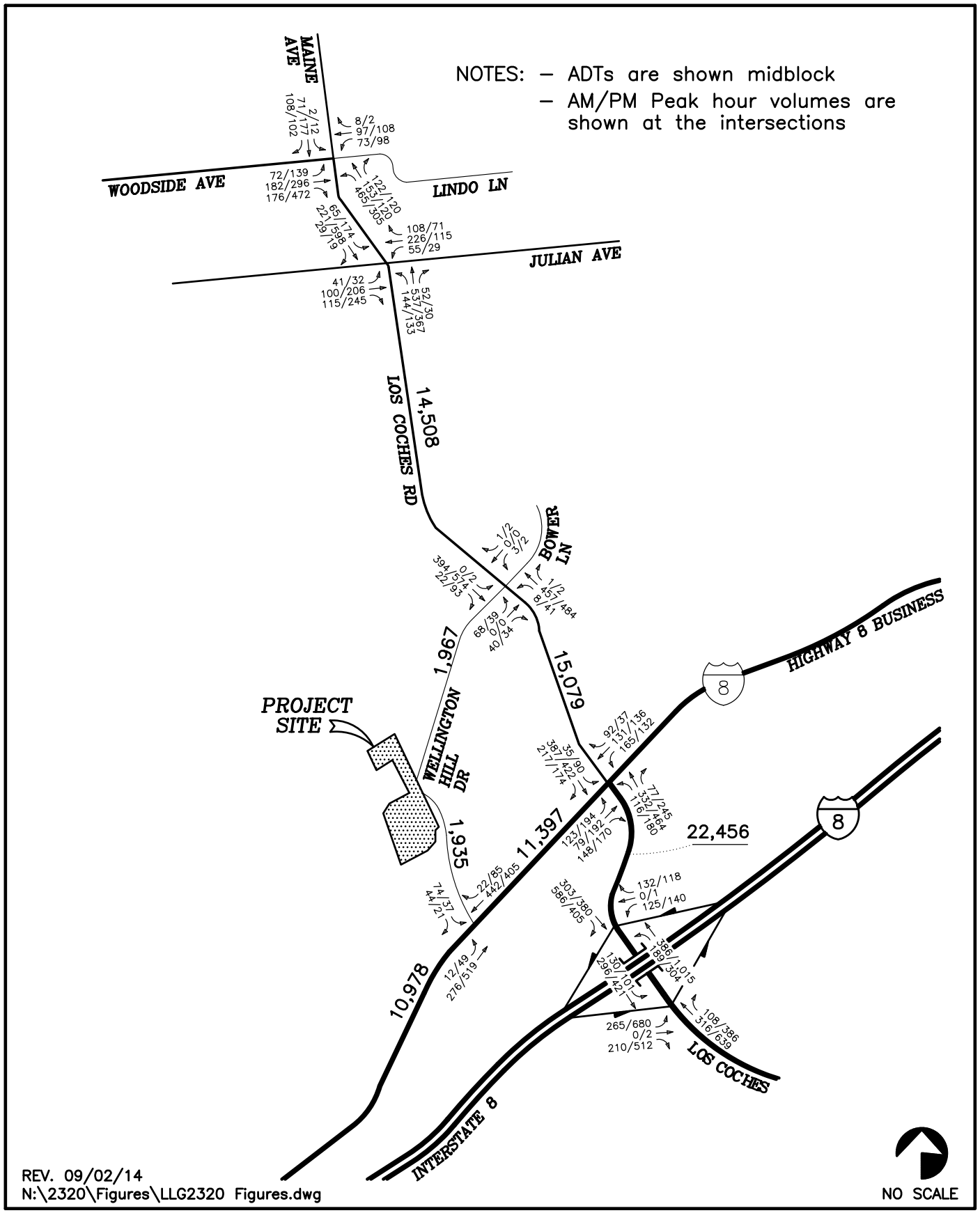

Figure 8-2

Existing + Project + Cumulative Projects Traffic Volumes AM/PM Peak Hours & ADTs

LINSCOTT LAW & GREENSPAN engineers

9.0 ANALYSIS OF NEAR-TERM SCENARIOS

The following section discusses the intersection and street segment operations for the near-term scenarios: Existing + Project and Existing + Project + Cumulative Projects.

9.1 Existing + Project Conditions

9.1.1 *Intersection Analysis*

Table 9–1 summarizes the peak hour intersection operations under Existing + Project conditions. As seen in *Table 9–1*, with the addition of project traffic, the study intersections are calculated to continue to operate at LOS D or better during the AM and PM peak hours with the exception of Woodside Avenue / Maine Street which is calculated to continue to operate at LOS E during the PM peak hour.

Based on the County of San Diego's significance criteria, ***no significant direct impacts*** were identified.

Appendix E contains the Existing + Project intersection analysis worksheets.

9.1.2 *Street Segment Operations*

Table 9–2 summarizes the Existing + Project roadway segment operations. As seen in *Table 9–2*, with the addition of project traffic, the study segments are calculated to continue to operate acceptably with the exception of Los Coches Road between Wellington Hill Drive and Highway 8 Business, which is calculated to continue to operate at LOS E.

Based on the County of San Diego's significance criteria, ***no significant direct impacts*** were identified.

9.1.3 *Caltrans ILV Analysis*

Table 9–3 summarizes the Existing + Project ILV analysis for the State owned signalized study area intersections. As seen in ***Table 9–3***, both intersections are calculated to operate "under capacity" during both the AM and PM peak hours.

Appendix G contains the Existing + Project intersection ILV analysis worksheets.

9.2 Existing + Project + Cumulative Projects

9.2.1 *Intersection Analysis*

Table 9–1 summarizes the peak hour intersection operations under Existing + Project + Cumulative Projects conditions. As seen in *Table 9–1*, with the addition of the proposed project and cumulative projects traffic, the study intersections are calculated to continue to operate at LOS D or better during the AM and PM peak hours with the exception of Woodside Avenue / Maine Street which is calculated to operate at LOS F during the PM peak hour.

Based on the County of San Diego's significance criteria, a ***significant cumulative impact*** is identified at the intersection of Woodside Avenue / Maine Street during the PM peak hour. Mitigation measures for this impact are discussed in detail in *Section 11*.

Appendix F contains the Existing + Project + Cumulative Projects intersection analysis worksheets.

9.2.2 *Street Segment Operations*

Table 9–2 summarizes the Existing + Project + Cumulative Projects roadway segment operations. As seen in *Table 9–2*, with the addition of proposed project and cumulative projects traffic, the following segments are calculated to operate at LOS E:

- Los Coches Road: Woodside Avenue to Wellington Hill Drive
- Los Coches Road: Wellington Hill Drive to Highway 8 Business
- Highway 8 Business: Pepper Drive to Project Access
- Highway 8 Business: Project Access to Los Coches Road

Based on the County of San Diego's significance criteria, ***significant cumulative impacts*** are identified along all of the roadway segments listed above. Mitigation measures for these impacts are discussed in detail in *Section 11*.

9.2.3 *Caltrans ILV Analysis*

Table 9–3 summarizes the Existing + Project + Cumulative Projects ILV analysis for the State owned signalized study area intersections. As seen in *Table 9–3*, both intersections are calculated to operate "under capacity" during both the AM and PM peak hours.

Appendix G contains the Existing + Project + Cumulative Projects intersection ILV analysis worksheets.

TABLE 9–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Existing + Project + Cumulative Projects			Impact Type
			Delay[a]	LOS[b]	Delay	LOS	Δ[c]	Delay	LOS	Δ[c]	
1. Woodside Avenue / Maine Avenue	Signal	AM	38.2	D	39.8	D	1.6	40.6	D	2.4	None
		PM	71.9	E	73.4	E	1.5	**85.7**	**F**	**13.8**	**Cumulative**
2. Los Coches Road / Julian Avenue	Signal	AM	33.2	C	33.4	C	0.2	37.1	D	3.9	None
		PM	35.0	C	35.2	D	0.2	40.8	D	5.8	None
3. Los Coches Road / Wellington Hill Drive	TWSC[d]	AM	12.6	B	12.7	B	18	14.5	B	58	None
		PM	13.6	B	14.2	B	10	17.0	C	29	None
4. Los Coches Road / Highway 8 Business	Signal	AM	22.8	C	24.0	C	1.2	27.3	C	4.5	None
		PM	28.7	C	34.6	C	5.9	50.3	D	21.6	None
5. Los Coches Road / I-8 WB Ramps	Signal	AM	16.0	B	16.1	B	0.1	16.2	B	0.2	None
		PM	15.1	B	15.2	B	0.1	15.4	B	0.3	None
6. Los Coches Road / I-8 EB Ramps	Signal	AM	16.2	B	16.3	B	0.1	16.8	B	0.6	None
		PM	19.5	B	19.7	B	0.2	21.2	C	1.7	None
7. Highway 8 Business / Project Access[f]	OWSC[e]	AM	-	-	12.8	B	26	18.1	C	118	None
		PM	-	-	13.7	B	14	22.5	C	58	None

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes a project-induced increase in delay (at signalized intersections) or in trips to the critical movement (at unsignalized intersections) based on County guidelines.
d. Two-Way Stop Controlled Intersection.
e. One-Way Stop Controlled Intersection.
f. Intersection does not exist under existing conditions.

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 9–2
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS C)[a]	Existing		Existing + Projects			Existing + Project + Cumulative Project			Impact Type
		ADT[b]	LOS[c]	ADT	LOS	Δ[d]	ADT	LOS	Δ[d]	
Wellington Hill Drive[e]										
West of Los Coches Road	4,500	1,020	-	1,337	-	317	1,967	-	947	None
Los Coches Road										
Woodside Avenue to Wellington Hill Drive	19,000	12,400	D	12,638	D	238	**14,508**	**E**	**2,108**	**Cumulative**
Wellington Hill Drive to Highway 8 Business	19,000	13,800	E	13,879	E	79	**15,079**	**E**	**1,279**	**Cumulative**
Highway 8 Business to I-8	34,200	19,380	B	19,736	B	356	22,456	B	3,076	None
Highway 8 Business										
Pepper Drive to Project Access	16,200	8,380	D	8,578	D	198	**10,978**	**E**	**2,598**	**Cumulative**
Project Access to Los Coches Road	16,200	8,300	D	8,577	D	277	**11,397**	**E**	**3,097**	**Cumulative**

Footnotes:

a. Capacities based on County of San Diego Roadway Classification & LOS table (See Appendix C).
b. Average Daily Traffic
c. Level of Service.
d. Δ denotes a project or project + cumulative projects induced increase in ADT based on County guidelines.
e. Wellington Hill Drive is a non-Circulation Element Residential Street. The capacity listed for this roadway is the recommended design capacity as shown on the County of San Diego Roadway Classification & LOS table. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic, as discussed further in *Section 5* of this report.

TABLE 9–3
NEAR TERM ILV OPERATIONS

Intersection	Peak Hour	Existing		Existing + Project		Existing + Project + Cumulative Projects	
		ILV/Hour	Capacity	ILV/Hour	Capacity	ILV/Hour	Capacity
5. Los Coches Road / I-8 WB Ramps	AM	805	Under Capacity	820	Under Capacity	907	Under Capacity
	PM	865	Under Capacity	876	Under Capacity	968	Under Capacity
6. Los Coches Road / I-8 EB Ramps	AM	467	Under Capacity	485	Under Capacity	553	Under Capacity
	PM	1,027	Under Capacity	1,057	Under Capacity	1,169	Under Capacity

SERVICE LEVELS	ILV / HOUR TOTAL
Under Capacity	<1,200
Near Capacity	1,200 – 1,500
Over Capacity	>1,500

10.0 PROJECT ACCESS

Access to the project site will be provided via the existing Wellington Hill Drive and a new public roadway which will connect to Highway 8 Business. The new public roadway shall be constructed to County standards with adequate sight distance, and, at a minimum, provide the following lane geometry:

- Southbound Movement (Project Access): One shared right-turn/left-turn lane (20-feet wide)
- Eastbound Movement (Highway 8 Business): One thru lane and one dedicated left-turn lane
- Westbound Movement (Highway 8 Business): One shared thru / right-turn lane

It should be noted that with this lane configuration, the Highway 8 Business access point is calculated to operate at acceptable levels of service (LOS C or better) for all scenarios analyzed.

11.0 SIGNIFICANT IMPACTS / MITIGATION MEASURES

Following is a description of the calculated significant impacts for the project based on the established Significance Criteria along with recommendations for mitigation measures at the impacted locations.

11.1 Significant Impacts

The following intersection and street segments were determined to be cumulatively impacted by the project using the established significance criteria and based on the results of *Tables 9-1* and *9-2*.

a. Woodside Avenue / Maine Avenue
b. Los Coches Road: Woodside Avenue to Wellington Hill Drive
c. Los Coches Road: Wellington Hill Drive to Highway 8 Business
d. Highway 8 Business: Pepper Drive to Project Access
e. Highway 8 Business: Project Access to Los Coches Road

11.2 Mitigation Measures

Under Existing + Project + Cumulative projects conditions, the project is calculated to have significant cumulative impacts at one study intersection and along four study street segments. The following summarizes the recommended mitigation measures.

a-e. The payment of the required Traffic Impact Fee (TIF) would mitigate all of the cumulative impacts to below a level of significance.

The County Board of Supervisors adopted a TIF ordinance, which provides a mechanism for the County to obtain funding to mitigate anticipated cumulative transportation/circulation impacts, by requiring payment of an impact fee designated in the ordinance. The County updated the TIF Program in December 2012. Under the provisions of State CEQA Guidelines section 15130(a)(3), payment of the fee "to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact" allows an EIR to "determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant." The project will be conditioned to pay a fair-share contribution to the TIF Program.