

FOCUSED TRAFFIC IMPACT STUDY

For

Tractor Supply Company
Lakeside, CA.

Prepared For The County of San Diego

Submitted To:

Woodcrest Homes, Inc.
P.O. Box 823
Ramona, CA 92065

Prepared By:

Darnell & Associates, Inc.
4411 Mercury Street, Suite 105B
San Diego, CA 92111

Signature: _____

Date Signed: _____

Revised: December 18 2014

Revised: August 28, 2014

Revised: July 22, 2014

Revised: May 15, 2014

Revised: March 21, 2014

Original: October 21, 2013

Darnell & ASSOCIATES, INC.

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

December 18, 2014

Mr. Steve Powell
Woodcrest Homes, Inc.
P.O. Box 823
Ramona, CA 92065

D&A Ref. No: 130706

Subject: Revised Traffic Impact Study for the Proposed Tractor Supply Store located on the north side of Olde Highway 80 between Pecan Park Lane West and Pecan Park Lane East in the Lake Jennings Area of San Diego County.

Dear Mr. Powell;

In accordance with your authorization, Darnell & Associates, Inc. (D&A) has revised this traffic impact study assessing the impacts associated with the proposed Tractor Supply Company Project located on the north side of Olde Highway 80 between Pecan Park Lane West and Pecan Park Lane East in the Lake Jennings Area of San Diego County to respond to the County of San Diego comments dated May 15, 2014 and Caltrans comments dated August 20, 2014.

The traffic study analyzes the traffic impacts related to the proposed project on the surrounding roadways and intersections under the following conditions: existing and existing plus project conditions.

The site plan for the project has been revised to move the projects westerly driveway 30 feet westerly to accommodate the proposed signalized intersection for the proposed commercial center located on the south side of Olde Highway 80 between Lake Jennings Park Road and the future Rios Canyon Road.

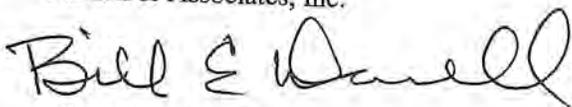
If you have any questions, please feel free to contact this office.

Sincerely,

DARNELL & ASSOCIATES, INC.

Sincerely,

Darnell & Associates, Inc.



Bill E Darnell, P.E.
Firm Principal
RCE 22338



Date Signed: 12-18-2014

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TRAFFIC IMPACT STUDY
FOR
TRACTOR SUPPLY COMPANY PROJECT
IN THE COUNTY OF SAN DIEGO

Submitted To:

Woodcrest Homes, Inc.
P.O. Box 823
Ramona, CA 92065

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December 18, 2014

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SECTION I — INTRODUCTION

PROJECT DESCRIPTION

The applicant proposes to develop the Tractor Supply Company (TSC) located on the north side of Olde Highway 80 between Pecan Park Lane West and Pecan Park Lane East in the Lake Jennings Area of San Diego County. A vicinity map is provided on Figure 1.

The Tractor Supply Company is a retail farm and ranch store chain that offers a number of products for home improvements, agriculture, lawn and garden maintenance, livestock, equine pet care and a limited line of clothing/footwear. A schematic site plan is provided on Figure 2 and shows 19,169 square foot building with 17,957.5 square feet of outdoor display/storage areas which include 13,337.5 square feet within enclosed perimeters a 1,250 square foot hay barn building and 4,620 square feet of unenclosed outdoor display area.

The project has direct impacts on the segments of Lake Jennings Park Road between Blossom Valley Road and I-8 Eastbound Ramps. The project does not have any direct impacts at the study area intersections.

CONGESTION MANAGEMENT PROGRAM

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation, and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. The original CMP for the San Diego region was adopted in 1991 and has been updated periodically as an element of the Regional Transportation Plan (RTP). One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants, and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process. Authority for local land use decisions including project approvals and any required mitigation remains the responsibility of local jurisdictions.

Prior to the fall of 2009, the criteria for which a project was subject to the regulations as set forth in the CMP were determined by the trip generation potential for the project. The threshold for the CMP analysis was 2,400 average daily trips (ADT) or 200 peak hour trips. Build out of the proposed project does not exceed the trip a threshold established for CMP analysis and is therefore not subject to CMP guidelines for traffic impact studies. It should be noted that in the fall of 2009 SANDAG decided to opt out of the CMP.

SURROUNDING PROJECTS

Pursuant to the County comments dated May 15, 2014 we investigated and met with the applicant for the Market Place Project to exchange traffic data. Based on our meeting we concluded that we did not need to include the Market Place project since the site was previously approved for residential condos and its development would not impact the Tractor Supply Company Project. Also since the Market Place project is now proposed as a commercial center and will require a General Plan Amendment and other County approvals it has not been included in this traffic study.

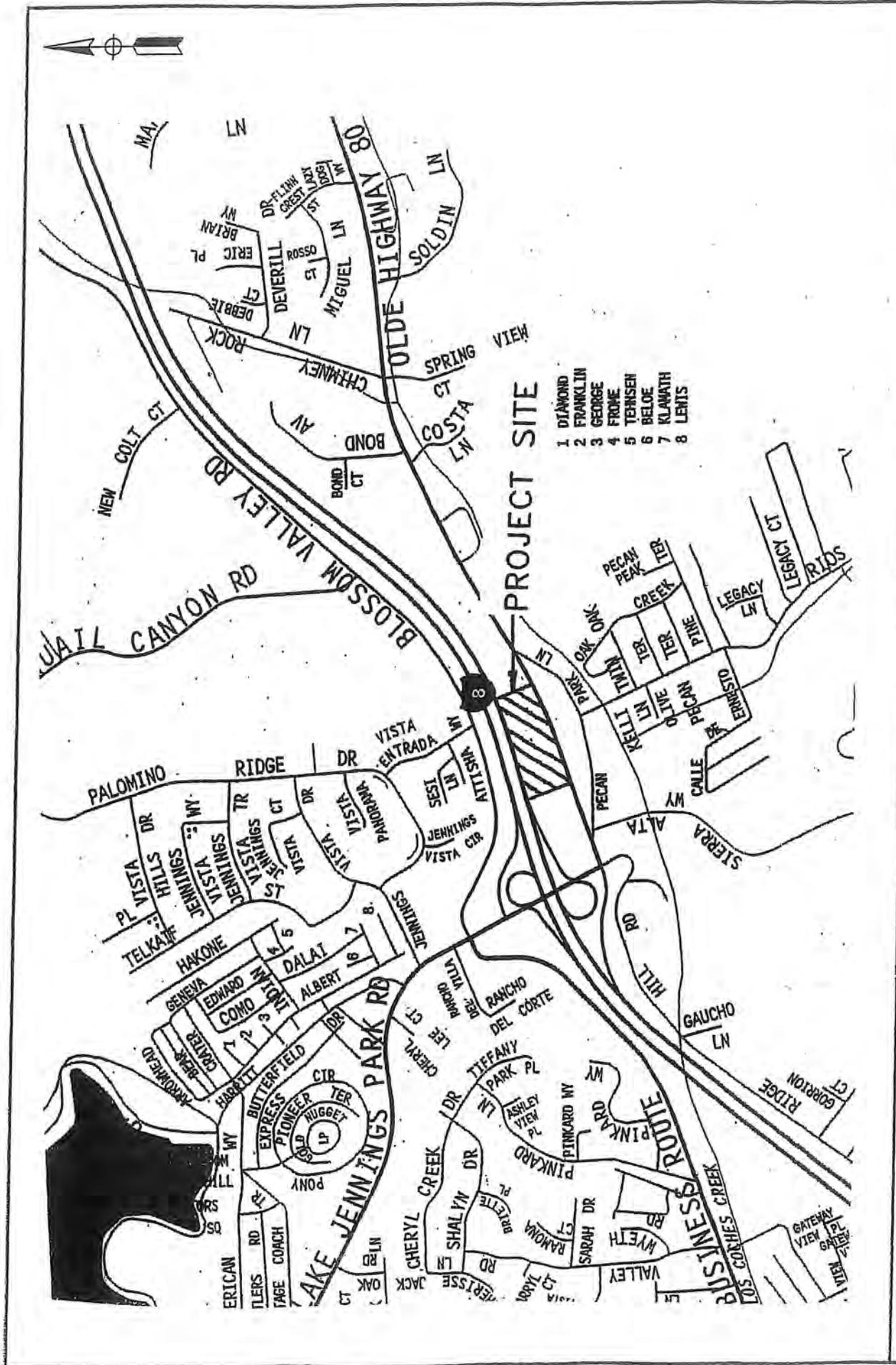
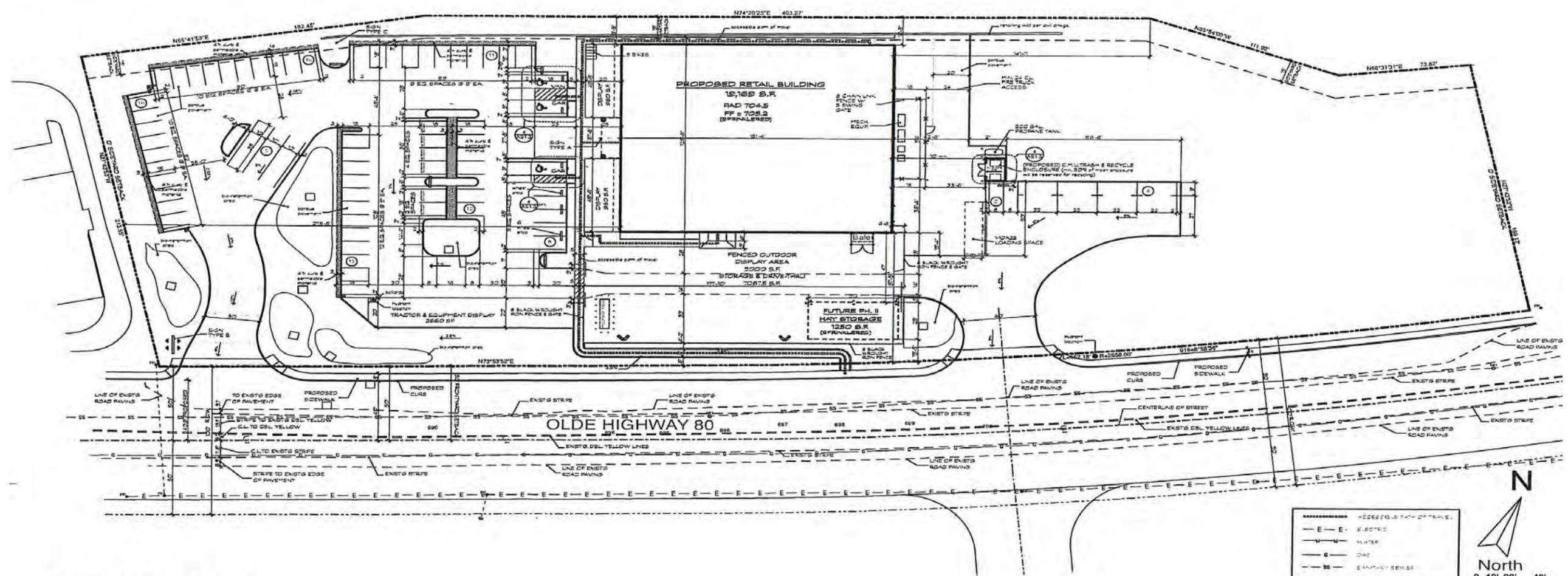


FIGURE 1
VICINITY MAP

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INTERSTATE 8



SITE PLAN
 SCALE: 1" = 30'



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FIGURE 2
 Site Plan

SCENARIOS STUDIED

For purposes of this analysis, the following scenarios are included:

Existing (2013) Conditions refers to that condition which exists on the ground today (2013), including existing traffic and existing lane configurations at roadway segments.

Existing (Year 2013) Plus Project Conditions refers to those conditions which includes the existing traffic volumes and lane configurations plus the traffic generated by the proposed project.

LEVEL OF SERVICE

Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection is measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds. Table 1 shows the delay and ADT ranges that are equivalent to each Level of Service.

In general, the region-wide goal for an acceptable Level of Service on all roadway segments and intersections is “D.”

Table 1 — Level of Service Ranges			
Level of Service	Roadway Segments - Average Daily Traffic (ADT) Volume ¹	Signalized Intersections - Delay (Seconds/Vehicle) ²	Unsignalized Intersections - Delay (Seconds/Vehicle) ²
A	Less Than 1,900	Less Than or Equal to 10.0	Less Than or Equal to 10.0
B	1,901 to 4,100	10.1 to 20.0	10.1 to 15.0
C	4,101 to 7,100	20.1 to 35.0	15.1 to 25.0
D	7,101 to 10,900	35.1 to 55.0	25.1 to 35.0
E	10,901 to 16,200	55.1 to 80.0	35.1 to 50.0
F	Greater Than 16,200	Greater than 80.0	Greater than 50.0

¹ The volume ranges are based on the County of San Diego Circulation Element of a Light Collector, the average daily volume ranges for the other roadway classifications has been provided in Appendix A.
² The delay ranges shown are based on the 2000 Highway Capacity Manual (HCM).

According to page XII 4-16 and XII-4-17 of the San Diego County General Plan Public Facility Element “A LOS ‘C’, which allows for stable traffic flow with room to maneuver, is generally an accepted level to strive for in new development. However, there are some cases where development cannot achieve a LOS ‘C’ on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS ‘C’. In these cases a Level of Service ‘D’ is acceptable on off-site roadways.”

ANALYSIS METHODOLOGY

The roadway segment daily LOS was determined by comparing the average daily traffic (ADT) volumes under all traffic conditions to the capacity of the roadway according to its roadway cross-section and classification. For the purpose of this report, the daily traffic volumes of the roadway segments in the vicinity of the project were compared to the County of San Diego Level of Service classification thresholds. The daily (24 hour) traffic count sheets, a copy of the “Summary of County of San Diego Public Road Standards” are included in Appendix A.

Synchro, Version 8, was utilized to analyze the morning and afternoon peak hour conditions of the intersections in the project vicinity. The signalized intersection methodology defines LOS based on delay using variables such as lane configuration, traffic volumes, and signal timings. The unsignalized intersection methodology defines LOS based on the longest delay experienced by any single movement. Since the Synchro program calculates the average delay per vehicle, there may be instances where the Synchro analysis will show a reduction in delay with the addition of more traffic. This phenomenon occurs when the additional traffic is added to a movement that experiences a shorter amount of delay, thereby decreasing the intersection’s average delay per vehicle (i.e. a larger amount of vehicles will have to wait a shorter time while only a few vehicles have to wait an extended period of time). It should be noted that the Synchro program is based on the 2000 Highway Capacity Manual (HCM).

REPORT ORGANIZATION

Following this introduction, Section II introduces the existing base conditions. Section III discusses trip generation and trip distribution associated with the proposed project. Section IV provides analysis of project’s traffic impacts under existing with project conditions and address cumulative impacts. Section V summarizes the projects access and on-site circulation. Section VI summarizes the projects Mitigation Measures for Direct and Cumulative Impacts. Section VII summarizes the report findings and conclusions.

SECTION II — EXISTING CONDITIONS

This section of the traffic study is intended to assess the existing conditions of the roadways and intersections within the vicinity of the project to determine travel flow and/or delay difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition which is used to assess the other scenarios discussed in this report.

Darnell & Associates, Inc. conducted a field review of the area surrounding the project in August 2013. Figure 3 depicts the existing roadway and intersection geometrics in the project vicinity, respectively and Figure 4 presents the existing daily and peak hour traffic volumes.

KEY ROADWAY SEGMENTS

The key segments analyzed in the study area are identified as follows:

Olde Highway 80/Business Route 8: is built as an east/west two-lane circulation element roadway with a capacity equivalent to that of a Light Collector (10,900 average daily trips (ADT) at level of service (LOS) D). The section of the roadway known as Business Route 8 is located on the north side of Interstate 8 and extends west from Lake Jennings Park Road/Blossom Valley Road. The section of roadway known as Olde Highway 80 is located on the south side of Interstate 8 and extends eastward from Lake Jennings Park Road. On the County Circulation Element, both segments are identified as Olde Highway 80. Each segment located on the north side of Interstate 8 has the County Circulation Element classification of a 4.1 B Major Road with bike lanes (capacity of 33,400 ADT at LOS D) and the segment located on the south side of the Interstate 8 is classified as a 4.1B Major Road with bike lanes (capacity of 33,400 ADT at LOS D).

Lake Jennings Park Road: is currently constructed as a north/south two-lane undivided 48 to 65 foot wide circulation element roadway with bike lanes and a posted speed of 40 miles per hour. Lake Jennings Park Road widens between the Interstate 8 westbound ramps and Olde Highway 80 to provide left and/or right turn lanes at the intersections. The current cross-section of Lake Jennings Park Road is equivalent to that of a Light Collector Road with a capacity of 10,900 ADT at LOS D. The County Circulation Element identifies Lake Jennings Park Road to have an ultimate classification of a 4.1B Major Road with bike lanes, and a capacity of 33,400 ADT at LOS D. It should be noted that Lake Jennings Park Road between the I-8 eastbound on/off ramps is improved to provide pavement equivalent to a 4-Lane Collector Street with curb and gutter.

ROADWAY SEGMENT DAILY TRAFFIC

Twenty-four (24) hour count data at key roadway segments were collected on typical weekdays in January 2014. Count Summary Sheets can be found in Appendix A. The existing daily traffic volumes are illustrated in Figure 4.

KEY INTERSECTIONS

Figures 3 and 4 provide intersection configurations and traffic control for the key intersections. The key intersections analyzed in the study area are identified below:

- Lake Jennings Park Road/Blossom Valley Road - Business Route 8 (Signalized);
- Lake Jennings Park Road/Interstate 8 (I-8) Westbound off ramp (One-Way Stop-Controlled);
- Lake Jennings Park Road/Interstate 8 (I-8) Eastbound off ramp-Olde Highway 80 (All-Way Stop-Controlled);

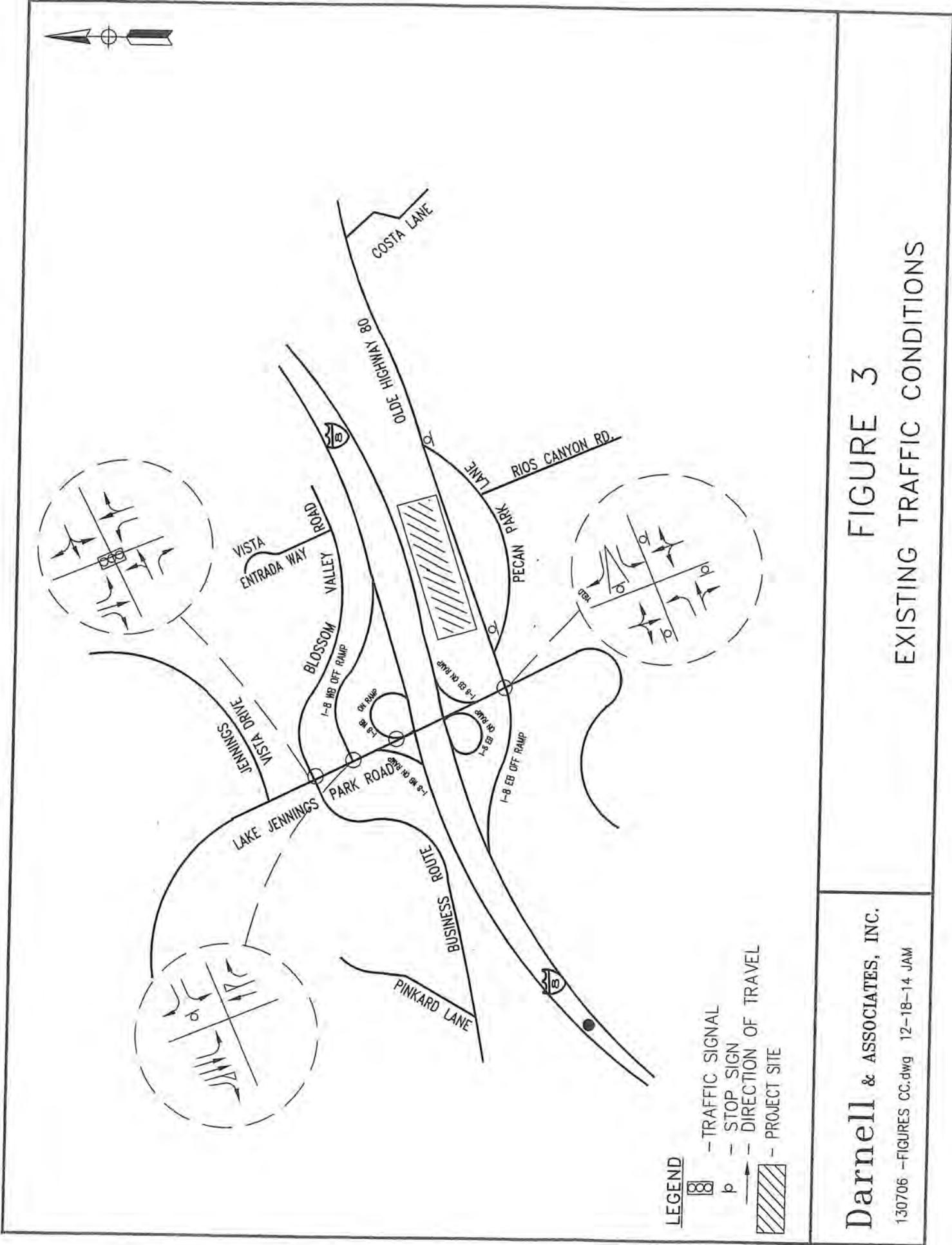


FIGURE 3
EXISTING TRAFFIC CONDITIONS

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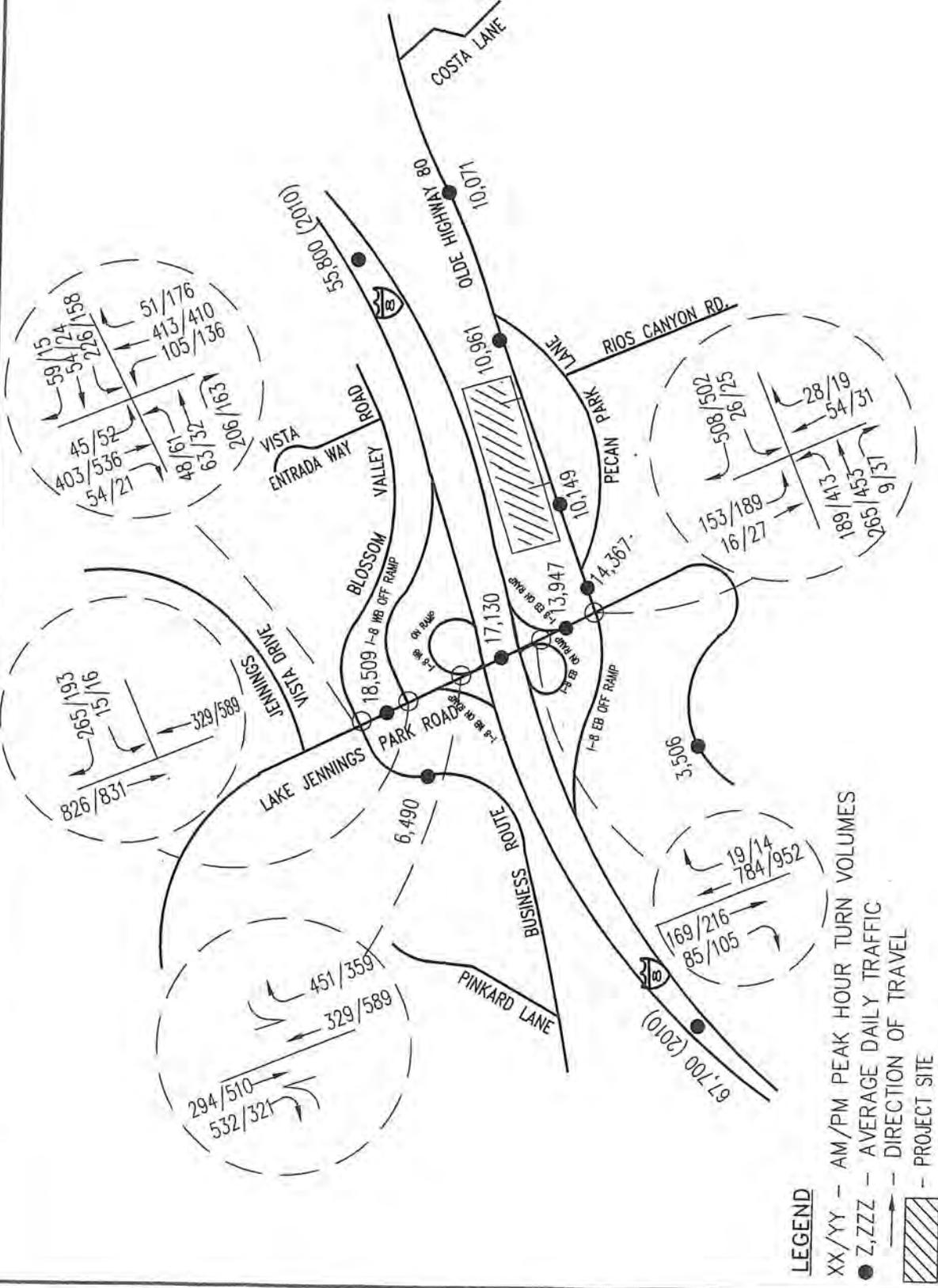


FIGURE 4
EXISTING 2014 TRAFFIC VOLUMES

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INTERSECTION TRAFFIC COUNTS

Morning and afternoon peak hour turn counts were collected at all key intersections, on a typical weekday in January 2014. The existing peak hour traffic counts were previously depicted on Figure 4. A copy of the traffic count sheets are provided in Appendix A. The January 2014 counts were obtained from the Traffic Consultant preparing the Market Place project located on the south side of Olde Highway 80.

EXISTING LEVEL OF SERVICE CONDITIONS

Existing – Roadway Segments

The existing daily roadway segment levels of service are summarized in Table 2. As can be seen in Table 2 all roadway segments analyzed currently operate at LOS E or worse except Olde Highway 80 between West Pecan Park to East Pecan Park operates at LOS E.

Table 2 - Existing Roadway Segment Level of Service Summary				
Roadway Segment	Classification	Capacity (a)	ADT	LOS
Lake Jennings Park Road				
-Blossom Valley to I-8 WB off ramp	Town Collector	13,500	18,509	E
-I-8 WB on ramp to I-8 EB on ramp	Light Collector	10,900	17,130	F
-I-8 EB on ramp to Olde Highway 80	Light Collector	10,900	13,947	E
Olde Highway 80				
-Lake Jennings Park to W. Pecan Park	Light Collector	10,900	14,367	E
-W. Pecan Park to E. Pecan Park	Light Collector	10,900	10,961	E
(a) Capacity is based on upper limit of LOS D per County of San Diego Level of Service Thresholds ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; LOS = Level of Service				

Existing – Intersection Conditions

The existing levels of service are summarized in Table 3. Synchro analysis worksheets can be found in Appendix C. As can be seen in Table 3, the Lake Jennings Park Road/Interstate 8 Eastbound off Ramp and Olde Highway 80/W Pecan Park Lane intersections will operate at a LOS B in the AM peak hour and operate at a LOS C in the PM peak hour. All other analyzed intersections operate at LOS D or better.

Table 3 - Existing Intersection Level of Service Summary					
Intersection	Critical Movement	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Lake Jennings Park Rd @ Blossom Valley Rd (sig)	Int	38.6	D	40.1	D
Lake Jennings Park Rd @ I-8 WB Off Ramp (OWSC)	WB	14.9	B	19.0	C
Lake Jennings Park Rd @ I-8 EB Off Ramp (AWSC)	EB	14.1	B	21.9	C
	WB	31.2	B	9.0	A
	NB	11.4	B	9.6	A
	SB	13.8	B	12.6	B
	Int	21.2	B	16.3	C
sec/veh = seconds of delay per vehicle; LOS = Level of Service; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound; Int=Intersection					

SECTION III — PROJECT RELATED CONDITIONS

TRIP GENERATION

The trip generation potential for the project was based on daily and peak hour trip generation rates 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. The proposed project is a commercial project and can be considered a blend of Specialty Retail, Home Improvement and Garden Supply. We examined each of the rates, compared them to the project, and determined that the proposed project is most clearly represented by the Specialty Retail Classification. The SANDAG rate of 40 trips per thousand square feet was identified for this analysis. The project also includes 17,957.5 square feet of enclosed storage and display area, 1,250 square foot hay barn building and 4,620 square feet of unenclosed storage area.

Due to the unique trip generation characteristics of the project, County staff agreed that the Specialty Retail land use would most likely represent the traffic generated by the project. Trip rates for the Specialty Retail land use were applied to the 19,169 sf building area to estimate the daily and peak hour traffic volumes. For the 17,957.5 square feet of storage and display the SANDAG Warehouse Rate of 5.0 trips per 1,000 feet was used Table 4 summarizes the trip generation rates and calculations for the proposed project.

Table 4 summarizes the trip generation rates for the project. Table 5 summarizes the trip generation calculations for the proposed project using the full driveway rates. As shown on Table 5, the driveway trips (those trips that enter the project site) for the entire project is estimated to generate 857 daily trips with 35 in the morning peak hour and 83 in the evening peak hour at project buildout. It should be noted that no pass by or diverted trip credits were used to reduce the project trip generation.

TRIP DISTRIBUTION/TRIP ASSIGNMENT

The general trip distribution to/from the project site was based on existing travel patterns in the study area and on local knowledge of access to/from I-8. Trip distribution patterns for project traffic were estimated based on previous studies for projects in the area and the applicant anticipated service area of 2 to 5 mile radius.

Figure 5 illustrates the general overall trip distribution percentages for the proposed project. Project trips were then assigned to the roadway network using the general distribution pattern provided in Figure 5. Figure 6 presents the project traffic.

STUDY AREA

To determine the study area for the project D&A utilized the County of San Diego's criteria which recommends the inclusion of all transportation facilities that receive 25 or more peak hour trips from the proposed project.

Based on the County's criteria and review of project traffic presented in Figure 6, the study area for each scenario was determined to include:

- Lake Jennings Park Road/Blossom Valley Road;
- Lake Jennings Park Road/Interstate 8 (I-8) Westbound off ramp;
- Lake Jennings Park Road/Interstate 8 (I-8) Eastbound off ramp-Olde Highway 80; and
- Olde Highway 80/Project Access Drives.

Table 4 - Trip Generation Rates for Tractor Supply Project

Table 4 - Trip Generation Rates for Tractor Supply Project								
Land Use	Unit	Trip Generation Rates						
		Daily	AM Peak Hour			PM Peak Hour		
			Total % of Daily	% In	% Out	Total % of Daily	% In	% Out
Specialty Store	KSF	40 00	3%	60%	40%	9%	50%	50%
Storage/Display	KSF	5 0	13%	70%	30%	15%	40%	60%
KSF =1,000 square feet; Storage/Display KSF=2.0								

Table 5 - Tractor Supply Project Trip Generation Summary

Table 5 - Tractor Supply Project Trip Generation Summary									
Land Use	# of Units	Unit	Total Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
Specialty Store	19,169	KSF	767	23	16	7	69	35	34
Storage/Display	17,957.5	KSF	90	12	8	4	14	6	8
Total Project Trips		KSF	857	35	24	11	83	41	42
KSF =1000 square feet;									

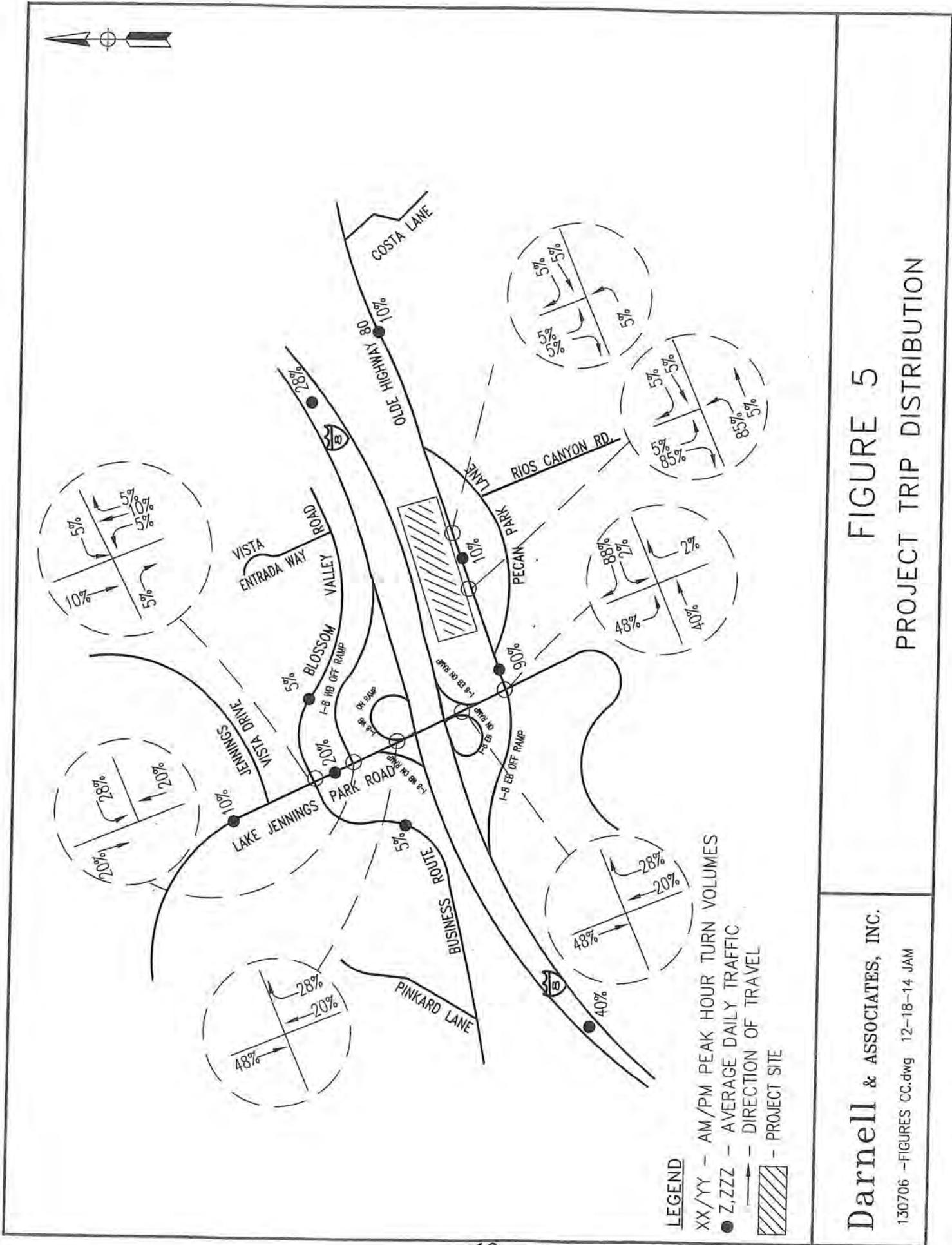
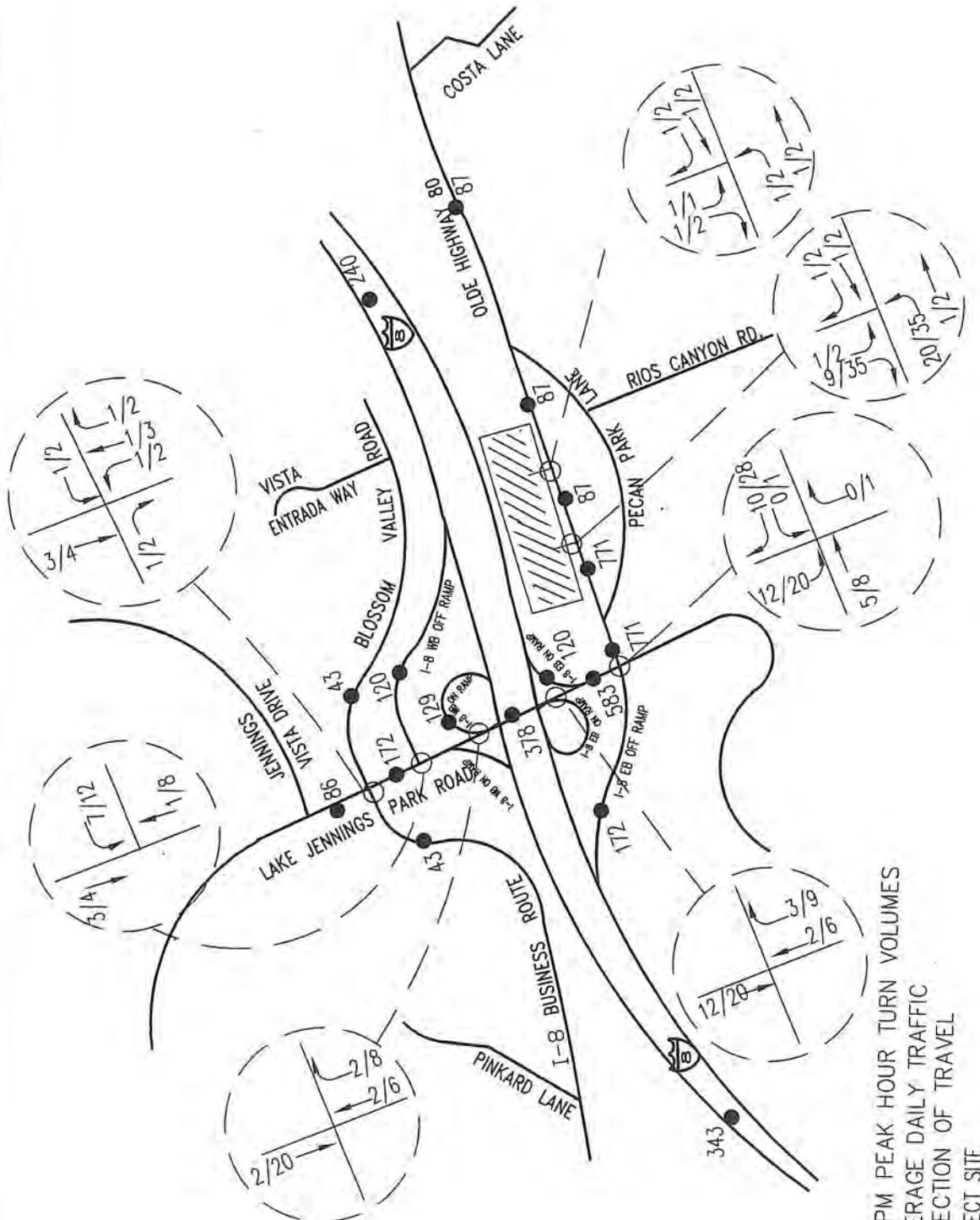


FIGURE 5
PROJECT TRIP DISTRIBUTION

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LEGEND
 XX/YY - AM/PM PEAK HOUR TURN VOLUMES
 ● Z,ZZZ - AVERAGE DAILY TRAFFIC
 → - DIRECTION OF TRAVEL
 ▨ - PROJECT SITE

FIGURE 6
PROJECT TRAFFIC VOLUMES

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SECTION IV —PROJECT IMPACTS

POLICIES AND SIGNIFICANCE STANDARDS

The County of San Diego General Plan Mobility Element Policy M-2.1 requires development projects to 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 pursuant to the criteria specifically identified in the accompany text box (Criteria for Accepting a Road Classification with Level of Service “E”/”F”). When development is proposed on roads where a failing level of service has been accepted the policy requires feasible mitigation in the form of road improvements or a fair share contribution to a road improvement program, consistent with the Mobility Element road network.

To address project impacts the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic dated August 24, 2011 identifies criteria, guidelines and standards to determine if, a discretionary project which has a significant impact on roadways will be required, as a condition of approval, to make “improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below ‘D’ on off-site and on-site abutting County of San Diego’s Circulation Element roads. New development that would significantly impact congestion on roads at LOS ‘E’ or ‘F’, either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to ‘D’ or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines.”

LEVELS OF SIGNIFICANCE STANDARDS

The *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011* was developed to evaluate the significance of traffic impacts on roadways and intersections which are currently operating at LOS E or F. A summary of the County’s Guidelines is provided in Table 6.

Table 6 — Measures of Significant Project Impacts					
LOS	Allowable Increase on Congested Roads and Intersections				
	Intersections		Road Segments		
	Signalized	Unsignalized	2-Lane Road	4-Lane Road	6-Lane Road
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement	200 ADT	400 ADT	600 ADT
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	100 ADT	200 ADT	300 ADT

County Notes:

- A critical movement is an intersection movement (right turn, left turn, and through-movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
- 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.
- 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.
- For determining significance at signalized intersection 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.

ADT = Average Daily Traffic; LOS = Level of Service, sec = Seconds of Delay per Vehicle

Roadway Segments

As shown in Table 6, per the County’s Guidelines, “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 road segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table 6, or
- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.”

As discussed on pages 13 and 14 of the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011*, an increase of the daily thresholds established for roadway segments operating at LOS E would result in only one additional car every 2.4 minutes per lane while the thresholds established for roadway segments operating at LOS F would result in only one additional car every 4.8 minutes. Therefore, the thresholds identified in Table 6, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact on the roadway.

The County guidelines also states that “For large projects, controversial projects and/or projects which are preparing Environmental Impact Reports, more detailed evaluations to verify the applicability of the significance thresholds for the individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, and/or other factors.”

Two-Lane Highways

Intersection Spacing Over One (1) Mile

In the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011* the County of San Diego established a higher capacity and a higher impact significance level for two-lane highways (such as State Route 76) with signalized intersection spacing over one mile. Table 7 provides a summary of the level of service criteria and guidelines for significance for two-lane highways with intersection spacing over one-mile.

Table 7 — Measures of Significance on 2-Ln Hwys		
Level of Service	LOS Criteria	Impact Significance Level
E	> 16,200 ADT	>325 ADT
F	> 22,900 ADT	>225 ADT

Note: Where detailed data is available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual

Intersection Spacing Less Than One (1) Mile

“Similar to the experience of drivers in urban areas with closely space intersections, the functionality of two-lane highway conditions with signalized intersection spacing under one-mile becomes constrained not due to the segment capacity but the intersection operations. Therefore the assessment of operates of intersection on two-lane highways shall be guided by a Level of Service standard. Level of Service for purposes of this significance guideline is based upon the overall intersection operations similar - to Urban Street analysis in Chapter 15 Highway Capacity Manual.” Impacts for the two-lane highways with signalized intersection under one mile

spacing will be determined by evaluating the intersection impact criteria identified in Table 8.

Table 8 — Measures of Significance on 2-Ln Hwys w/ Signalized Intersection Spacing < 1 Mile	
Level of Service	Adjacent Signalized Intersection
E	Delay of 2 seconds
F	Delay of 1 second, or 5 peak hour trips on a critical movement
Notes: – A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues which typically operate at LOS F. – 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. – 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.	

It should be noted that per the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011*, “impacts related to operational features on two-lane highways will be evaluated on a case-by-case basis based upon traffic flow patterns, geometrics, available sight distance, accident histories, and other factors.”

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 8.”
- 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.”

As discussed on page 16 of the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011*, an increase in delay of two seconds or less, the threshold established for signalized intersections operating at LOS E, “...is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low.” Thus, the increase in delay of two (2) seconds or less, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. Since small changes and disruptions to the traffic flow at a signalized intersection can have a greater effect on the overall intersection operation when the intersection is operating at LOS F, versus LOS E, a more stringent guideline of one (1) second of delay was established for intersections operating at LOS F.

The five (5)-peak hour trip threshold, established for the critical movement of a signalized intersection operating at LOS F, when spread out over the peak hour, results in an increase of one (1) vehicle every 12 minutes or 720 seconds. This increase would not be noticeable to the average driver because one additional vehicle during a 12-minute interval on average would clear the traffic signal cycles well within the 12-minute period. Further, even if all five (5) additional peak hour vehicles arrived at the same time, these trips would also, on average, clear the traffic cycle and the existing queue lengths would be re-established. Thus, the increase of five (5) peak hour trips to a critical movement at a signalized intersection, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact.

Unsignalized Intersections

“Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant impact at an unsignalized intersection as listed in Table [9] 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.”

As discussed on page 18 of the *County of San Diego Guidelines for Determining Significance, Second Modification August 24, 2011*, the addition of 20 peak hour trips to a critical movement, would result in an increase of one (1) vehicle every 3.0 minutes or 180 seconds. “Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E conditions; this would not be noticeable to the average driver and would not be considered a significant impact.” Five (5) – trips spread out over an hour would result in an increase of one (1) vehicle every 12.0 minutes or 720 seconds. “This typically exceeds the average wait time in the queue and would not be noticeable to the average driver.” (See page 18 of the County’s *Guidelines for Determining Significance* provided in Appendix A.)

EXISTING PLUS PROJECT LEVEL OF SERVICE CONDITIONS

This scenario analyzes the traffic impacts of the proposed project under existing conditions. Project traffic presented on Figure 6 was added to existing traffic volumes presented on Figure 4. The results are presented on Figure 7. The daily and peak hour turn volumes for existing plus project conditions are illustrated in Figure 7.

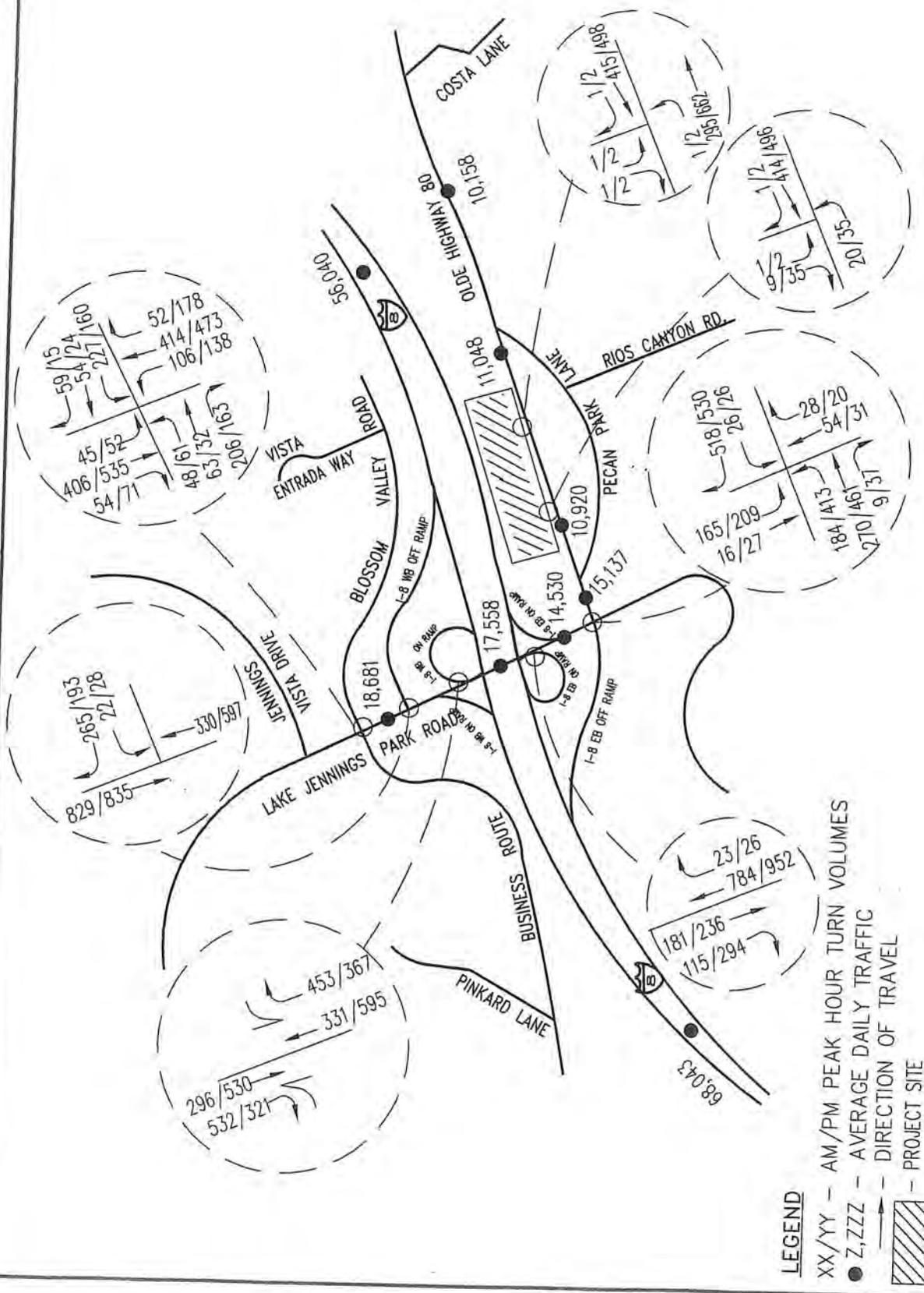
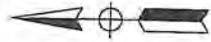


FIGURE 7
EXISTING PLUS PROJECT TRAFFIC VOLUMES

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EXISTING PLUS PROJECT CONDITIONS

Existing Plus Project – Roadway Segments

The roadway segments were analyzed with the traffic generated from the proposed project added to existing traffic volumes. The roadway segments daily levels of service are summarized in Table 9.

As can be seen in Table 9, Lake Jennings Park Road between the Blossom Valley Road and Olde Highway 80 is operating at LOS E and F. On Olde Highway 80 two (2) segments of Olde Highway 80 continue to operate at LOS E with project traffic added to the east project driveway, all roadway segments analyzed continue to operate at LOS E or F under existing plus project conditions.

On Lake Jennings Park Road, the project adds 172 to 583 trips to Lake Jennings Park Road between the Blossom Valley Road (Business Route I-8) and the I-8 Eastbound Olde Highway 80 ramp and will continue to operate at LOS E or F; therefore, the project has a significant direct impact based on the daily capacity analysis and the County's thresholds. Further analysis of the closely spaced intersections has been conducted and is discussed below.

As noted in Table 9 Lake Jennings Park Road between Blossom Valley Road (I-8 Business Route) and the westbound ramp) the adoption of the County General Plan accepted this segment to operate at LOS "F". On Olde Highway 80, the project adds 771 trips to the segments between Lake Jennings Park Road and the western project access, The addition of project traffic on Olde Highway 80 between Lake Jennings Park Road and the projects Eastern driveway results in the roadway operating at LOS D and will require mitigation.

Existing Plus Project – Intersections

Table 10 summarizes the existing plus project conditions intersection level of service summary during the AM and PM peak hours. (A copy of the Synchro worksheets for existing plus project conditions can be found in Appendix C.) As shown in Table 10, all key intersections will continue to operate at an acceptable LOS 'C' or better under existing plus project conditions. Therefore the project does not have any direct impacts on the study area intersections analyzed. This analysis also allows the conclusion that since the arterial analysis of the closely spaced intersections are operating at LOS C or better the project does not require widening of Lake Jennings Park Road, the project does not require mitigation of the direct impact identified in the roadway segment analysis discussed above. A copy of the Synchro analysis worksheets for can be found in Appendix D.

MITIGATION

Existing Plus Project – Roadway Segment Mitigation

To mitigate the projects direct impacts on Lake Jennings Park Road the applicant proposes to restripe the roadway between from south of Blossom Valley Road to the I-8 eastbound on ramp intersection. The restriping will result in enhanced striping for bike lanes and increases the majority of the 2- lane striping to 4-lanes serving the through traffic on Lake Jennings Park Road and increases access to/from the I-8 on/off ramps. For analysis purposes the capacity of the improvements is 25,000. Figure 8 presents the channelization concept with bike lanes preferred by Caltrans. Figure 8A presents the Optional Channelization Plan with enhanced bicycle and striping. This alternative may be acceptable to Caltrans subject to the County of San Diego agreeing to the maintenance of the enhanced bicycle striping. A copy of the Caltrans final comments are presented in Appendix E. Table 11 summarizes the mitigated Existing plus Project Roadway Segment LOS. As shown in Table 11, the project's direct impact mitigation measures will either improve or maintain existing LOS conditions along the impacted segments of Lake Jennings Park Road and Olde Highway 80.

To mitigate the Olde Highway 80 direct impacts the project will widen its frontage to provide improvements consistent with the 4.1B Major Road Classification and restripe Olde Highway 80 equivalent to a Town Collector Road. Figure 9 presents the recommended channelization. The channelization concept will allow the ultimate widening of Olde Highway 80 to the projects half width of a 4.1B Major Road classification adjacent to the project and locates the projects eastern access opposite the future extension of Rios Canyon Road to intercept with Olde Highway 80.

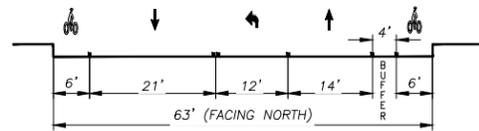
Table 9 - Existing Plus Project Roadway Segment Level of Service Summary

Roadway Segment	Classification	Capacity (a)	Existing		Two-Way Project Traffic	Existing + Project			
			A.D.T.	LOS	A.D.T.	A.D.T.	LOS	Significant (b)	Impact
Lake Jennings Park Road									
-Blossom Valley to I-8 WB off ramp	Town Collector	13,500	18,509	F	172	18,681	F	Yes	Direct
-I-8 WB on ramp to I-8 EB on ramp	Light Collector	10,900	17,130	F	378	17,558	F	Yes	Direct
-I-8 EB on ramp to Olde Highway 80	Light Collector	10,900	13,947	E	583	14,530	E	Yes	Direct
Olde Highway 80									
-Lake Jennings Park to W. Pecan Park	Town Collector	13,500	14,367	E	771	15,137	E	Yes	Direct
-W. Pecan Park to W Project Access	Town Collector	13,500	10,149	D	771	10,920	D	No	No
-W Project Access to E Project Access	Light Collector	10,900	10,961	E	87	11,048	E	No	No
-E Project Access to E Project Boundary	Light Collector	10,900	10,071	D	87	10,158	D	No	No
(a) Capacity is based on the upper limit of LOS D per the County of San Diego Level of Service Thresholds									
(b) Significance is based on the County of San Diego's Draft <i>Guidelines for Determining Significance</i>									
ADT = Average Daily Traffic; LOS = Level of Service									

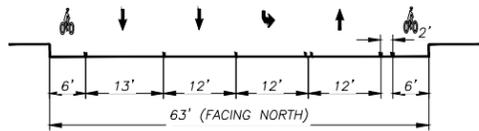
Table 10 - Existing Plus Project Intersection Level of Service Summary

Intersection	Critical Move	Existing				Existing + Project											
		AM Peak		PM Peak		AM Peak						PM Peak					
		Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Proj. Trips	Sig.?	Impact	Delay	LOS	Δ Delay	Proj. Trips	Sig.?	Impact
Lake Jennings Park Rd @ Blossom Valley Rd (sig)	Int	38.6	D	40.1	D	38.7	D	0.1	7	No	None	40.6	C	0.5	12	No	None
Lake Jennings Park Rd @ I-8 WB Off Ramp (OWSC)	WB	14.9	B	19.0	C	15.9	C	1.0	11	No	None	19.7	C	0.9	12	No	None
Lake Jennings Park Road @ I-8 EB Off Ramp (AWSC)	EB	14.1	B	21.9	C	14.6	B	0.5	27	No	None	23.4	C	1.5	58	No	None
	WB	31.2	B	9.0	A	35.4	E	4.2				9.3	A	0.3			
	NB	11.4	B	9.6	A	11.6	B	0.2				9.7	A	0.1			
	SB	13.8	B	12.6	B	14.4	B	0.6				13.3	B	0.7			
	Int	21.2	B	16.3	C	23.3	C	2.1				17.1	C	0.8			

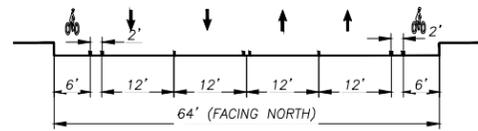
Delay = seconds of delay per vehicle; LOS = Level of Service; Δ Delay = Increase (Decrease) in delay measured in seconds/vehicle
 Sig.? = County of San Diego's *Guidelines for Determining Significance*; Impact = Direct (Dir) or Cumulative (Cum) Impact
 N/A = Not Applicable because intersection operates at LOS D or better; NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
 Proj. Trips = Denotes maximum project trips within a single critical movement (right turns exempted) See Figure 6 For Project Related Peak Hour Trips



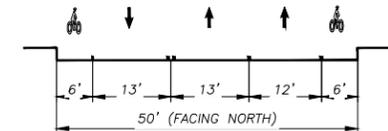
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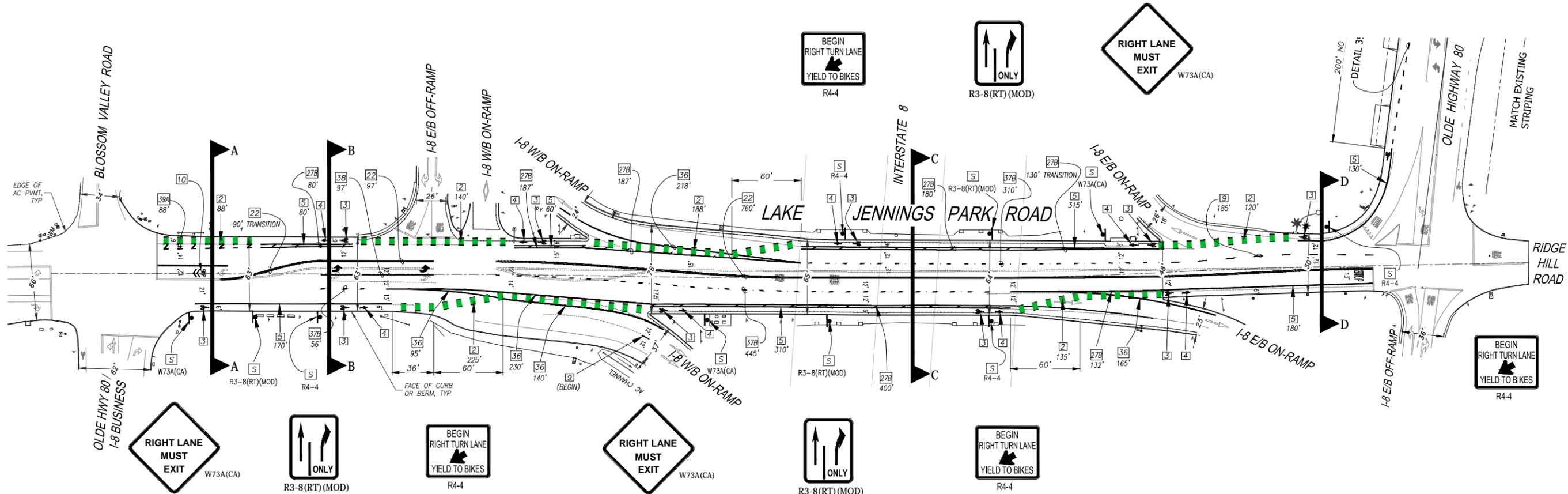
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CROSS SECTION "C"



CROSS SECTION "D"

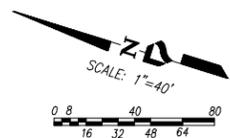


SIGNING AND STRIPING NOTES

- 22 -SIX (6') FOOT WIDE (TYPICAL) DASHED BIKE LANE PAINTED GREEN WITH SIX (6") INCH WIDE WHITE PAINTED DETAIL 39A DASHED EDGELINE STRIPING
- 3 -WHITE PAINTED BIKE LANE SYMBOL WITH PERSON (REF: CALTRANS STD DRAWING A24C)
- 4 -WHITE PAINTED BIKE LANE ARROW (REF: CALTRANS STD DRAWING A24A)
- 5 -SIX (6') FOOT WIDE (TYPICAL) BIKE LANE WITH SIX (6") INCH WIDE WHITE PAINTED DETAIL 39 BIKE LANE STRIPING (REF: CALTRANS STD DETAIL 39, DRAWING A20D)
- 9 -WHITE PAINTED DETAIL 9 DASHED STRIPING (REF: CALTRANS STD DETAIL 9, DRAWING A20A)
- 10 - WHITE PAINTED "SHARED ROADWAY BICYCLE MARKING". (REF: CALTRANS STD DRAWING A24C)
- 22 -DETAIL 22 DOUBLE YELLOW PAINTED CENTERLINE STRIPING (REF: CALTRANS STD DETAIL 22, DRAWING A20A)

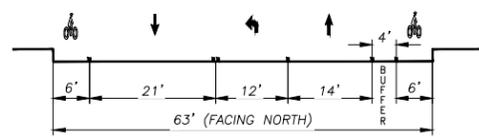
SIGNING AND STRIPING NOTES (CONTINUED)

- 27B -DETAIL 27B WHITE PAINTED RIGHT EDGELINE STRIPING PAINTED TWO (2') FOOT OFF OF THE BIKE LANE STRIPING WITH DIAGONAL STRIPES TWENTY FOUR (24') FEET ON CENTER THROUGHOUT. (REF: CALTRANS STD DETAIL 27B, DRAWING A20B)
- 36 -DETAIL 36 WHITE PAINTED ENTRANCE RAMP STRIPING (REF: CALTRANS STD DETAIL 36, DRAWING RSPA20C)
- 37B -DETAIL 37B WHITE PAINTED LANE DROP AT ENTRANCE RAMP STRIPING (REF: CALTRANS STD DETAIL 37B, DRAWING RSPA20C)
- 38 -DETAIL 38 WHITE PAINTED CHANNELIZING STRIPING (REF: CALTRANS STD DETAIL 38, DRAWING A20D)
- 39A -DETAIL 39A WHITE DASHED BIKE LANE STRIPING (REF: CALTRANS STD DETAIL 39A, DRAWING A20D)
- S -SIGN. INSTALL SIGN AT THIS LOCATION (MUTCD CALLOUT-SEE SIGN LEGEND THIS SHEET)

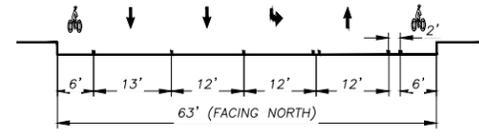


	PLANS PREPARED UNDER THE SUPERVISION OF:	DATE
	BILL E. DARNELL DESIGN ENGINEER R.C.E. No. 22338 LICENSE EXPIRES 9-30-15	
	Darnell & ASSOCIATES, INC. 2870 4TH AVE SAN DIEGO, CA 92103 (619) 233-9373	
DWG NAME: LK JNNGS S/S DATE: 02/20/2015 BY: DAB		

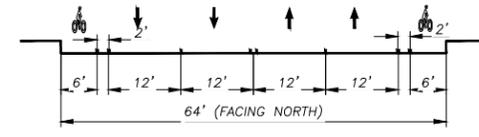
FIGURE 8
CHANNELIZATION CONCEPT
LAKE JENNINGS PARK ROAD
BLOSSOM VALLEY RD. TO OLDE HIGHWAY 80



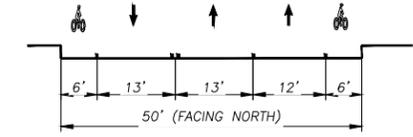
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CROSS SECTION "B"

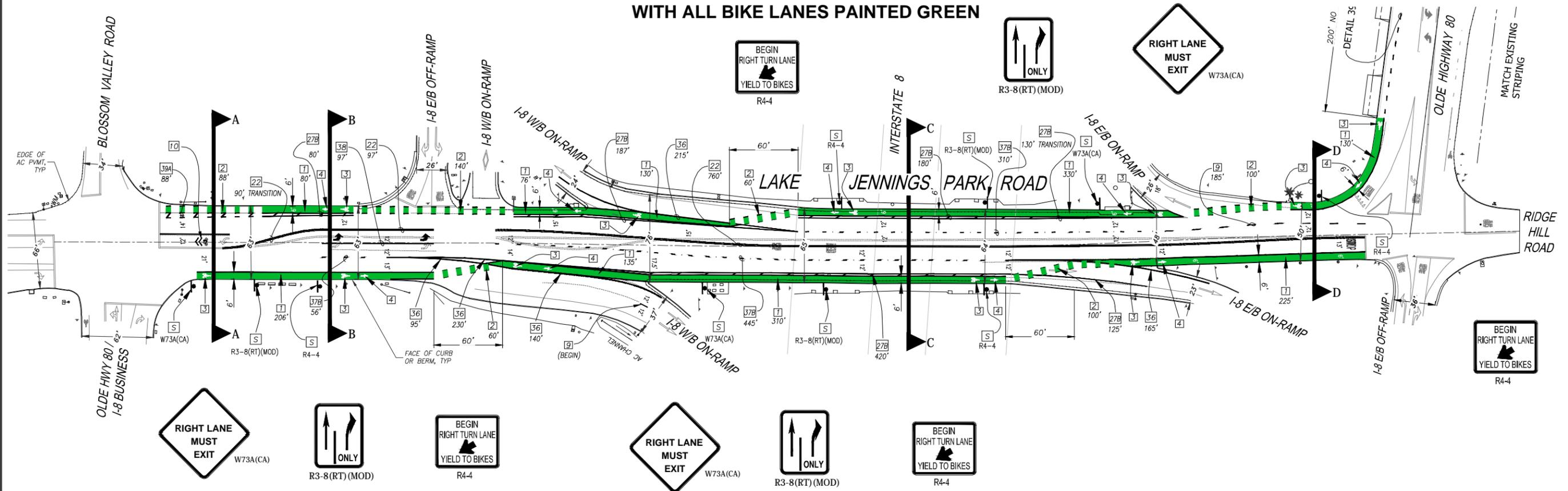


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CROSS SECTION "D"

**OPTIONAL PLAN
WITH ALL BIKE LANES PAINTED GREEN**

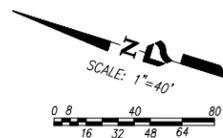


SIGNING AND STRIPING NOTES

- 1 -SIX (6') FOOT WIDE (TYPICAL) BIKE LANE "PAINTED GREEN" WITH SIX (6") INCH WIDE WHITE PAINTED DETAIL 39 EDGELINE STRIPING
- 2 -SIX (6') FOOT WIDE (TYPICAL) DASHED BIKE LANE PAINTED GREEN WITH SIX (6") INCH WIDE WHITE PAINTED DETAIL 39A DASHED EDGELINE STRIPING
- 3 -WHITE PAINTED BIKE LANE SYMBOL WITH PERSON (REF: CALTRANS STD DRAWING A24C)
- 4 -WHITE PAINTED BIKE LANE ARROW (REF: CALTRANS STD DRAWING A24A)
- 6 -INSTALL "YIELD TO BIKES" SIGN, MUTCD SIGN DESIGNATION TO BE APPROVED BY CALTRANS
- 9 -WHITE PAINTED DETAIL 9 DASHED STRIPING (REF: CALTRANS STD DETAIL 9, DRAWING A20A)
- 10 - WHITE PAINTED "SHARED ROADWAY BICYCLE MARKING". (REF: CALTRANS STD DRAWING A24C)

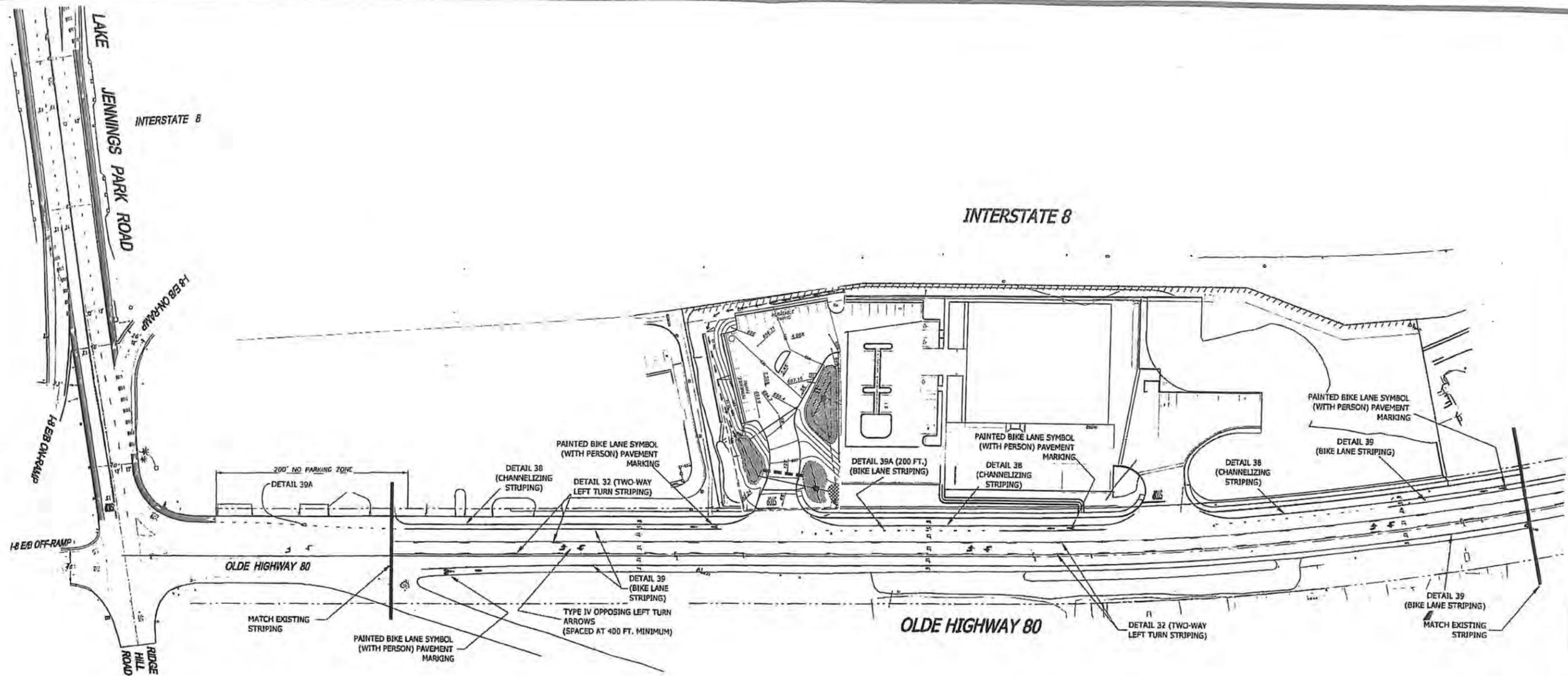
SIGNING AND STRIPING NOTES (CONTINUED)

- 22 -DETAIL 22 DOUBLE YELLOW PAINTED CENTERLINE STRIPING (REF: CALTRANS STD DETAIL 22, DRAWING A20A)
- 27B -DETAIL 27B WHITE PAINTED RIGHT EDGELINE STRIPING PAINTED TWO (2') FOOT OFF OF THE BIKE LANE STRIPING WITH DIAGONAL STRIPES TWENTY FOUR (24) FEET ON CENTER THROUGHOUT. (REF: CALTRANS STD DETAIL 27B, DRAWING A20B)
- 36 -DETAIL 36 WHITE PAINTED ENTRANCE RAMP STRIPING (REF: CALTRANS STD DETAIL 36, DRAWING RSPA20C)
- 37B -DETAIL 37B WHITE PAINTED LANE DROP AT ENTRANCE RAMP STRIPING (REF: CALTRANS STD DETAIL 37B, DRAWING RSPA20C)
- 38 -DETAIL 38 WHITE PAINTED CHANNELIZING STRIPING (REF: CALTRANS STD DETAIL 38, DRAWING A20D)
- 39A -DETAIL 39A WHITE DASHED BIKE LANE STRIPING (REF: CALTRANS STD DETAIL 39A, DRAWING A20D)
- S -SIGN. INSTALL SIGN AT THIS LOCATION (MUTCD CALLOUT-SEE SIGN LEGEND THIS SHEET)



	PLANS PREPARED UNDER THE SUPERVISION OF:	
	BILL E. DARNELL DESIGN ENGINEER R.C.E. No. 22338 LICENSE EXPIRES 9-30-15	DATE
	Darnell & ASSOCIATES, INC. 2870 4TH AVE SAN DIEGO, CA 92103 (619) 233-9373	
DWG NAME: LK_JNNGNS S/S DATE: 02/20/2015 BY: DAB		

FIGURE 8A
CHANNELIZATION CONCEPT
LAKE JENNINGS PARK ROAD
BLOSSOM VALLEY RD. TO OLDE HIGHWAY 80



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FIGURE 9
CHANNELIZATION CONCEPT
OLDE HIGHWAY 80

It is also noted that the projects access locations do not conflict with the previously approved improvements on the south side of Olde Highway 80 to develop 160 residential condo units. With its access drives connecting to Rios Canyon Drive and Pecan Park Lane being removed from Rios Canyon Drive southerly. Table 11 presents the resulting levels of service with the proposed roadway mitigations.

Existing Plus Project – Intersections

The project does not have any intersection direct impacts. Therefore no mitigation is required.

Cumulative Traffic Impacts

The proposed Tractor Supply Store Project is consistent with the land use designations and Mobility Element contained in the adopted General Plan. The County of San Diego has developed the County of San Diego TIF – Transportation needs Assessment Report dated September 2012. The assessment report includes the identification of Traffic Impact Fees to be assessed to new projects to address cumulative impacts. To mitigate the projects share of cumulative impacts the project will be responsible for paying County TIF Fees.

Table 11 – Mitigated Existing Plus Project Roadway Segment Level of Service Summary								
Roadway Segment	Existing + Project				Mitigated Existing + Project			
	Classification	Capacity (a)	A.D.T.	LOS	Classification	Capacity (a)	A.D.T.	LOS
Lake Jennings Park Road								
-S/O Blossom Valley to I-8 WB off ramp	Town Collector	13,500	18,681	F	Boulevard (4.2 B)	25,000	18,681	C
-I-8 WB on ramp to I-8 EB on ramp	Light Collector	10,900	17,558	E	Boulevard (4.2 B)	25,000	17,558	D
-I-8 EB on ramp to Olde Highway 80	Light Collector	10,900	14,530	E	Town Collector (2.2 C)	13,500	14,530	E
Olde Highway 80								
-Lake Jennings Park to W. Pecan Park	Town Collector	13,500	15,138	E	Town Collector (2.2 C)	13,500	15,138	E
-W. Pecan Park to W Project Access	Town Collector	13,500	10,920	D	Town Collector (2.2 C)	13,500	10,920	D
-W Project Access to E Project Access	Light Collector	10,900	11,048	D	Town Collector (2.2 C)	13,500	11,048	D
-E Project Access to Project Eastern Boundary	Light Collector	10,900	10,158	D	Town Collector (2.2 C)	13,500	10,158	D
(a) Capacity is based on the upper limit of LOS D per the County of San Diego Level of Service Thresholds (b) Significance is based on the County of San Diego's Draft <i>Guidelines for Determining Significance</i> , (c) <i>Collector Road of four lanes: LOS D = 25,000</i> ADT = Average Daily Traffic; LOS = Level of Service								

SECTION V – ACCESS AND CIRCULATION

The Tractor Supply project proposes two (2) accesses on Olde Highway 80. Both project access driveways are controlled with a southbound stop sign. The easterly access will align with the future extension of Rios Canyon Road to Olde Highway 80. Table 12 summarizes the level of service at the project accesses. Synchro worksheets can be found in Appendix I for the project access driveways.

Table 12 - Project Access Level of Service Summary					
Intersection	Critical Movement	Existing + Project			
		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Olde Highway 80 @ West Project Dwy (OWSC)	EBL	0.7	A	1.0	A
	SBL	11.5	B	13.2	B
Olde Highway 80 @ East Project Dwy (OWSC)	EBL	0.0	A	0.1	A
	SBL	12.9	B	18.2	C

Delay is measured in seconds per vehicle; OWSC=one way stop control

As can be seen in Table 12, the project accesses operate at LOS C or better with the addition of the project.

The County's minimum requirement for driveway spacing along Olde Highway 80 is 300 feet between centerlines. The on-site driveways comply with the 300 foot spacing. However the projects westerly driveway is spaced 270 feet from the adjacent driveway for the existing Burger King driveway. Therefore a design exception will be required due to the topographical constraints of the project site for intersection spacing between the projects westerly access and the Burger King driveway.

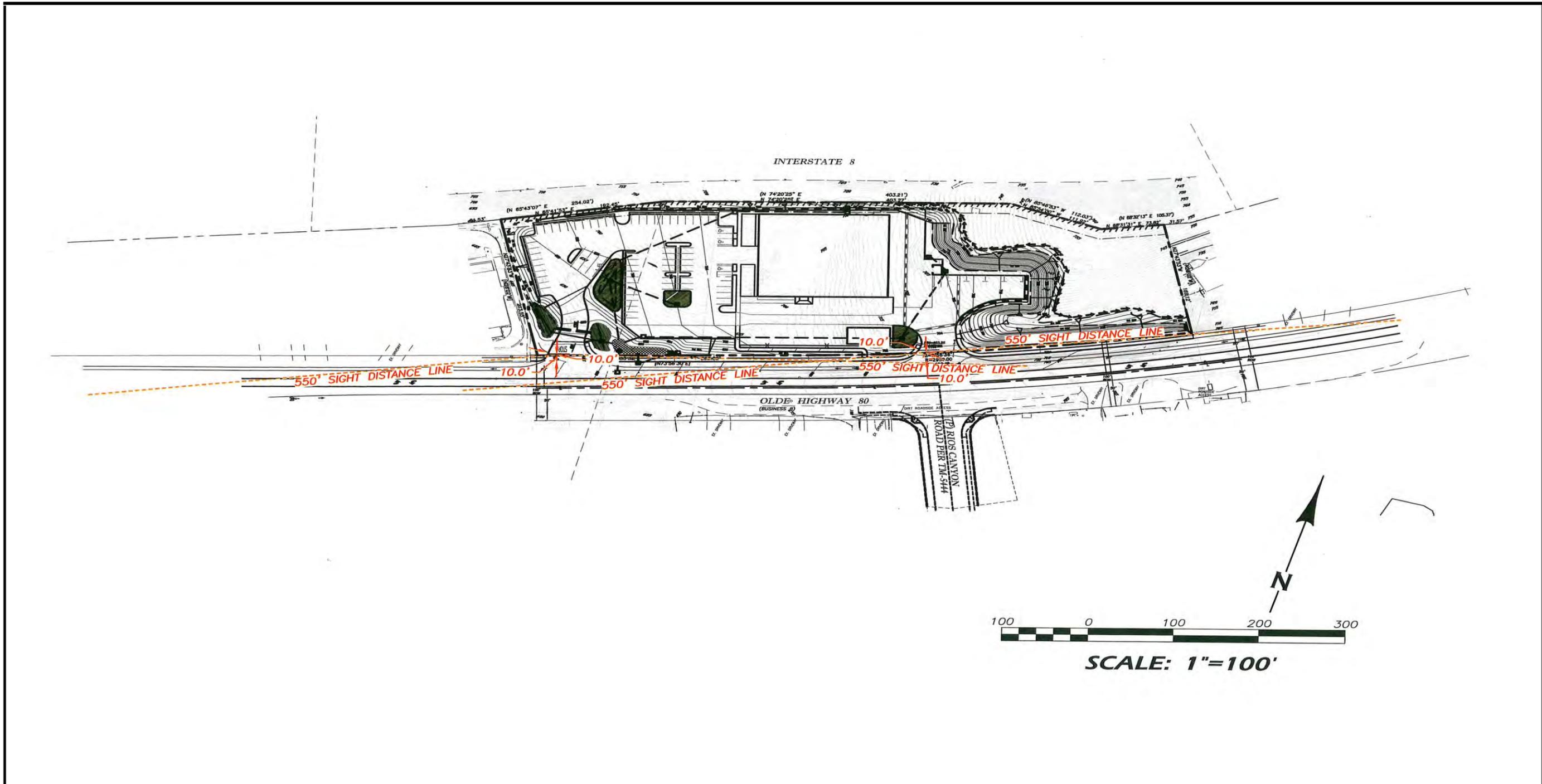
ON-SITE CIRCULATION

The project site has been designed with two (2) project access drives. The westerly drive is designed to accommodate customer access. The easterly 2nd access is designed to accommodate delivery trucks. A drive thru area between the drives is proposed to accommodate customers to load larger materials and exit thru the eastern access. With these improvements the on-site circulation will not have any conflicts between customers and delivery trucks.

CORNER SIGHT DISTANCE

Corner sight Distance at each project driveway was evaluated based on the design speed of Olde Highway 80. Olde Highway 80 is classified as a Major Road 4.1B with intermittent turn lanes with a design speed of 55 MPH. The County's Corner Sight Distance for the 55 MPH is 550 feet (Based on 10 feet x mph design speed = 550' feet). Based on the County of San Diego's sight distance guidelines, sight distance is measured at a point 10 feet (10') back from the edge of pavement with a driver eye height of 3.5 feet and an object height of 3.5 feet.

The grading plan for the project includes improvements to Olde Highway 80 to comply with the 4.1B major Road requirements and includes the necessary grading to provide the 550' feet of corner sight distance and the applicants Engineer will be able to certify the corner sight distance at the time the project plans are approved and permits are issued. The corner sight distance is depicted on the grading plan presented on Figure 10 and is attached in Appendix G



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FIGURE 10
Corner Sight Distance

SECTION VI – MITIGATION MEASURES

DIRECT IMPACTS

The project resulted in direct impacts on Lake Jennings Park Road and Olde Highway 80 roadway segments that would require mitigation. No direct impacts resulted at any of the study area intersections.

The proposed project identifies a direct impact on the roadway segments daily capacity of Lake Jennings Park Road from south of Blossom Valley Road to the I-8 EB Ramps and Olde Highway 80 between Lake Jennings Park Road and the western project access. It should be noted that the project area intersections operate acceptably with the addition of project traffic.

- To mitigate the projects direct impacts to lake Jennings Park Road and Olde Highway 80 the project proposes:
 - Restripe Lake Jennings park Road as depicted on Figure 8 Channelization Concept to provide the equivalent of 4-lane collector road capacity;
 - Widen and restripe Olde Highway 80 as depicted on Figure 9 – Channelization concept.
- The project is responsible for improvements on Olde Highway 80 along the project frontage per the County’s centerline ordinance. The Construction of improvements along Olde Highway 80 and the projects eastern boundary will require the roadway to be restriped to conform to the existing roadway geometrics and to the classification of a Town Collector (one lane in each direction with a center turn lane). The channelization concept is presented in Appendix F.
- Based on the adopted Mobility Element improvements to Olde Highway 80 would need to comply with a modified four lane major road (identified as 4.1b classification on the County's Proposed CE Roadway Network), which includes an 84-98' ROW with intermittent turn lanes). The project will be required to dedicate appropriate width on Olde Highway 80 for this configuration. The site plan shows 50 feet from center line of the existing rights-of-way to the east and west of the project that is required to match the existing improved roadway between the project and Lake Jennings Park Road and to the east of the project.

CUMULATIVE IMPACTS

The project is considered to be part of cumulative impacts. To mitigate these impacts, the project’s applicant agrees to participate in the County of San Diego Traffic Impact Fee (TIF) Program and will pay the current County TIF Fees at the time building permits are issued.

SECTION VII — SUMMARY OF FINDINGS & CONCLUSIONS

- The proposed Tractor Supply Company is located on the north side of Olde Highway 80 between Pecan Park Lane West and Pecan Park Lane East in the Lake Jennings Area of San Diego County.
- The proposed project is estimated to generate 857 average daily trips, 35 AM peak hour trips, and 83 PM peak hour trips.
- The project has direct impacts on the daily capacity of segments of Lake Jennings Park Road between Blossom Valley Road and on Olde Highway 80 between Lake Jennings Park Road and the project's eastern boundary. Figures 8 and 9 depict Channelization Concepts to mitigate the projects roadway direct impacts.
- The project accesses will operate at LOS C or better. Note the easterly access will be ultimately aligned with the extension of Rios Canyon Road to Olde Highway 80. This intersection has been assumed to remain unsignalized with the approval of improvement and opening of the project.
- The County of San Diego requirements for Corner Sight Distance will be satisfied and will be certified by the Civil Engineer with the grading plan for the project.
- The topography of the project site will require a Design Exception to be processed and approved to permit the projects western access to be spaced 270 feet, which is less than the 300 foot requirement from the adjacent Burger King Driveway adjacent to the projects western boundary.

APPENDIX A

- Existing AM/PM Peak Hour Traffic Counts
 - Existing 24 Hour Machine Counts
- Tables 1, 2A and 2B from County Public Road Standards

Existing AM/PM Peak Hour Traffic Counts

Existing 24 Hour Machine Counts

TUESDAY, JANUARY 28TH, 2014

CITY: LAKESIDE

PROJECT: PTD14-0124-01

OLDE HWY 80 E-0 LAKE JENNINGS

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			14	5	12:00			106	112			
00:15			8	4	12:15			101	120			
00:30			7	1	12:30			143	115			
00:45			0	29	12:45			104	454	110	457	911
01:00			3	4	13:00			112	111			
01:15			4	5	13:15			135	104			
01:30			3	1	13:30			109	90			
01:45			2	12	13:45			147	503	119	424	927
02:00			6	2	14:00			140	118			
02:15			5	1	14:15			127	136			
02:30			4	10	14:30			141	136			
02:45			2	17	14:45			141	549	138	528	1077
03:00			5	5	15:00			161	122			
03:15			2	5	15:15			162	158			
03:30			4	5	15:30			161	123			
03:45			3	14	15:45			162	646	141	544	1190
04:00			2	10	16:00			184	131			
04:15			3	15	16:15			177	135			
04:30			8	15	16:30			195	151			
04:45			7	20	16:45			161	717	138	555	1272
05:00			14	27	17:00			151	122			
05:15			12	22	17:15			162	131			
05:30			22	69	17:30			148	119			
05:45			31	79	17:45			144	605	88	460	1065
06:00			55	68	18:00			127	98			
06:15			45	96	18:15			124	98			
06:30			49	129	18:30			122	98			
06:45			49	198	18:45			113	486	89	383	869
07:00			80	141	19:00			77	59			
07:15			89	151	19:15			72	49			
07:30			116	148	19:30			75	57			
07:45			121	406	19:45			79	303	50	215	518
08:00			105	135	20:00			83	42			
08:15			116	109	20:15			76	49			
08:30			128	144	20:30			55	51			
08:45			115	464	20:45			53	267	47	189	456
09:00			107	158	21:00			54	37			
09:15			77	124	21:15			42	27			
09:30			83	97	21:30			49	29			
09:45			75	342	21:45			44	189	39	132	321
10:00			71	80	22:00			33	18			
10:15			64	82	22:15			30	30			
10:30			75	101	22:30			28	35			
10:45			80	290	22:45			37	128	19	102	230
11:00			98	100	23:00			22	19			
11:15			102	104	23:15			14	15			
11:30			104	103	23:30			26	11			
11:45			109	413	23:45			9	71	10	55	126

Total Vol. 2284 3121 5405 4918 4044 8962

Split %	AM			Daily Totals		
	NB	SB	Combined	EB	WB	Combined
	42.3%	57.7%	37.6%	7202	7165	14367
				PM		
				54.9%	45.1%	62.4%
Peak Hour	07:45	07:00	08:15	15:45	15:45	15:45
Volume	470	596	1028	718	558	1276
P.H.F.	0.92	0.96	0.94	0.92	0.92	0.92

THURSDAY, JANUARY 23RD, 2014

CITY: LAKESIDE

PROJECT: PTD14-0124-01

LAKE JENNINGS BTN WB RAMPS & EB RAMPS

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	18	19			12:00	144	70		
00:15	19	20			12:15	162	84		
00:30	20	16			12:30	135	67		
00:45	15	72	11	66	12:45	177	618	70	291
01:00	11	15			13:00	162	66		909
01:15	16	9			13:15	174	70		
01:30	9	9			13:30	151	84		
01:45	12	48	12	45	13:45	178	665	89	309
02:00	11	7			14:00	162	88		974
02:15	9	9			14:15	155	81		
02:30	5	5			14:30	160	70		
02:45	9	34	10	31	14:45	175	652	84	323
03:00	5	5			15:00	162	116		975
03:15	4	4			15:15	188	103		
03:30	9	6			15:30	203	121		
03:45	10	28	9	24	15:45	219	772	116	456
04:00	15	10			16:00	218	115		1228
04:15	28	5			16:15	231	121		
04:30	22	19			16:30	266	124		
04:45	26	91	22	56	16:45	215	930	135	495
05:00	35	28			17:00	235	141		1425
05:15	44	26			17:15	241	151		
05:30	51	35			17:30	218	116		
05:45	88	218	45	134	17:45	184	878	126	534
06:00	95	44			18:00	184	114		1412
06:15	121	58			18:15	195	126		
06:30	135	66			18:30	189	106		
06:45	141	492	70	238	18:45	177	745	116	462
07:00	168	68			19:00	161	88		1207
07:15	215	77			19:15	184	84		
07:30	205	84			19:30	141	75		
07:45	208	796	68	297	19:45	135	621	84	331
08:00	181	84			20:00	105	68		952
08:15	167	91			20:15	111	84		
08:30	15	105			20:30	95	77		
08:45	181	544	88	368	20:45	84	395	84	313
09:00	168	77			21:00	81	65		708
09:15	151	84			21:15	70	41		
09:30	141	68			21:30	68	51		
09:45	135	595	70	299	21:45	77	296	42	199
10:00	152	84			22:00	84	35		495
10:15	144	66			22:15	65	40		
10:30	152	62			22:30	58	28		
10:45	135	583	58	270	22:45	60	267	29	132
11:00	148	70			23:00	43	33		399
11:15	133	65			23:15	51	31		
11:30	141	77			23:30	35	27		
11:45	151	573	69	281	23:45	26	155	17	108
Total Vol.	4074	2109		6183		6994	3953		10947
						NB	SB	Daily Totals	
						11068	6062	EB	WB
									Combined
									17130
Split %		AM				PM			
	65.9%	34.1%		36.1%	63.9%	36.1%			63.9%
Peak Hour	07:15	08:00		07:15	16:30	16:30			16:30
Volume	809	368		1122	957	551			1508
P.H.F.	0.94	0.88		0.96	0.89	0.91			0.96

THURSDAY, JANUARY 23RD, 2014

CITY: LAKESIDE

PROJECT: PTD14-0124-01

I-8 BUS ROUTE W-O LAKE JENNINGS

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			5	5	12:00			40	35			
00:15			8	4	12:15			53	44			
00:30			2	5	12:30			64	39			
00:45			3	18	5	19	37	52	209	48	166	375
01:00			1	3	13:00			55	33			
01:15			4	4	13:15			50	36			
01:30			1	4	13:30			65	49			
01:45			3	9	4	15	24	52	222	44	162	384
02:00			4	1	14:00			59	45			
02:15			0	1	14:15			59	54			
02:30			1	3	14:30			64	81			
02:45			6	11	4	9	20	51	233	44	224	457
03:00			0	1	15:00			58	67			
03:15			3	1	15:15			66	66			
03:30			4	4	15:30			85	62			
03:45			3	10	5	11	21	77	286	57	252	538
04:00			7	3	16:00			77	67			
04:15			9	1	16:15			75	62			
04:30			6	1	16:30			61	51			
04:45			9	31	8	13	44	65	278	63	243	521
05:00			14	6	17:00			66	54			
05:15			15	7	17:15			52	63			
05:30			21	13	17:30			48	67			
05:45			18	68	15	41	109	44	210	44	228	438
06:00			45	21	18:00			66	48			
06:15			34	15	18:15			55	51			
06:30			47	27	18:30			45	35			
06:45			75	201	36	99	300	40	206	44	178	384
07:00			68	44	19:00			36	36			
07:15			88	51	19:15			26	25			
07:30			91	58	19:30			21	26			
07:45			84	331	62	215	546	27	110	22	109	219
08:00			62	68	20:00			24	33			
08:15			68	55	20:15			30	32			
08:30			89	42	20:30			27	26			
08:45			55	274	60	225	499	17	98	19	110	208
09:00			52	55	21:00			15	21			
09:15			56	49	21:15			20	18			
09:30			37	44	21:30			15	19			
09:45			43	188	35	183	371	28	78	13	71	149
10:00			31	42	22:00			10	13			
10:15			44	36	22:15			16	13			
10:30			47	36	22:30			11	17			
10:45			39	161	50	164	325	14	51	7	50	101
11:00			61	45	23:00			8	9			
11:15			46	42	23:15			9	7			
11:30			34	38	23:30			6	8			
11:45			46	187	53	178	365	7	30	1	25	55

Total Vol. 1489 1172 2661 2011 1818 3829

Daily Totals				
NB	SB	EB	WB	Combined
		3500	2990	6490
PM				
		52.5%	47.5%	59.0%

Split % AM 56.0% 44.0% 41.0%

Peak Hour	07:00	07:30	07:15	15:30	14:30	15:30
Volume	331	243	564	314	258	562
P.H.F.	0.91	0.89	0.95	0.92	0.80	0.96

TUESDAY, JANUARY 28TH, 2014

CITY: LAKESIDE

PROJECT: PTD14-0124-01

OLDE HWY 80 E-0 LAKE JENNINGS

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			14	5	12:00			106	112			
00:15			8	4	12:15			101	120			
00:30			7	1	12:30			143	115			
00:45			0	29	6	16	45	104	454	110	457	911
01:00			3	4	13:00			112	111			
01:15			4	5	13:15			135	104			
01:30			3	1	13:30			109	90			
01:45			2	12	4	14	26	147	503	119	424	927
02:00			6	2	14:00			140	118			
02:15			5	1	14:15			127	136			
02:30			4	10	14:30			141	136			
02:45			2	17	4	17	34	141	549	138	528	1077
03:00			5	5	15:00			161	122			
03:15			2	5	15:15			162	158			
03:30			4	5	15:30			161	123			
03:45			3	14	4	19	33	162	646	141	544	1190
04:00			2	10	16:00			184	131			
04:15			3	15	16:15			177	135			
04:30			8	15	16:30			195	151			
04:45			7	20	14	54	74	161	717	138	555	1272
05:00			14	27	17:00			151	122			
05:15			12	22	17:15			162	131			
05:30			22	69	17:30			148	119			
05:45			31	79	68	186	265	144	605	88	460	1065
06:00			55	68	18:00			127	98			
06:15			45	96	18:15			124	98			
06:30			49	129	18:30			122	98			
06:45			49	198	116	409	607	113	486	89	383	869
07:00			80	141	19:00			77	59			
07:15			89	151	19:15			72	49			
07:30			116	148	19:30			75	57			
07:45			121	406	156	596	1002	79	303	50	215	518
08:00			105	135	20:00			83	42			
08:15			116	109	20:15			76	49			
08:30			128	144	20:30			55	51			
08:45			115	464	151	539	1003	53	267	47	189	456
09:00			107	158	21:00			54	37			
09:15			77	124	21:15			42	27			
09:30			83	97	21:30			49	29			
09:45			75	342	105	484	826	44	189	39	132	321
10:00			71	80	22:00			33	18			
10:15			64	82	22:15			30	30			
10:30			75	101	22:30			28	35			
10:45			80	290	105	368	658	37	128	19	102	230
11:00			98	100	23:00			22	19			
11:15			102	104	23:15			14	15			
11:30			104	103	23:30			26	11			
11:45			109	413	112	419	832	9	71	10	55	126

Total Vol. 2284 3121 5405 4918 4044 8962

NB	SB	Daily Totals		Combined
		EB	WB	
		7202	7165	14367
		PM		
		54.9%	45.1%	62.4%

Split %	AM		
	42.3%	57.7%	37.6%
Peak Hour	07:45	07:00	08:15
Volume	470	596	1028
P.H.F.	0.92	0.96	0.94

Tables 1, 2A and 2B from County Public Road Standards

**TABLE 1
AVERAGE DAILY VEHICLE TRIPS***

MOBILITY ELEMENT ROADS		LEVELS OF SERVICE					
Road Classification	# of Travel Lanes	A	B	C	D	E	
Expressway (6.1)	6	<36,000	<54,000	<70,000	<86,000	<108,000	
Prime Arterial (6.2)	6	<22,200	<37,000	<44,600	<50,000	<57,000	
Major Road	w/ Raised Median (4.1A)	4	<14,800	<24,700	<29,600	<33,400	<37,000
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800	<34,200
Boulevard	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000	<30,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000	<28,000
Community Collector	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000	<19,000
	w/ Continuous Left Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.1C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700	<9,700
Minor Collector	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	w/ Intermittent Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000	<8,000
NON-MOBILITY ELEMENT ROADS**		LEVELS OF SERVICE					
Residential Collector	2	-	-	<4,500	-	-	
Rural Residential Collector***	2	-	-	<4,500	-	-	
Residential Road	2	-	-	<1,500	-	-	
Rural Residential Road***	2	-	-	<1,500	-	-	
Residential Cul-de-Sac or Loop Road	2	-	-	<200	-	-	

* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

*** Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

**** See Tables 2A and 2B for roadway surfacing and right-of-way widths.

TABLE 2A: COUNTY OF SAN DIEGO - PUBLIC ROAD STANDARDS

MOBILITY ELEMENT ROAD CLASSIFICATIONS

ROAD CLASSIFICATION	# LANES / LANE WIDTH	MEDIAN WIDTH	ROAD SURFACING WIDTH	R.O.W. WIDTH	PAVED SHOULDER (# / WIDTH)	PARKWAY WIDTH	MIN. CURVE RADIUS	MAX. DESIRABLE GRADE	MIN. DESIGN SPEED (MPH)
Expressway (6.1)	6 / 12'	34'	126'	146'	2 / 10'	10'	1,700'	6%	65
Prime Arterial (6.2)	6 / 12'	14'	102'	122'	2 / 8'	10'	1,700'	6%	65
Major Road									
With Raised Median (4.1A)	4 / 12'	14'	78'	98'	2 / 8'	10'	1,200'	7%	55
With Intermittent Turn Lanes (4.1B)	4 / 12'	-	64' - 78'	84' - 98'	2 / 8'	10'	1,200'	7%	55
Boulevard									
With Raised Median (4.2A)	4 / 12'	14'	78'	106'	2 / 8'	14'	500'	9%	40
With Intermittent Turn Lanes (4.2B)	4 / 12'	-	64' - 78'	92' - 106'	2 / 8'	14'	500'	9%	40
Community Collector									
With Raised Median (2.1A)	2 / 12'	14'	54'	74'	2 / 8'	10'	700'	9%	45
With Continuous Left Turn Lane (2.1B)	2 / 12'	14'	54'	74'	2 / 8'	10'	700'	9%	45
With Intermittent Turn Lanes (2.1C)	2 / 12'	-	40' - 54'	60' - 74'	2 / 8'	10'	700'	9%	45
With Improvement Options (2.1D)	2 / 12'	-	40' - 54'	84'	2 / 8'	15' - 22'	700'	9%	45
No Median (2.1E)	2 / 12'	-	40'	60'	2 / 8'	10'	700'	9%	45
Light Collector									
With Raised Median (2.2A)	2 / 12'	14'	54'	78'	2 / 8'	12'	500'	9%	40
With Continuous Left Turn Lane (2.2B)	2 / 12'	14'	54'	78'	2 / 8'	12'	500'	9%	40
With Intermittent Turn Lanes (2.2C)	2 / 12'	-	40' - 54'	64' - 78'	2 / 8'	12'	500'	9%	40
With Improvement Options (2.2D)	2 / 12'	-	40' - 54'	88'	2 / 8'	17' - 24'	500'	9%	40
No Median (2.2E)	2 / 12'	-	40'	64'	2 / 8'	12'	500'	9%	40
With Reduced Shoulder (2.2F)	2 / 12'	-	28'	52'	2 / 2'	12'	500'	9%	40
Minor Collector									
With Raised Median (2.3A)	2 / 12'	14'	54'	82'	2 / 8'	14'	350'	12%	35
With Intermittent Turn Lanes (2.3B)	2 / 12'	-	40' - 54'	68' - 82'	2 / 8'	14'	350'	12%	35
No Median (2.3C)	2 / 12'	-	40'	68'	2 / 8'	14'	350'	12%	35

NOTES:

- 1 Minimum longitudinal gradient shall be 1.0 percent for all road classifications shown above.
- 2 The maximum grade for a permanent cul-de-sac street turning area shall be 6 percent.
- 3 The maximum grade for a temporary cul-de-sac street turning area shall be that of the classification of the road being constructed.
- 4 For standards, see County Design Standard Drawing DS-2, DS-3, DS-4, and Section 4.5N of these Standards.
- 5 Additional pavement and ROW may be required for ME Boulevards / Community Collectors (4 feet) and Light Collectors (12 feet) in Industrial/Commercial Zones.
- 6 ME roads needing additional turn or passing lanes will require an additional 12 to 14 feet of pavement and ROW for each lane.
- 7 The maximum superlevation allowed on ME roads is 6%. Superlevation is not normally required on Non-ME roads.
- 8 ME roads designated with Bike Lanes will require an additional 10 feet of pavement and ROW. This may be increased to 12' for four-lane roads and above based upon the provisions in Section 7.3 of these standards.
- 9 The minimum curve radii, shown in the table above, are based on the design speed with 6% superlevation.
- 10 Interim roads are to be a minimum of 28 feet A.C. within a 40 feet graded roadbed. They may be larger if traffic volumes require more travel lanes.
- 11 Road surfacing widths include median width.

TABLE 2B: COUNTY OF SAN DIEGO - PUBLIC ROAD STANDARDS

NON-MOBILITY ELEMENT ROAD CLASSIFICATIONS

ROAD CLASSIFICATION	# LANES / LANE WIDTH	MEDIAN WIDTH	ROAD SURFACING WIDTH	R.O.W. WIDTH	PAVED SHOULDERS (# / WIDTH)	PARKWAY WIDTH	MINIMUM CURVE RADIUS	MAXIMUM DESIRABLE GRADE	MINIMUM DESIGN SPEED (MPH)
Residential Collector	2 / 12'	-	40'	60'	2 / 8'	10'	300'	12%	30
Rural Residential Collector *	2 / 12'	-	28'	48'	2 / 2'	10'	300'	12%	30
Residential Road	2 / 12'	-	36'	56'	2 / 6'	10'	200'	15%	30
Rural Residential Road *	2 / 12'	-	28'	48'	2 / 2'	10'	200'	15%	30
Residential Cul-de-sac	2 / 12'	-	32'	52'	2 / 4'	10'	200'	15%	30
Residential Loop	2 / 12'	-	32'	52'	2 / 4'	10'	200'	15%	30
Industrial/Commercial Collector	4 / 12'	-	68'	88'	2 / 10'	10'	300'	8%	30
Industrial/Commercial	2 / 16'	-	52'	72'	2 / 10'	10'	200'	8%	30
Industrial/Commercial Cul-de-sac	2 / 16'	-	52'	72'	2 / 10'	10'	200	8%	30
Frontage	2 / 12'	-	32' min	52' min	1 / 8'	10'	See above	See above	-
Alley	2 / 10'	-	20-30'	20-30'	None	None	50'	12%	n/a
Hillside Residential	See NOTE 4	-	-	-	-	-	-	-	-

- NOTES:**
- 1 Minimum longitudinal gradient shall be 1.0 percent for all road classifications shown above.
 - 2 The maximum grade for a permanent cul-de-sac street turning area shall be 6 percent.
 - 3 The maximum grade for a temporary cul-de-sac street turning area shall be that of the classification of the road being constructed.
 - 4 For standards, see County Design Standard Drawing DS-2, DS-3, DS-4, and Section 4.5N of these Standards.
 - 5 The minimum curve radii, shown in the table above, are based on the design speed with 6% superelevation.
 - 6 Interim roads are to be a minimum of 28 feet A.C. within a 40 feet graded roadbed. They may be larger if traffic volumes require more travel lanes.

LEGEND: * Serves lots > 2 acres in size w/
no demand for on-street parking

APPENDIX B

- Existing Conditions Synchro Worksheets

**EXISTING CONDITIONS AM
LAKESIDE TRACTOR SUPPLY**

1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.977			0.984				0.850
Flt Protected		0.979			0.968		0.950			0.950		
Satd. Flow (prot)	0	1824	1583	0	1762	0	1770	1833	0	1770	1863	1583
Flt Permitted		0.979			0.968		0.950			0.950		
Satd. Flow (perm)	0	1824	1583	0	1762	0	1770	1833	0	1770	1863	1583
Satd. Flow (RTOR)			224		15			6				59
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	48	63	206	226	54	59	105	413	51	45	403	54
Adj. Flow (vph)	52	68	224	246	59	64	114	449	55	49	438	59
Lane Group Flow (vph)	0	120	224	0	369	0	114	504	0	49	438	59
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Total Split (s)	12.0	12.0	12.0	44.0	44.0	0.0	15.0	21.0	0.0	13.0	19.0	19.0
Act Effct Green (s)		7.9	7.9		18.8		9.3	20.2		8.7	17.4	17.4
Actuated g/C Ratio		0.12	0.12		0.28		0.13	0.30		0.12	0.26	0.26
v/c Ratio		0.56	0.58		0.73		0.48	0.91		0.23	0.91	0.13
Control Delay		42.7	11.8		23.3		34.7	51.6		32.2	55.0	8.6
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		42.7	11.8		23.3		34.7	51.6		32.2	55.0	8.6
LOS		D	B		C		C	D		C	D	A
Approach Delay		22.6			23.3			48.5			47.9	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 67.1
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 38.6
 Intersection Capacity Utilization 63.8%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service B

Splits and Phases: 1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.

21 s	13 s	12 s	44 s								
15 s	19 s										

EXISTING CONDITIONS AM
LAKESIDE TRACTOR SUPPLY

2: I-8 WB Off Ramp & Lake Jennings Park Rd.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	15	265	329	0	0	826
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	288	358	0	0	898
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						358
pX, platoon unblocked	0.85					
vC, conflicting volume	1255	358			358	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1300	358			358	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	58			100	
cM capacity (veh/h)	152	687			1201	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	16	288	358	0	0	898
Volume Left	16	0	0	0	0	0
Volume Right	0	288	0	0	0	0
cSH	152	687	1700	1700	1700	1700
Volume to Capacity	0.11	0.42	0.21	0.00	0.00	0.53
Queue Length 95th (ft)	9	52	0	0	0	0
Control Delay (s)	31.6	14.0	0.0	0.0	0.0	0.0
Lane LOS	D	B				
Approach Delay (s)	14.9		0.0		0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			53.5%		ICU Level of Service	A
Analysis Period (min)			15			

EXISTING CONDITIONS AM
LAKESIDE TRACTOR SUPPLY

5: I-8 EB OFF Ramp/Olde Hwy 80 & Lake Jennings Park Rd.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	189	265	9	26	0	508	0	54	28	153	16	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	205	288	10	28	0	552	0	59	30	166	17	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	205	298	28	552	89	184						
Volume Left (vph)	205	0	28	0	0	166						
Volume Right (vph)	0	10	0	552	30	0						
Hadj (s)	0.53	0.01	0.53	-0.67	-0.17	0.22						
Departure Headway (s)	6.9	6.3	6.8	5.6	7.0	7.0						
Degree Utilization, x	0.39	0.52	0.05	0.86	0.17	0.36						
Capacity (veh/h)	502	550	509	629	458	478						
Control Delay (s)	13.0	14.9	9.0	32.3	11.4	13.8						
Approach Delay (s)	14.1		31.2		11.4	13.8						
Approach LOS	B		D		B	B						
Intersection Summary												
Delay			21.2									
HCM Level of Service			C									
Intersection Capacity Utilization			56.5%		ICU Level of Service				B			
Analysis Period (min)			15									

EXISTING CONDITIONS PM
LAKESIDE TRACTOR SUPPLY

1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.990			0.959				0.850
Flt Protected		0.968			0.961		0.950			0.950		
Satd. Flow (prot)	0	1803	1583	0	1772	0	1770	1786	0	1770	1863	1583
Flt Permitted		0.968			0.961		0.950			0.950		
Satd. Flow (perm)	0	1803	1583	0	1772	0	1770	1786	0	1770	1863	1583
Satd. Flow (RTOR)			177		5			25				77
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	61	32	163	158	24	15	136	470	176	52	536	71
Adj. Flow (vph)	66	35	177	172	26	16	148	511	191	57	583	77
Lane Group Flow (vph)	0	101	177	0	214	0	148	702	0	57	583	77
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Total Split (s)	20.5	20.5	20.5	20.5	20.5	0.0	8.5	20.5	0.0	8.5	20.5	20.5
Act Effct Green (s)		9.2	9.2		12.2		4.5	26.4		4.5	21.7	21.7
Actuated g/C Ratio		0.15	0.15		0.20		0.08	0.45		0.07	0.37	0.37
v/c Ratio		0.37	0.45		0.60		1.08	0.86		0.44	0.85	0.12
Control Delay		24.4	6.5		24.1		135.2	39.7		40.4	39.6	6.2
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		24.4	6.5		24.1		135.2	39.7		40.4	39.6	6.2
LOS		C	A		C		F	D		D	D	A
Approach Delay		13.0			24.1			56.3			36.1	
Approach LOS		B			C			E			D	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 58.7

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 40.1

Intersection LOS: D

Intersection Capacity Utilization 66.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.

20.5 s	8.5 s	20.5 s	20.5 s
8.5 s	20.5 s		

EXISTING CONDITIONS PM
 LAKESIDE TRACTOR SUPPLY

2: I-8 WB Off Ramp & Lake Jennings Park Rd.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	16	193	589	0	0	831
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	210	640	0	0	903
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL					
Median storage (veh)	1					
Upstream signal (ft)						358
pX, platoon unblocked	0.76					
vC, conflicting volume	1543	640			640	
vC1, stage 1 conf vol	640					
vC2, stage 2 conf vol	903					
vCu, unblocked vol	1716	640			640	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	56			100	
cM capacity (veh/h)	210	475			944	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	17	210	640	0	0	903
Volume Left	17	0	0	0	0	0
Volume Right	0	210	0	0	0	0
cSH	210	475	1700	1700	1700	1700
Volume to Capacity	0.08	0.44	0.38	0.00	0.00	0.53
Queue Length 95th (ft)	7	56	0	0	0	0
Control Delay (s)	23.7	18.4	0.0	0.0	0.0	0.0
Lane LOS	C	C				
Approach Delay (s)	18.8		0.0		0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			53.7%		ICU Level of Service	A
Analysis Period (min)			15			

EXISTING CONDITIONS PM
LAKESIDE TRACTOR SUPPLY

5: I-8 EB OFF Ramp/Olde Hwy 80 & Lake Jennings Park Rd.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	413	453	37	25	0	502	0	31	19	189	27	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	430	472	39	26	0	523	0	32	20	197	28	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	430	510	26	523	52	225						
Volume Left (vph)	430	0	26	0	0	197						
Volume Right (vph)	0	39	0	523	20	0						
Hadj (s)	0.53	-0.02	0.23	-0.57	-0.19	0.21						
Departure Headway (s)	6.0	5.4	6.1	3.2	6.0	6.0						
Degree Utilization, x	0.71	0.77	0.04	0.46	0.09	0.38						
Capacity (veh/h)	596	655	552	1116	575	574						
Control Delay (s)	21.1	22.6	9.4	8.9	9.6	12.6						
Approach Delay (s)	21.9		9.0		9.6	12.6						
Approach LOS	C		A		A	B						
Intersection Summary												
Delay			16.3									
HCM Level of Service			C									
Intersection Capacity Utilization			67.3%		ICU Level of Service					C		
Analysis Period (min)			15									

APPENDIX C

- Existing Plus Project Synchro Worksheets

**EXISTING PLUS PROJECT AM
LAKESIDE TRACTOR SUPPLY**

1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.

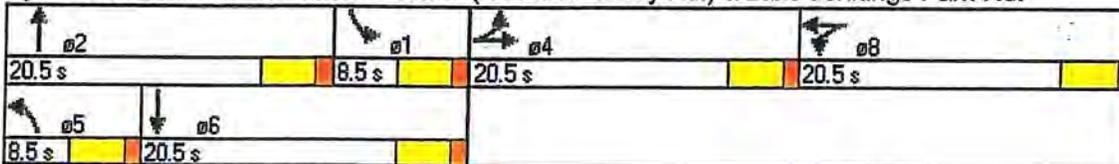
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt			0.850		0.977			0.983				0.850
Flt Protected		0.979			0.968		0.950			0.950		
Satd. Flow (prof)	0	1824	1583	0	1762	0	1770	1831	0	1770	1863	1583
Flt Permitted		0.979			0.968		0.950			0.950		
Satd. Flow (perm)	0	1824	1583	0	1762	0	1770	1831	0	1770	1863	1583
Satd. Flow (RTOR)			224		14			9				59
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	48	63	206	227	54	59	106	414	52	45	406	54
Adj. Flow (vph)	52	68	224	247	59	64	115	450	57	49	441	59
Lane Group Flow (vph)	0	120	224	0	370	0	115	507	0	49	441	59
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Total Split (s)	20.5	20.5	20.5	20.5	20.5	0.0	8.5	20.5	0.0	8.5	20.5	20.5
Act Effct Green (s)		9.8	9.8		15.7		4.5	20.2		4.5	16.6	16.6
Actuated g/C Ratio		0.16	0.16		0.25		0.07	0.32		0.07	0.26	0.26
v/c Ratio		0.42	0.51		0.82		0.90	0.85		0.40	0.89	0.13
Control Delay		25.7	6.5		36.6		93.1	40.7		40.0	47.9	7.1
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		25.7	6.5		36.6		93.1	40.7		40.0	47.9	7.1
LOS		C	A		D		F	D		D	D	A
Approach Delay		13.2			36.6			50.4			42.8	
Approach LOS		B			D			D			D	

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 62.7
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 38.7
 Intersection Capacity Utilization 64.0%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service B

Splits and Phases: 1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.



**EXISTING PLUS PROJECT PM
LAKESIDE TRACTOR SUPPLY**

1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts			0.850		0.990			0.959				0.850
Flt Protected		0.968			0.961		0.950			0.950		
Satd. Flow (prot)	0	1803	1583	0	1772	0	1770	1786	0	1770	1863	1583
Flt Permitted		0.968			0.961		0.950			0.950		
Satd. Flow (perm)	0	1803	1583	0	1772	0	1770	1786	0	1770	1863	1583
Satd. Flow (RTOR)			177		5			25				77
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	61	32	163	160	24	15	138	473	178	52	535	71
Adj. Flow (vph)	66	35	177	174	26	16	150	514	193	57	582	77
Lane Group Flow (vph)	0	101	177	0	216	0	150	707	0	57	582	77
Turn Type	Split		Perm	Split			Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4									6
Total Split (s)	20.5	20.5	20.5	20.5	20.5	0.0	8.5	20.5	0.0	8.5	20.5	20.5
Act Effct Green (s)		9.2	9.2		12.2		4.5	26.3		4.5	21.6	21.6
Actuated g/C Ratio		0.15	0.15		0.20		0.08	0.45		0.07	0.37	0.37
v/c Ratio		0.37	0.45		0.60		1.09	0.87		0.44	0.85	0.12
Control Delay		24.4	6.6		24.2		138.6	40.3		40.3	39.7	6.2
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		24.4	6.6		24.2		138.6	40.3		40.3	39.7	6.2
LOS		C	A		C		F	D		D	D	A
Approach Delay		13.0			24.2			57.5			36.1	
Approach LOS		B			C			E			D	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 58.6

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 40.6

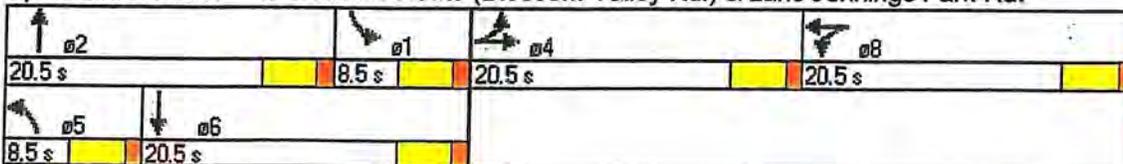
Intersection Capacity Utilization 66.8%

Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service C

Splits and Phases: 1: Business Route (Blossom Valley Rd.) & Lake Jennings Park Rd.



EXISTING PLUS PROJECT AM
LAKESIDE TRACTOR SUPPLY

2: I-8 WB Off Ramp & Lake Jennings Park Rd.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	22	265	330	0	0	829
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	288	359	0	0	901
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						358
pX, platoon unblocked	0.77					
vC, conflicting volume	1260	359			359	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1336	359			359	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	58			100	
cM capacity (veh/h)	131	686			1200	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	24	288	359	0	0	901
Volume Left	24	0	0	0	0	0
Volume Right	0	288	0	0	0	0
cSH	131	686	1700	1700	1700	1700
Volume to Capacity	0.18	0.42	0.21	0.00	0.00	0.53
Queue Length 95th (ft)	16	52	0	0	0	0
Control Delay (s)	38.5	14.0	0.0	0.0	0.0	0.0
Lane LOS	E	B				
Approach Delay (s)	15.9		0.0		0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			53.6%		ICU Level of Service	A
Analysis Period (min)			15			

EXISTING PLUS PROJECT PM
LAKESIDE TRACTOR SUPPLY

2: I-8 WB Off Ramp & Lake Jennings Park Rd.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	28	193	597	0	0	835
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	210	649	0	0	908
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL					
Median storage (veh)	1					
Upstream signal (ft)						358
pX, platoon unblocked	0.71					
vC, conflicting volume	1557	649			649	
vC1, stage 1 conf vol	649					
vC2, stage 2 conf vol	908					
vCu, unblocked vol	1784	649			649	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	55			100	
cM capacity (veh/h)	197	470			937	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	30	210	649	0	0	908
Volume Left	30	0	0	0	0	0
Volume Right	0	210	0	0	0	0
cSH	197	470	1700	1700	1700	1700
Volume to Capacity	0.15	0.45	0.38	0.00	0.00	0.53
Queue Length 95th (ft)	13	57	0	0	0	0
Control Delay (s)	26.6	18.7	0.0	0.0	0.0	0.0
Lane LOS	D	C				
Approach Delay (s)	19.7		0.0		0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			53.9%		ICU Level of Service	A
Analysis Period (min)			15			

**EXISTING PLUS PROJECT AM
LAKESIDE TRACTOR SUPPLY**

5: I-8 EB OFF Ramp/Olde Hwy 80 & Lake Jennings Park Rd.

Movement												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	184	270	9	26	0	518	0	54	28	165	16	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	200	293	10	28	0	563	0	59	30	179	17	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	200	303	28	563	89	197						
Volume Left (vph)	200	0	28	0	0	179						
Volume Right (vph)	0	10	0	563	30	0						
Hadj (s)	0.53	0.01	0.53	-0.67	-0.17	0.22						
Departure Headway (s)	7.0	6.4	6.9	5.7	7.1	7.1						
Degree Utilization, x	0.39	0.54	0.05	0.89	0.18	0.39						
Capacity (veh/h)	495	531	502	622	453	479						
Control Delay (s)	13.1	15.6	9.1	36.7	11.6	14.4						
Approach Delay (s)	14.6		35.4		11.6	14.4						
Approach LOS	B		E		B	B						
Intersection Summary												
Delay			23.3									
HCM Level of Service			C									
Intersection Capacity Utilization			56.8%		ICU Level of Service					B		
Analysis Period (min)			15									

EXISTING PLUS PROJECT PM
LAKESIDE TRACTOR SUPPLY

5: I-8 EB OFF Ramp/Olde Hwy 80 & Lake Jennings Park Rd.

Movement												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	413	461	37	26	0	530	0	31	20	209	27	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	430	480	39	27	0	552	0	32	21	218	28	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	430	519	27	552	53	246						
Volume Left (vph)	430	0	27	0	0	218						
Volume Right (vph)	0	39	0	552	21	0						
Hadj (s)	0.53	-0.02	0.23	-0.57	-0.20	0.21						
Departure Headway (s)	6.0	5.5	6.2	3.2	6.1	6.1						
Degree Utilization, x	0.72	0.79	0.05	0.49	0.09	0.41						
Capacity (veh/h)	588	647	541	1116	566	573						
Control Delay (s)	21.8	24.6	9.5	9.2	9.7	13.3						
Approach Delay (s)	23.4		9.3		9.7	13.3						
Approach LOS	C		A		A	B						
Intersection Summary												
Delay			17.1									
HCM Level of Service			C									
Intersection Capacity Utilization			69.0%		ICU Level of Service					C		
Analysis Period (min)			15									

APPENDIX D

- Existing Plus Project Access Synchro Worksheets

EXISTING PLUS PROJECT AM
 LAKESIDE TRACTOR SUPPLY

9: Olde Hwy 80 & East Project Access

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	4		4	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	1	296	415	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	322	451	1	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	452				776	452
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	452				776	452
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1108				366	608
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	323	452	2			
Volume Left	1	0	1			
Volume Right	0	1	1			
cSH	1108	1700	457			
Volume to Capacity	0.00	0.27	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	12.9			
Lane LOS	A		B			
Approach Delay (s)	0.0	0.0	12.9			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization		31.9%		ICU Level of Service		A
Analysis Period (min)		15				

EXISTING PLUS PROJECT PM
LAKESIDE TRACTOR SUPPLY

9: Olde Hwy 80 & East Project Access

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	662	498	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	720	541	2	2	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	543				1266	542
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	543				1266	542
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1025				186	540
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	722	543	4			
Volume Left	2	0	2			
Volume Right	0	2	2			
cSH	1025	1700	277			
Volume to Capacity	0.00	0.32	0.02			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.1	0.0	18.2			
Lane LOS	A		C			
Approach Delay (s)	0.1	0.0	18.2			
Approach LOS			C			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization		46.4%		ICU Level of Service		A
Analysis Period (min)			15			

EXISTING PLUS PROJECT AM
 LAKESIDE TRACTOR SUPPLY

8: Olde Hwy 80 & West Project Access

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	295	415	1	1	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	321	451	1	1	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	452				816	452
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	452				816	452
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	98
cM capacity (veh/h)	1108				340	608
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	342	452	11			
Volume Left	22	0	1			
Volume Right	0	1	10			
cSH	1108	1700	563			
Volume to Capacity	0.02	0.27	0.02			
Queue Length 95th (ft)	1	0	1			
Control Delay (s)	0.7	0.0	11.5			
Lane LOS	A		B			
Approach Delay (s)	0.7	0.0	11.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		41.9%		ICU Level of Service		A
Analysis Period (min)			15			

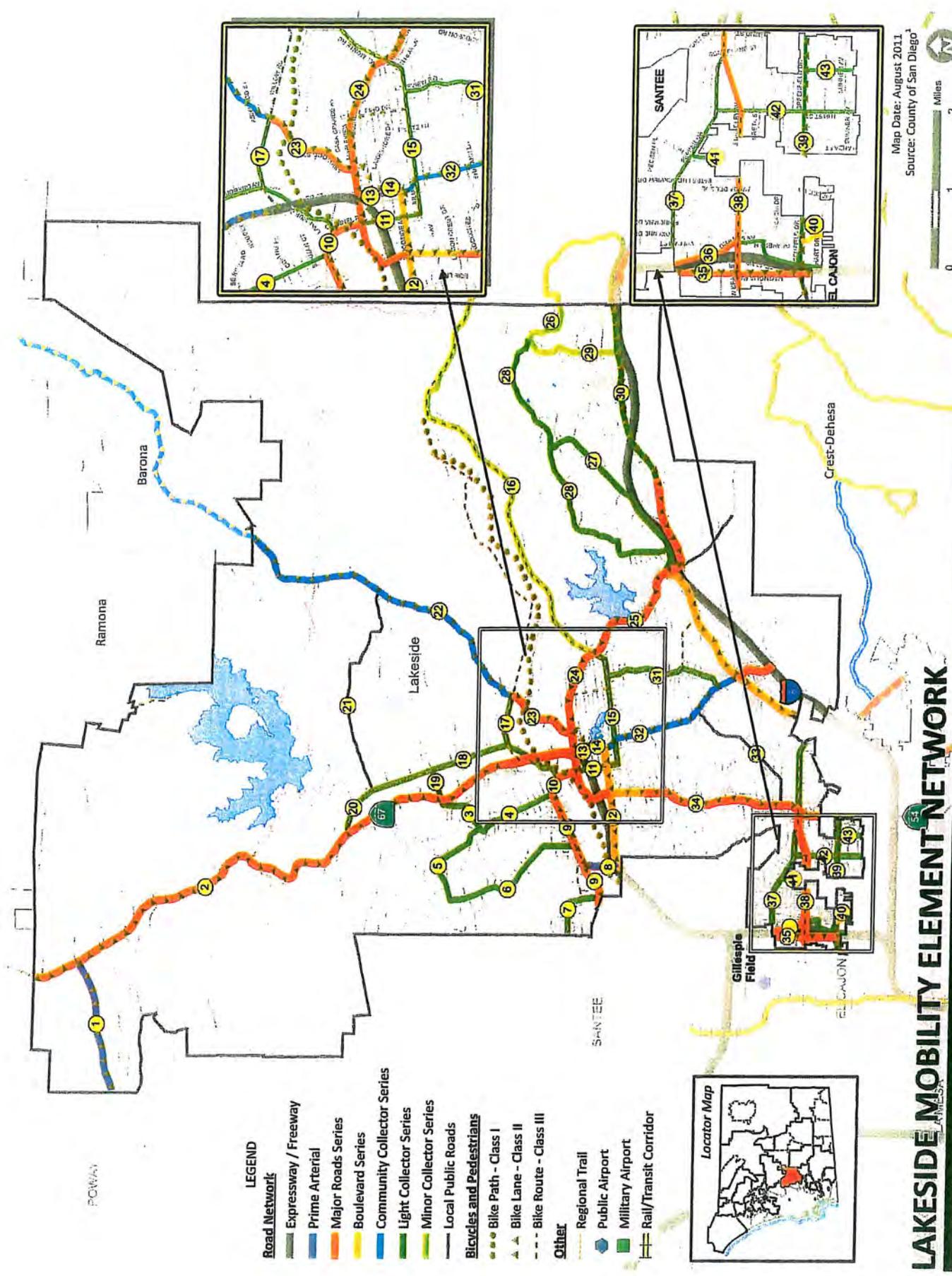
EXISTING PLUS PROJECT PM
LAKESIDE TRACTOR SUPPLY

8: Olde Hwy 80 & West Project Access

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	35	662	496	2	2	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	720	539	2	2	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	541				1336	540
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541				1336	540
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				99	93
cM capacity (veh/h)	1027				163	542
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	758	541	40			
Volume Left	38	0	2			
Volume Right	0	2	38			
cSH	1027	1700	481			
Volume to Capacity	0.04	0.32	0.08			
Queue Length 95th (ft)	3	0	7			
Control Delay (s)	1.0	0.0	13.2			
Lane LOS	A		B			
Approach Delay (s)	1.0	0.0	13.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization		73.4%		ICU Level of Service		D
Analysis Period (min)			15			

APPENDIX E

- Lakeside Mobility Element Network



- LEGEND**
- Road Network**
- Expressway / Freeway
 - Prime Arterial
 - Major Roads Series
 - Boulevard Series
 - Community Collector Series
 - Light Collector Series
 - Minor Collector Series
 - Local Public Roads
- Bicycles and Pedestrians**
- Bike Path - Class I
 - Bike Lane - Class II
 - Bike Route - Class III
- Other**
- Regional Trail
 - Public Airport
 - Military Airport
 - Rail/Transit Corridor



Map Date: August 2011
 Source: County of San Diego



LAKESIDE MOBILITY ELEMENT NETWORK

San Diego County General Plan

Figure M-A-10

MOBILITY ELEMENT NETWORK APPENDIX

Mobility Element Network—Lakeside Community Planning Area Matrix			
ID ^a	Road Segment	Designation/Improvement #.#X = [# of lanes].[roadway classification][improvement]	Special Circumstances
16	El Monte Road (SC 1920) Segment: Lake Jennings Park Road to Mountain Empire Subregion boundary	2.3C Minor Collector	None
17	Willow Road (SA 820) Segment: SR-67 to Wildcat Canyon Road	2.2E Light Collector	Recommended Improvement Align Willow Road with Lakeside Avenue and provide underpass at SR-67
18	Moreno Avenue (SC 1772) Segment: Vigilante Road to Willow Road	2.2E Light Collector	None
19	San Vicente Avenue (SC 1790) Segment: SR-67 to Moreno Avenue	2.2E Light Collector	None
20	Vigilante Road (SC 1772) Segment: SR-67 to Moreno Avenue	2.2B Light Collector Continuous Turn Lane	Recommended Improvement Align Slaughterhouse Canyon Road with Vigilante Road to form a four-way signalized intersection at SR-67
21	(Unnamed) Muth Valley Connection Segment: Moreno Avenue to Wildcat Canyon Road	Local Public Road	Public Road on Mobility Element Provide emergency access and connectivity for future development
22	Wildcat Canyon Road (SA 340.2) Segment: Willow Road to Ramona CPA boundary	2.1D Community Collector Improvement Options [Passing Lanes]	Accepted at LOS F Segment: Willow Road to Ramona CPA boundary
23	Ashwood Street (SA 340) Segment: Willow Road to Mapleview Street	4.1A Major Road Raised Median	None
24	Mapleview Street (SC 1805) Segment: Winter Gardens Boulevard to Lake Jennings Park Road	4.1A Major Road Raised Median	Accepted at LOS F Maine Avenue to Ashwood Street Recommended Improvement Underpass at SR-67
25	Lake Jennings Park Road (SA 810) Segment: Mapleview Street to Old Highway 80	4.1B Major Road Intermittent Turn Lanes	Accepted at LOS F Segment: I-8 Business Route to I-8 westbound ramp



Mobility Element Network—Lakeside Community Planning Area Matrix

ID ^a	Road Segment	Designation/Improvement #.#X = [# of lanes].[roadway classification][improvement]	Special Circumstances
26	Broad Oaks Road (SC 1930) Segment: Hawley Road to Alpine CPA boundary	2.3C Minor Collector	None
27	Blossom Valley Road (SA 830.1) Segment: Lake Jennings Park Road to Quail Canyon Road	2.2D Light Collector Improvement Options—Lake Jennings Park Road to Quail Canyon Road 2.2E Light Collector Intermittent Turn Lanes—Quail Canyon Road to Quail Canyon Road	None
28	Quail Canyon Road Segment: Blossom Valley Road to Hawley Road	2.2E Light Collector	None
29	Hawley Road (SC 1940) Segment: Old Highway 80 to Broad Oaks Road	2.3C Minor Collector	None
30	Old Highway 80 (SA 895) Segment: Pepper Drive to Alpine CPA boundary	4.2B Boulevard with Intermittent Turn Lanes Intermittent Turn Lanes—Pepper Drive to Lake Jennings Park Road 4.1B Major Road Intermittent Turn Lanes—Lake Jennings Park Road to Marina Springs Lane 2.2B Light Collector Continuous Turn Lane—Marina Springs Lane to Alpine CPA boundary	None
31	Lakeview Road (SC 1890) Segment: Los Coches Road to Julian Avenue	2.2E Light Collector	None
32	Los Coches Road (SF 1400) Segment: Julian Avenue to Interstate 8	2.1D Community Collector Improvement Options—Julian Avenue to Old Highway 80 4.1B Major Road Continuous Turn Lane—Old Highway 80 to Interstate 8	Accepted at LOS E/F Segment: Woodside Avenue to I-8 Business Route Shoulder as Parking Lane Separate Bike Lane required—Mapleview Street to Woodside Avenue

Memorandum

*Flex your power!
Be energy efficient!*

To: Roy Abboud
Planning (MS-240)

Date: August 20, 2014

File: 11-SD-8
PM R 21.82
Log No.: 437

From: Elsa Juarez
for KAREN JEWEL, CHIEF
TRAFFIC ENGINEERING AND ANALYSIS (TEA) (MS-230)

Subject: Tractor Supply Co Lakeside IGR #1324, Striping Plan for Lake Jennings Road

The conceptual plan that was provided addresses our previous comments. The comments below can be addressed during the permit process.

Traffic Comments

1. In the proposed striping for Lake Jennings Park Road does not include a shoulder. According to Section 300 of the Highway Design Manual an 8 foot shoulder is required. The HDM states that a "Class II bikeways may be included as part of the shoulder width See Topic 302." Non standard items will require approval of a design exception.
2. Alternate 2 striping plan is preferred.
3. Refer to Section 9C of the CA MUTCD 2012 for guidance on sign types and placement. The Special bike sign is not a regulatory sign and cannot be used. Use sign R4-4 where applicable (at locations where the right lane turns into a ramp).
4. As previously discussed, when the Bicycle Lane crosses the following ramps the bike lane should be angled to reduce the distance across the ramp: NB Lake Jennings to WB I-8 Entrance Ramp, SB Lake Jennings to WB I-8 Entrance Ramp, and SB Lake Jennings to EB I-8 Entrance Ramp.
5. SB Lake Jennings Park Road entrance to WB I-8 – the striping should be changed so that the bicycle crosses one lane versus two lanes. This may be achieved by extending the bicycle lane to the north (towards the gore area) and opening the second ramp lane to the west of the bicycle lane.
6. Please add a Left Turn Bicycle lane on NB Lake Jennings Park Road to Olde Hwy 80.
7. General sign guidance corrections will be commented on during the Permit phase of this project.

If you have any questions or comments, please contact Elsa Juarez at (619) 688-3263.

cc: K. Jewel/V. Diaz /TEA File