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**Holly Plaza II**  
(Holly Ave. West of San Pedro Dr.)

**Traffic Impact Study**

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**Presented to:**

City of Albuquerque  
Transportation Development Section  
&  
New Mexico Department of Transportation  
District No. 3

**Prepared for:**

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A handwritten signature in blue ink that reads "Terry O. Brown".

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# **Holly Plaza II (Holly Ave. / San Pedro Dr.)**

## **TRAFFIC IMPACT STUDY**

### **STUDY PURPOSE**

The study is being conducted in conjunction with a request for approval of a commercial development plan for the property located on the south side of Holly Ave west of San Pedro Dr. The purpose of this study is to identify the impact of the Development on the adjacent transportation system, and to make recommendations to mitigate any significant adverse impact on the adjacent transportation system resulting from the implementation of the facility. This report is being prepared to meet the requirements of the City of Albuquerque Transportation Development Section and the New Mexico Department of Transportation (District 3) in association with the development of the proposed project associated with this site plan.

### **STUDY PROCEDURES**

A scoping meeting was held on August 28, 2007 with City of Albuquerque staff (Tony Loyd and Steele Nowak) prior to beginning the Holly Plaza II study to discuss scope and methodology to be utilized within that report.

The resulting basic procedure followed in this study is described as follows:

- 1) Calculate the generated trips for the proposed commercial development consisting of a proposed retail commercial development comprised of an approximately 7,000 Discount Tire Store, a 2,400 S.F. Fast Food Restaurant w/Drive-Thru Window, and an additional 14,100 S.F. of retail commercial floor space.
- 2) Calculate trip distribution for the newly generated trips by this development. The commercial trips shall be distributed based on 2008 DASZ population data within a two-mile radius of the proposed site.
- 3) Determine Trip Assignments for the newly generated trips based on the results of the Trip Distribution Analysis and logical routing to and from the site.
- 4) Obtain AM Peak Hour and PM Peak Hour turning movement traffic counts at the intersection of Paseo del Norte / San Pedro Dr., Alameda Blvd. / San Pedro Dr., and Holly Ave. / San Pedro Dr.
- 5) Calculate Historic Growth Rates for each of the approaches to the intersections targeted for analysis where the historic data was available. Historic Growth Rates were calculated using Mid-Region Council of Governments regional model forecasts for the years 2005 and 2010.
- 6) Determine 2008 NO BUILD intersection volumes by growing the data from the existing traffic counts at the calculated historic growth rate to the analysis year, then add traffic volumes generated by nearby recently approved undeveloped projects.
- 7) Include in the background traffic (NO BUILD Volumes) the generated trips from the following proposed developments going through the approval process in the City of Albuquerque:
  - Skarsgard Office Development (NE Corner of Holly / San Pedro)
  - Daskalos Commercial Development (Holly Ave. West of Kohl's)

Del Norte Plaza (SE Corner of Holly / San Pedro)

- 8) Add in data from Trip Assignments Maps and Tables to the 2008 NO BUILD Volumes to obtain 2008 BUILD Volumes for this project.
- 9) Provide signalized and unsignalized intersection analyses for the following intersections:

INTERSECTION	TYPE CONTROL	NO BUILD	BUILD
Paseo del Norte / San Pedro Dr. (1)	Traffic Signal	2008	2008
Alameda Blvd. / San Pedro Dr. (2)	Stop Sign	2008	2008
Holly Ave. / San Pedro Dr. (3)	Stop Sign	2008	2008
Driveway "A" / San Pedro Dr. (4)	Stop Sign	N/A	2008
Holly Ave. / Driveway "C" (5)	Stop Sign	N/A	2008

### **PREVIOUS RELATED TRAFFIC IMPACT STUDIES**

Trip generation data for proposed new developments were added into the background traffic volumes for this project for the following projects:

- 1) *Holly / San Pedro Commercial / Office Dev. Traffic Impact Study (NE Corner)*
- 2) *Daskalos Commercial Development (Holly Ave. between San Pedro and Louisiana)*
- 3) *Del Norte Plaza Commercial Development (SE corner of Holly Ave. / San Pedro Dr.)*

The 2008 NO BUILD Volumes used in this report incorporated projected trips generated from the above listed approved development where applicable.

The new Target Store located at the southwest corner of Paseo del Norte / San Pedro Dr. was opened for business on October 4, 2005. Since all of the traffic count data for this project was conducted subsequent to that date, then the additional traffic generated by the new Target facility was included in the actual traffic count data and, therefore, did not need to be added into the background traffic manually for this study.

### **GENERAL AREA CHARACTERISTICS**

Surrounding land uses include the existing miscellaneous industrial / commercial developments to the north of this site and a new commercial development immediately to the east of this site. The adjacent land to the west is mostly vacant land.

## **AREA STREET NETWORK**

Paseo del Norte is classified as a Limited Access Principal Arterial roadway on the Long Range Roadway Plan for the Albuquerque Metropolitan Area. It is currently a paved urban six-lane facility with raised medians and curbs and gutters on both sides of the street. The posted speed limit on Paseo del Norte from I-25 to Wyoming is 55 M.P.H.

San Pedro Drive is classified as a Collector roadway on the Long Range Roadway Plan for the Albuquerque Metropolitan Area. It is a rural-type two lane paved roadway north of Paseo del Norte with no raised medians. The Paseo del Norte reconstruction project (1999) included the reconstruction of San Pedro Dr. as a four lane divided urban roadway from Paseo del Norte to Holly Ave. San Pedro Dr. transitions to a two-lane roadway north of Holly Ave.

Alameda Blvd. is classified as a Principal Arterial roadway on the Long Range Roadway Plan for the Albuquerque Metropolitan Area. East of I-25, Alameda is a four lane paved roadway to San Pedro which transitions to two lanes at San Pedro and to the east.

## **EXISTING TRAFFIC VOLUMES**

2006 Average Weekday Traffic Volumes (AWDT) for major streets in the site plan area are shown on Page A-7 in the Appendix.

Existing AM and PM peak hour turning movement counts for the year 2005 to 2006 were provided by the City of Albuquerque or the consultant for the following intersections:

*Paseo del Norte / San Pedro Dr. (2005)*  
*Alameda Blvd. / San Pedro Dr. (2006)*

The existing traffic counts are included at the end of the Appendix.

## **EXISTING LEVELS OF SERVICE**

The Highway Capacity Manual defines Level of Service (LOS) for signalized intersections in terms of average controlled delay per vehicle as follows:

LOS A	10.0" or less	Most Vehicles do not stop
LOS B	10.1 to 20.0"	Some Vehicles stop
LOS C	20.1 to 35.0"	Significant number of vehicles stop
LOS D	35.1 to 55.0"	Many vehicles stop.
LOS E	55.1 to 80.0"	Limit of acceptable delay.
LOS F	> 80.0"	Unacceptable delay.

The Highway Capacity Manual defines Level of Service (LOS) for unsignalized intersections in terms of average controlled delay per vehicle also. However, the thresholds for the various levels of service for unsignalized intersections varies from that of signalized intersections. The following table summarizes the thresholds for various levels of service at unsignalized intersections:

LOS A	0 to 10.0"
LOS B	10 to 15"
LOS C	15 to 25"
LOS D	25 to 35"
LOS E	35 to 50"
LOS F	> 50"

Level of Service D is generally considered acceptable in urban areas and is the desirable base condition for analysis in a traffic study. In addition to consideration of the overall level-of-service of the signalized intersection, the levels-of-service of each individual movement should be considered also.

Existing Levels-of-Service were not calculated for this study. Instead, the 2008 NO BUILD and the 2008 BUILD Conditions were evaluated.

### **PROPOSED DEVELOPMENT**

The development plan is comprised of proposed retail commercial uses consisting of approximately 23,500 S.F. of gross leasable floor space. The land uses utilized for this analysis should be representative of the type of uses that will result from the proposed development. Should the development occur in such a manner that the actual number of trips generated significantly exceed that projected in this study, the City of Albuquerque or the New Mexico Department of Transportation may require an updated Traffic Impact Study.

Access is provided into the proposed facility via two full-access driveways accessing Holly Ave. The overall access to the project is as depicted on the Conceptual Site Development Plan on Page A-2 of this study.

### **TRIP GENERATION**

Projected trips were calculated from data in the Institute of Transportation Engineers Trip Generation report (7th Edition, 2003). Trips for the development were determined based on land uses projected to be associated with the zone change request for this property.

The resulting number of trips generated for the proposed development is summarized in the following table:

## *Holly Place II (Holly Ave. West of San Pedro)*

### Trip Generation Data

	USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
	DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet		Units					
	Tire Superstore (849)	7.00	143	6	3	7	8
	Shopping Center (820)	14.10	1,901	29	19	83	90
	Fast Food Restaurant w/ Drive-Thru Window (934)	2.40	1,191	65	62	43	40
	Subtotal		3,235	100	84	133	138

(Also, see Pages A-8 thru A-11 in the Appendix of this report for Trip Generation Worksheets and Summary Table.)

### **TRIP DISTRIBUTION**

#### Primary and Diverted Linked Trips:

Trips were distributed as follows:

#### Commercial Land Uses

Primary and diverted linked trips for the commercial land use development were distributed proportionally to the 2008 projected population of Data Analysis Subzones within a two mile radius of the proposed development. Population data for the years 2000 and 2025 were taken from the 2025 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico, S-03-01 (2000), Appendix B and Appendix C, supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2000 and 2025 was interpolated linearly to obtain 2008 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of data analysis subzones is shown in the Appendix. The commercial Trip Distribution map can be found in the Appendix on Page A-20.

### **TRIP ASSIGNMENT**

Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and logical routing. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments for commercial trips are shown in the Appendix on Pages A-21 thru A-22. No adjustments for Pass-by Trips on this project were applied since this project does not have direct access to Paseo del Norte.

### **BACKGROUND TRAFFIC GROWTH**

Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on the Mid-Region Council of Governments' (MRCOG) Regional Model Link Volume data for the years 2005 and 2010. The data from those years for each approach was evaluated to determine an annual growth rate projected

for each approach to each intersection analyzed in this study. The growth rate was determined by calculating the projected volume increase per year during the time period considered. The rate of growth resulting from that method of calculation was utilized as the growth rate for each approach if that calculated rate appeared feasible. However, there were some instances where the rate indicated a negative growth trend. In those cases, an appropriate growth rate from an adjacent segment of the same roadway was used or a generic 3% growth rate was utilized. Due to the potential for growth in the area, it was believed that a zero percent growth rate was inappropriate for this study. The MRCOG link volumes maps for the projected 2005 AM and PM Peak Hours and the projected 2010 AM and PM Peak Hours are shown contained in the Traffic Impact Study for the Del Norte Plaza Development on Holly Ave. east of San Pedro Dr. Growth rates utilized for this project are consistent with the growth rates utilized for the Del Norte Plaza - Holly / San Pedro Commercial Development (Northeast Corner) and for the Daskalos Commercial Development immediately to the east of this project. Additionally, the growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (Appendix Pages A-25 thru A-34).

### **PROJECTED PEAK HOUR TURNING MOVEMENTS FOR 2008 BUILDOUT**

The calculated annual growth rates were applied to the existing (2005, 2006 or 2007) peak hour traffic counts furnished by the City of Albuquerque (or counted by the consultant) to establish the 2008 background traffic volumes. Generated trips from one other recently approved project were added to obtain the 2008 NO BUILD Volumes as required. To these volumes, the generated trips based on implementation of the proposed land uses for this project were added to obtain the 2008 BUILD volumes for the intersection analyses. See Appendix Pages A-23 thru A-37 for further information regarding turning movement counts. 2008 NO BUILD and 2008 BUILD Volumes Maps and LOS are at the beginning of the Appendix of this report.

### **INTERSECTION CAPACITY ANALYSIS**

Intersection capacity analyses were performed in accordance with the procedures for signalized and unsignalized intersections in the Highway Capacity Manual, Special Report 209, Transportation Research Board, 2000, using Synchro Version 6 Software (Build 614) for signalized and unsignalized intersections. For signalized intersections, the operational method of analysis was used for 2008 conditions (NO BUILD and BUILD). In addition to utilizing the operational analysis for the intersections, the 1985 planning method may also be used to provide additional information at the intersection to help define critical lane volumes and to help analyze a solution.

Capacity analyses were performed for the following traffic conditions.

- ⇒ 2008 without development of the subject property (NO BUILD)
- ⇒ 2008 with development as per the assumed land uses considering total implementation of the plan.

The results of the 2008 NO BUILD and the 2008 BUILD capacity analyses are summarized in the following sections – *Results and Discussion of Intersection Capacity Analyses*.

## **RESULTS OF SIGNALIZED INTERSECTION CAPACITY ANALYSES**

### **IMPLEMENTATION YEAR (2008)**

#### **Intersection #1 – Paseo del Norte / San Pedro Dr. – Page A-38 thru A-46**

The results of the 2008 implementation year analysis of the signalized intersection of Paseo del Norte / San Pedro Dr. are summarized in the following table:

Paseo del Norte / San Pedro Dr.		AM Peak Hour		PM Peak Hour	
	2008	<u>NO BUILD</u>	<u>BUILD</u>	<u>NO BUILD</u>	<u>BUILD</u>
Existing Geometry		E – 57.0	E - 59.9	F – 87.5	F – 94.4

#### **Existing Geometry (Paseo del Norte / San Pedro Dr.)**

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Paseo del Norte	2	0	3	0	1
WB Paseo del Norte	2	0	3	0	1
NB San Pedro Dr.	2	0	1	0	1
SB San Pedro Dr.	2	0	1	0	1

Traffic counts for the intersection of Paseo del Norte / San Pedro Dr. were conducted in May, 2006. The new Target store opened in October, 2005. Therefore, the traffic count data utilized in this analysis included traffic generated by the Target Store.

Recent improvements to the intersection of Paseo del Norte / San Pedro based on the results of the Traffic Impact Study for the new Target facility have provided some needed capacity for the intersection, and it appears from this analysis that the operation of Paseo del Norte / San Pedro Dr. will be acceptable up to the implementation year of this project (2008). The projected levels-of-service at the implementation year is "E" for the 2008 AM Peak Hour BUILD Condition and "F" for the 2008 PM Peak Hour BUILD Condition. There are no improvements that can be made to the intersection at this time. The City recently implemented the dual eastbound and westbound left turn lanes.

The Queuing Analysis for this intersection results in the lanes length changes summarized in the following table:



## Queueing Analysis Summary Sheet

Project:  
Intersection:

Holly Place II (Holly Ave. West of San Pedro Dr.)  
Paseo del Norte / San Pedro Dr.

**2008**

<b>Eastbound</b>				<b>Left Turns</b>			<b>Thru Movements</b>			<b>Right Turns</b>		
<b>Approach</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>
<i>Existing Lane Length</i>	1	123	375				3	1,590	Cont	1	345	360
AM NO BUILD Queue	1	225	275				3	1,667	625	1	369	400
AM BUILD Queue	1	231	275				3	1,667	625	1	369	400
<i>Existing Lane Length</i>	1	198	375				3	2,162	Cont	1	133	360
PM NO BUILD Queue	1	257	375				3	2,254	>1,000	1	161	250
PM BUILD Queue	1	265	375				3	2,254	>1,000	1	161	250

<b>Westbound</b>				<b>Left Turns</b>			<b>Thru Movements</b>			<b>Right Turns</b>		
<b>Approach</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>
<i>Existing Lane Length</i>	1	116	375				3	2,042	Cont	1	142	375
AM NO BUILD Queue	1	160	200				3	2,085	750	1	293	325
AM BUILD Queue	1	160	200				3	2,085	750	1	358	375
<i>Existing Lane Length</i>	1	148	375				3	1,646	Cont	1	96	375
PM NO BUILD Queue	1	291	400				3	1,730	800	1	207	300
PM BUILD Queue	1	291	400				3	1,730	800	1	294	400

<b>Northbound</b>				<b>Left Turns</b>			<b>Thru Movements</b>			<b>Right Turns</b>		
<b>Approach</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>
<i>Existing Lane Length</i>	2	283	250				1	149	Cont	1	72	200
AM NO BUILD Queue	2	395	250				1	341	375	1	136	175
AM BUILD Queue	2	395	250				1	358	375	1	136	175
<i>Existing Lane Length</i>	2	231	250				1	186	Cont	1	204	200
PM NO BUILD Queue	2	385	300				1	422	550	1	442	575
PM BUILD Queue	2	385	300				1	444	575	1	442	575

<b>Southbound</b>				<b>Left Turns</b>			<b>Thru Movements</b>			<b>Right Turns</b>		
<b>Approach</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>	<b># Lanes</b>	<b>Vol.</b>	<b>Length (Ft.)</b>
<i>Existing Lane Length</i>	2	214	200				1	220	Cont	1	172	200
AM NO BUILD Queue	2	305	200				1	380	400	1	252	300
AM BUILD Queue	2	343	225				1	394	425	1	257	300
<i>Existing Lane Length</i>	2	379	200				1	221	Cont	1	195	200
PM NO BUILD Queue	2	476	375				1	355	475	1	302	425
PM BUILD Queue	2	539	400				1	378	500	1	310	425

Cycle Length: **AM** 100    **PM** 130

NOTE: Right Turn Queue Length can be reduced by 50%  
to account for right-turns-on-red and overlap phases.

The lengths of the existing northbound and southbound left turn lanes on San Pedro Dr. are restricted because of the existing intersections at Palomas Ave. on the south side and Holly Ave. on the north side. The left turn lanes cannot be lengthened. Also, it appears from the City of Albuquerque aerial photographs that there is not sufficient right-of-way to lengthen either the northbound or the southbound right turn lanes on San Pedro Dr.

## **RESULTS OF UNSIGNALIZED INTERSECTION CAPACITY ANALYSES**

### **IMPLEMENTATION YEAR (2008)**

#### **Intersection #2 – Alameda Blvd. / San Pedro Dr. – Page A-47 thru A-52**

The results of the analysis of the unsignalized intersection of Alameda Blvd. / San Pedro Dr. are summarized in the following table:

2008	AM Peak Hour		PM Peak Hour	
	NO BUILD	BUILD	NO BUILD	BUILD
<b>Alameda Blvd. / San Pedro Dr.</b>				
Eastbound Approach (Alameda Blvd.)	F - 110	F - 110	F - 388	F - 391
Westbound Approach (Alameda Blvd.)	F - 161	F - 161	F - 120	F - 121
Northbound Approach (San Pedro Dr.)	F - 138	F - 140	F - 119	F - 122
Southbound Approach (San Pedro Dr.)	F - 361	F - 363	F - 65	F - 66

The intersection of Alameda Blvd. / San Pedro Dr. will experience unacceptable delays during the projected 2008 AM and PM Peak Hours as an all-way stop controlled intersection.

Previous Traffic Impact Studies which analyzed the intersection of Alameda Blvd. / San Pedro Dr. have recommended a traffic signal at the intersection. However, the City of Albuquerque has opted to defer construction of a signal. For the purposed of this study, it is concluded that the impact of the Holly Plaza II development on the intersection of Alameda Blvd. / San Pedro Dr. is insignificant. Therefore, no recommendation is made with regard to this project.

A Peak Hour Signal Warrant Graph showing 2008 NO BUILD and BUILD volumes associated with this study is shown on Page A-52 in the Appendix of this report.

**Intersection #3 – Holly Ave. / San Pedro Dr. – Page A-53 thru A-57**

The results of the analysis of the unsignalized intersection of Holly Ave. / San Pedro Dr. are summarized in the following table:

2008 Holly Ave. / San Pedro Dr.	AM Peak Hour		PM Peak Hour	
	NO BUILD	BUILD	NO BUILD	BUILD
<b>Minor Street (Holly Ave.)</b>				
EB Left	D - 26	F - 53	D - 34	F - 573
EB Thru	D - 26	F - 53	D - 34	F - 573
EB Right	D - 26	F - 53	D - 34	F - 573
<b>Minor Street (Holly Ave.)</b>				
WB Left	F - 522	F - err	F - err	F - err
WB Thru	F - 522	F - err	F - err	F - err
WB Right	F - 522	F - err	F - err	F - err
<b>Major Street (San Pedro Dr.)</b>				
NB Left	A - 9	A - 10	B - 11	B - 14
SB Left	A - 10	A - 10	B - 11	B - 11

The analysis of the unsignalized intersection of Holly Ave. / San Pedro Dr. indicates that the eastbound and westbound approaches will operate at LOS "F" for the 2008 AM and PM Peak Hour BUILD Conditions associated with this development. The intersection of Holly Ave. / San Pedro Dr. is located approximately 550 feet north of Paseo del Norte (centerline to centerline). Therefore, the intersection is too close to Paseo del Norte to be considered for signalization.

Of critical concern is the northbound left turn queuing on San Pedro Dr. at Holly Ave. The Synchro HCM analysis for the unsignalized intersection of Holly / San Pedro Dr. reports that the calculated northbound left turn queue length (95<sup>th</sup> percentile confidence level) on San Pedro Dr. at Holly will be 26 feet long during the 2008 AM Peak Hour period and 59 feet long during the 2008 PM Peak Hour period.

The calculated southbound left turn queue lengths on San Pedro Dr. at Paseo del Norte is 225 feet during the 2008 AM Peak Hour period and 400 feet during the 2008 PM Peak Hour period.

The critical queuing is between Paseo del Norte and Holly Ave., and will be during the projected 2008 PM Peak Hour period. The calculated northbound left turn queue on San Pedro at Holly and the calculated southbound left turn queue on San Pedro at Paseo del Norte both combined is 459 feet plus approximately 100 feet for the transition. The distance on San Pedro Dr. available for queuing is approximately 470 feet (from southbound stop bar at Paseo del Norte to approximate centerline of Holly Ave.). The existing dual southbound left turn lanes on San Pedro Dr. at Paseo del Norte are approximately 210 feet long plus transition. However, one of the southbound left turn lanes extends north to Holly Ave., thus providing the needed queuing length for the southbound left turn volumes. The existing northbound left turn lane on San Pedro Dr. at Holly is 200 feet long plus transition, more than enough to contain the left turn queuing forecast in this report.

The delay on the eastbound and westbound legs of Holly Ave. at San Pedro are projected to be long. An exclusive left turn lane is recommended on the west leg of Holly Ave. at San Pedro Dr. if sufficient right-of-way exists.

**Intersection #4 –Holly Ave. / Driveway "A" – Page A-58 thru A-60**

The results of the analysis of the unsignalized intersection of Holly Ave. / Driveway "A" are summarized in the following table:

	2008 BUILD	
	AM	PM
<b>Holly Ave. / Driveway "A"</b>		
<b>Minor Street (Driveway "A")</b>		
NB Left	A - 9	A - 9
NB Right	A - 9	A - 9
<b>Major Street (Holly Ave.)</b>		
WB Left	A - 3	A - 3

The operation of Driveway "A" based on projected 2008 AM and PM Peak Hour BUILD Volumes in this report is acceptable. Driveway "A" is a full access unsignalized driveway.

**Intersection #5 – Holly Ave. / Driveway "B" – Page A-61 thru A-63**

The results of the analysis of the unsignalized intersection of Holly Ave. / Driveway "B" are summarized in the following table:

	2008 BUILD	
	AM	PM
<b>Holly Ave. / Driveway "B"</b>		
<b>Minor Street (Driveway "B")</b>		
NB Left	A - 9	A - 9
NB Right	A - 9	A - 9
<b>Major Street (Holly Ave.)</b>		
WB Left	A - 1	A - 1

The operation of Driveway "B" based on projected 2008 AM and PM Peak Hour BUILD Volumes in this report is acceptable. Driveway "B" is proposed as a full access unsignalized driveway.

It should be noted that Levels of Service (LOS) for unsignalized intersections cannot be compared directly with Levels of Service for signalized intersections. LOS for unsignalized intersections is based on reserve capacity, which is converted to generalized levels of delay; LOS for signalized intersections is based on actual delay in seconds..

**LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS**

<b><u>Average Delay</u></b> <b><u>(secs)</u></b>	<b><u>Level-of-Service</u></b>
≤ 10	A
> 10 and ≤ 15	B
> 15 and ≤ 25	C
> 25 and ≤ 35	D
> 35 and ≤ 50	E
> 50	F

Generally speaking, a Level-of-Service D or better is an acceptable parameter for design purposes.

## **CONCLUSIONS**

This analysis was conducted using the following methodology: Trip Generation was established using the Institute of Transportation Engineers' (ITE's) Trip Generation Manual (7<sup>th</sup> Edition). Generated Trips were distributed proportionately based on the Population Data Analysis Subzones within a 2-mile radius of the site; Growth rate of background traffic volumes was established from 2005 and 2010 COG Model Data from the 2025 data set; and the intersection analyses were performed in accordance with the 2000 Highway Capacity Manual, Special Report 209. The Traffic Impact Study showed a moderate increase in traffic congestion for the adjacent transportation network based on 100% buildout of the proposed project.

Of primary concern related to this project was the queuing on San Pedro Dr. between Holly Ave. and Paseo del Norte. The current design of San Pedro Dr. between Holly Ave. and Paseo del Norte is sufficient to accommodate the projected 2008 AM and PM Peak Hour queues associated with this project.

In summary, the proposed development of the Holly Plaza II Commercial Development facility on Holly Ave. west of San Pedro Dr. will present no significant adverse impact to the adjacent transportation system provided that the following recommendations are followed:

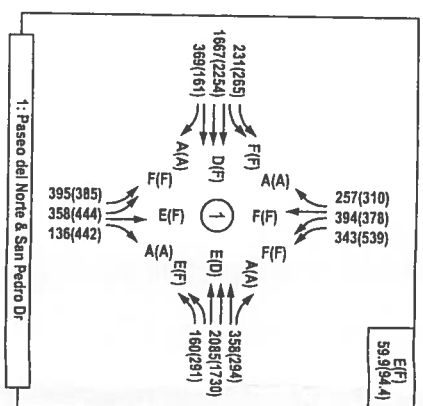
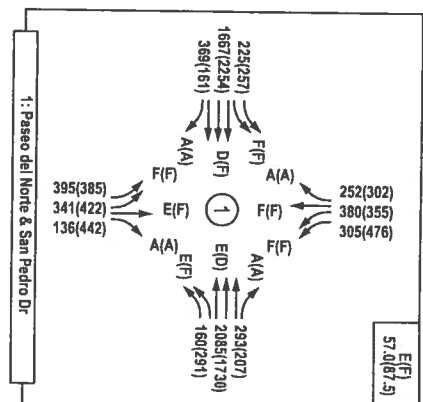
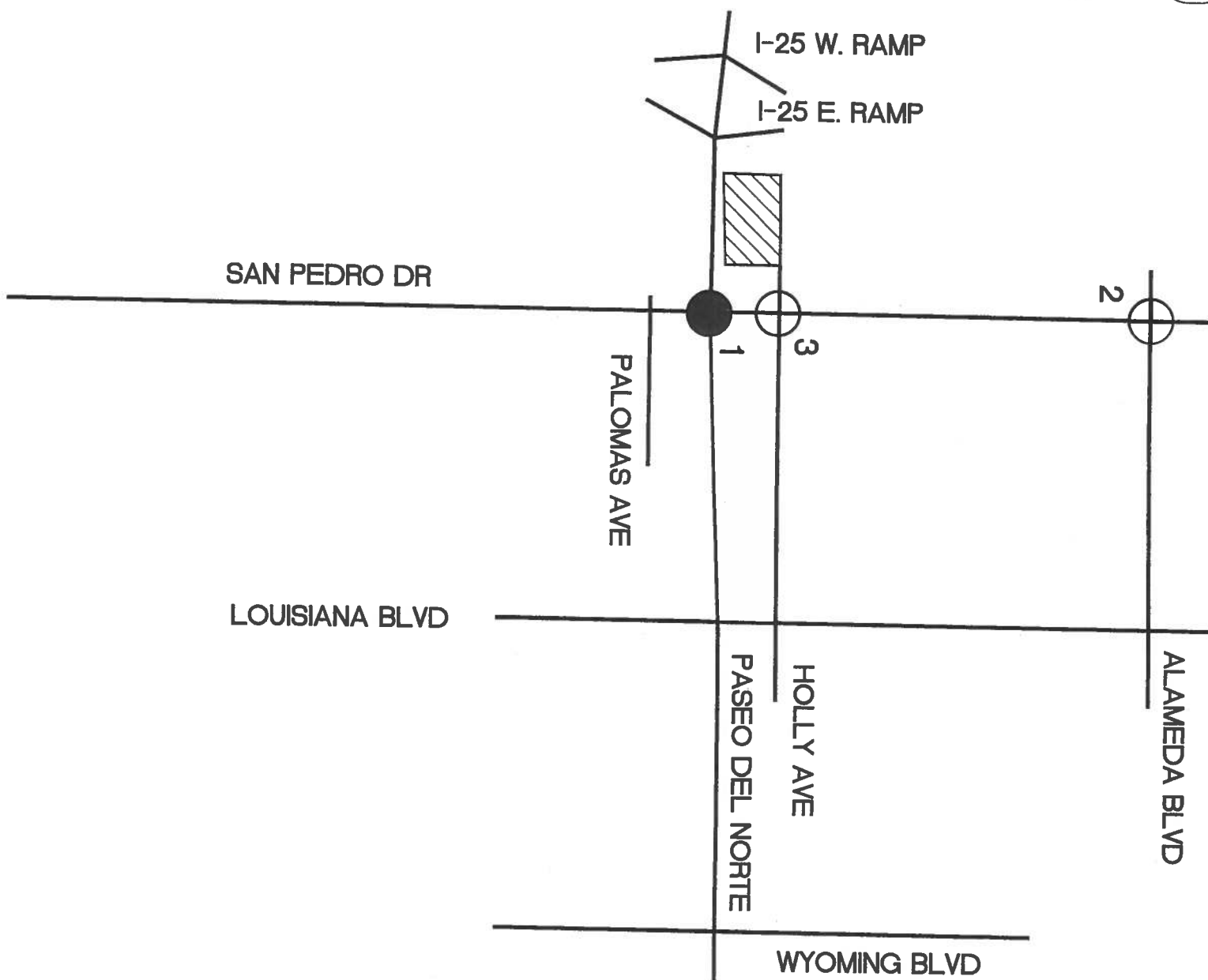
## **RECOMMENDATIONS**

### **FROM IMPLEMENTATION YEAR (2008) ANALYSIS**

- ◆ Design and construction of the proposed development should be such that adequate site distances are maintained at all proposed driveways and intersections, and at existing intersections contingent to this site.
- ◆ **Holly Ave. / San Pedro Dr.** – the intersection of Holly Ave. / San Pedro Dr. should be constructed as a four legged unsignalized intersection with Holly Ave. traffic being the stop controlled movement. The west leg of Holly Ave. should be constructed with two eastbound lanes (one for left turns and one for thru / right turns) if sufficient right-of-way exists or can be acquired. The left turn lane length should be a minimum of 150 feet long plus transition.
- ◆ Access to the project should be via two full access unsignalized driveways on Holly Ave. as depicted on the preliminary site development plan on Page A-2 in the Appendix of this report. Driveway "B" (West Driveway) and Driveway "A" (East Driveway) on Holly Ave. should be constructed as a full access unsignalized intersections. All driveways accessing this development should be constructed in compliance with City of Albuquerque D.P.M. requirements. Due to the fact that these two driveways are on minor streets and the projected delays are very low, left turn lanes on Holly Ave. and in the driveways themselves are not recommended.

## Appendix

<b><u>SITE INFORMATION</u></b>	
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Preliminary Site Development Plan	A-4
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<b><u>Supporting Data</u></b>	
Traffic Count Data / Intersection Data	A-64 thru A-66



NO RECOMMENDATION

NO BUILD Analysis

BUILD Analysis

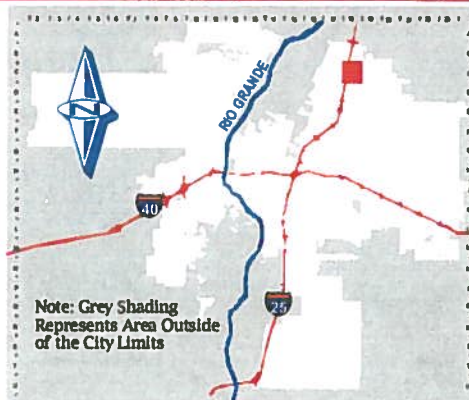
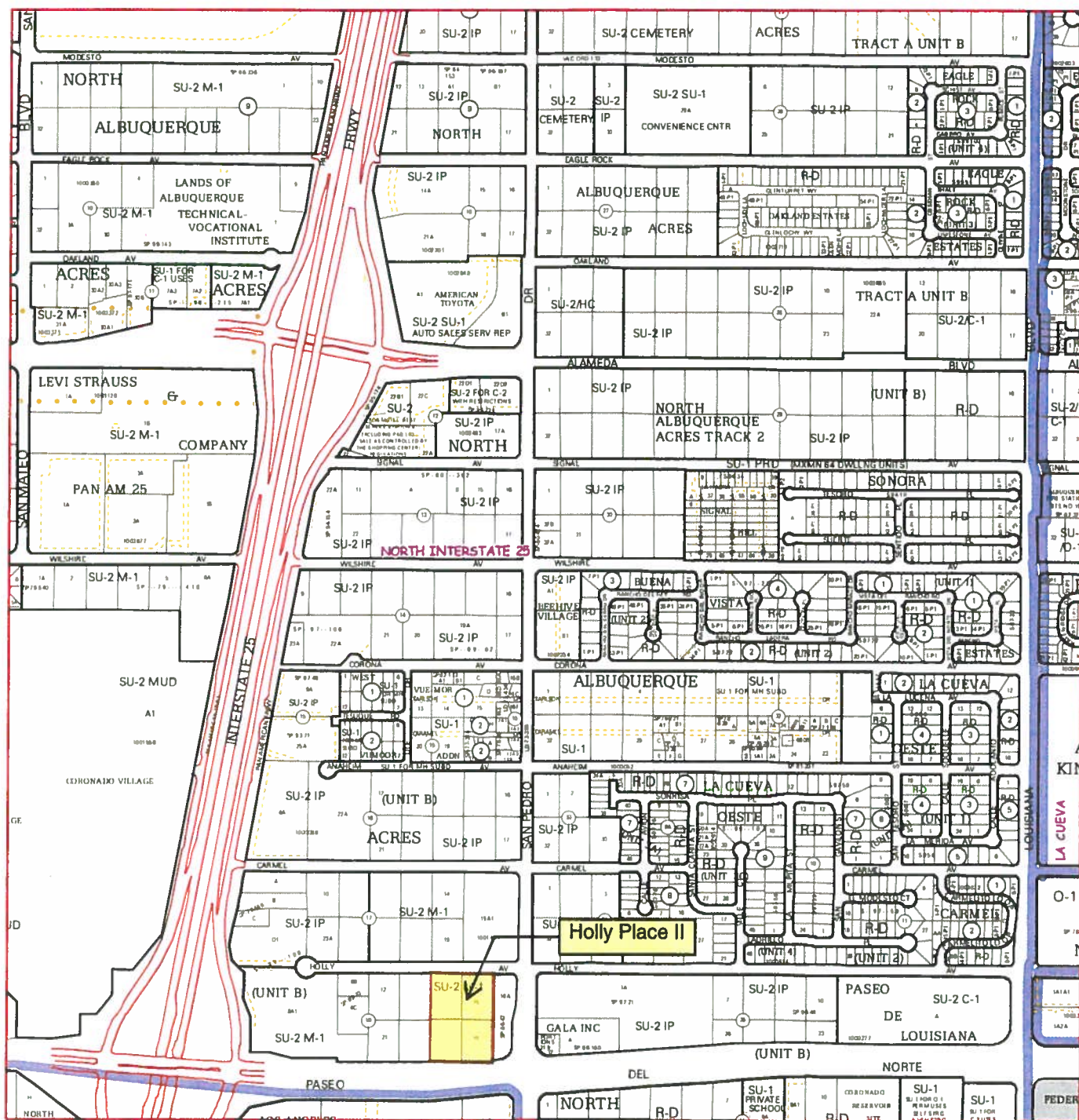
BUILD Analysis  
Mitigated

*Holly Plaza 99*  
South Side of Holly Ave. West of San Pedro Dr.  
LOS / Volume Analysis Map



## **APPENDIX**





Zone Atlas Page:

**C-18-Z**

### Selected Symbols

- SECTOR PLANS**
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone





CARMEL AVE.

HOLLY AVE.

PASEO DEL NORTE

SAN PEDRO DR.

PROJECT

GRAPHIC SCALE



( IN FEET )  
1 inch = 200 ft.



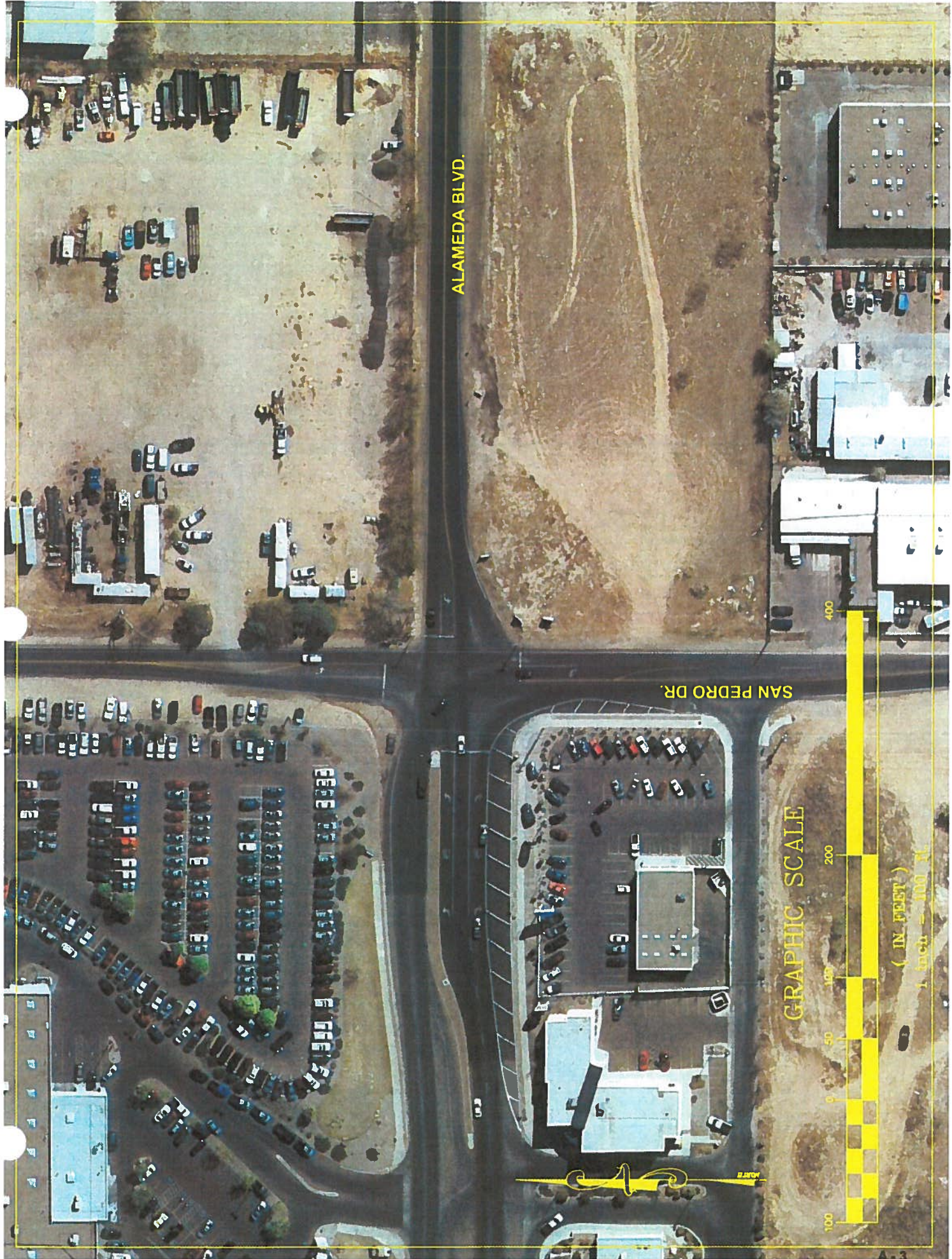
ALAMEDA BLVD.

SAN PEDRO DR.

GRAPHIC SCALE

( IN FEET )

1 inch = 100 ft





HOLLY AVENUE NE  
(60' R.O.W. PRESCRIPTIVE USE ROADWAY)

T 1 3

2 0

LOT 16-A, BLOCK 18, TRACT A, UNIT B,  
NORTH ALBUQUERQUE ACRES

(FILED 2/26/1996 VOL 96C EQUID. 87)

SHOPS  
8100 SF

SHOP  
6000 SF

LOT 14

LOT 14A  
85,594.46 SF  
1.96 AC

LOT 19A  
30,129 SF  
0.697 AC

DRIVE THRU  
± 2400 SF

DISCOUNT TIRE  
7000 SF

LOT 18  
37,949.03 SF  
0.87 AC

PASEO DEL NORTE NE  
(PUBLIC R.O.W. VARIES)

Preliminary Site Plan-08/15/07  
Holly Place  
Albuquerque, New Mexico



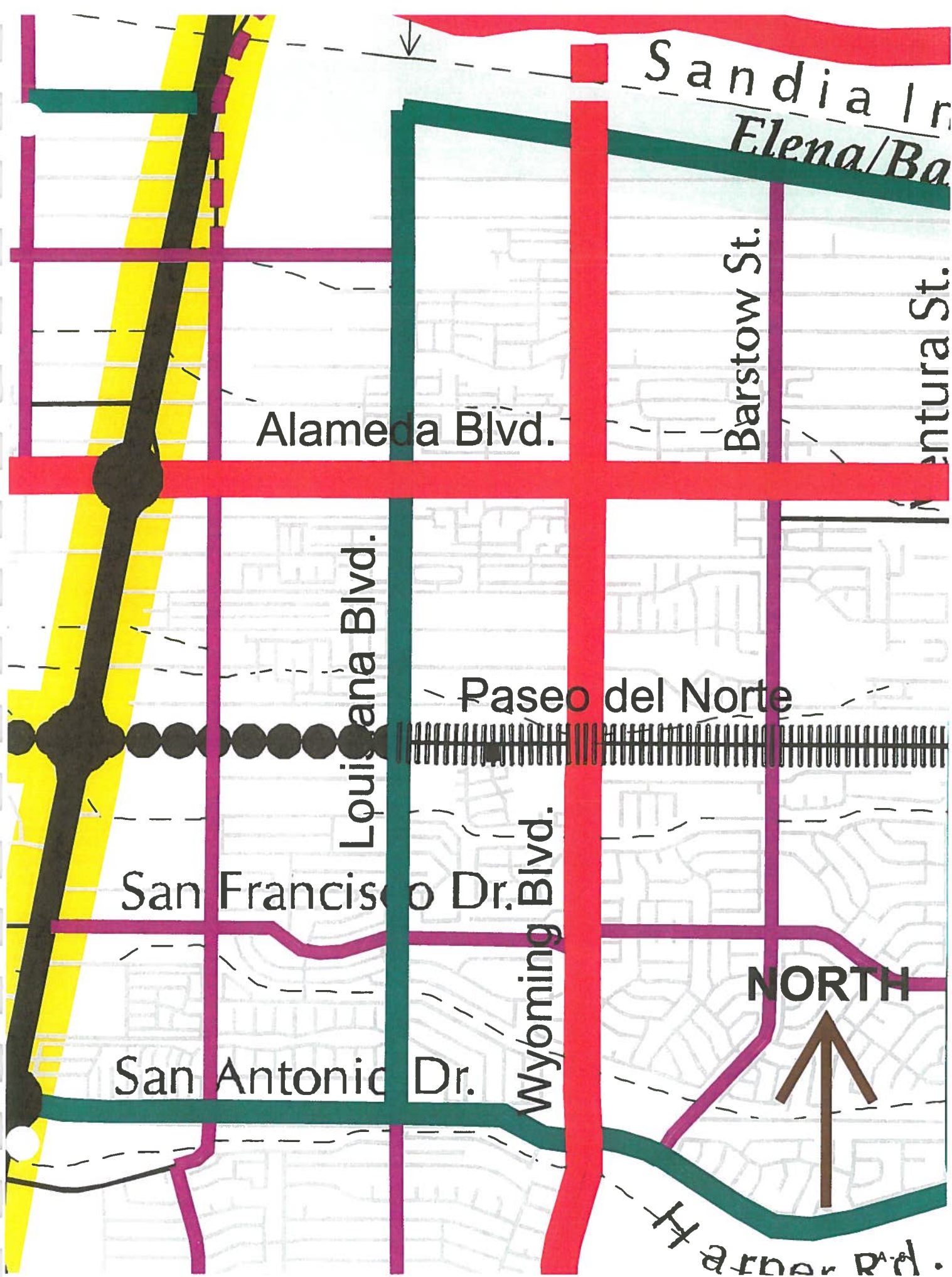
SCALE



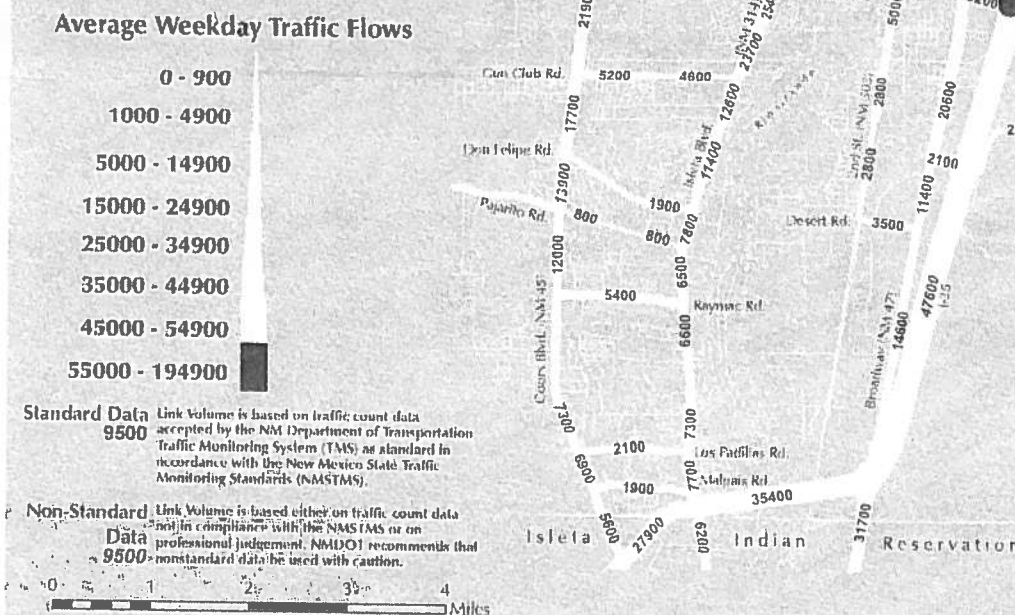
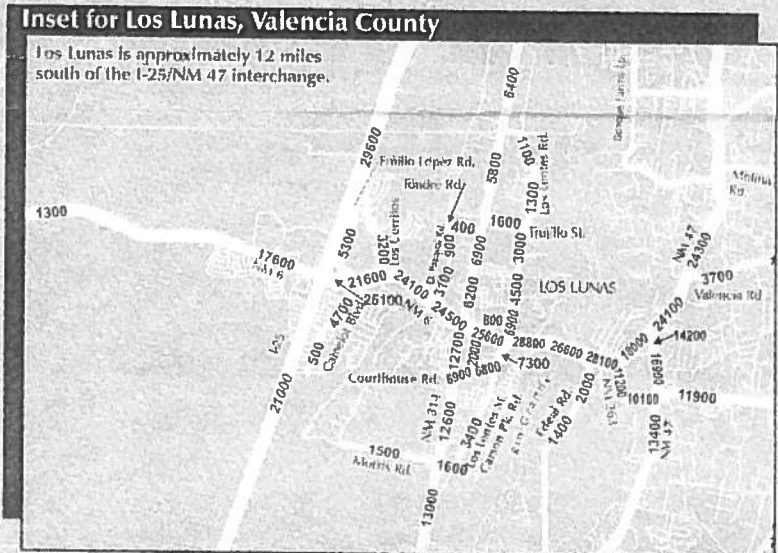
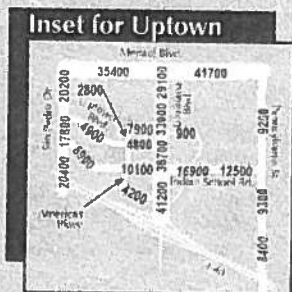
Conceptual Plan  
Subject to Change











Map prepared by the Mid-Region Council of Governments in cooperation with the New Mexico Department of Transportation, the local governments in the Albuquerque Metropolitan Planning Area, and the U.S. Department of Transportation, Federal Highway Administration.

## 2006 Traffic Flows for the Greater Albuquerque Area

*Holly Place II (Holly Ave. West of San Pedro)*  
**Trip Generation Data**

USE (ITE CODE)	DESCRIPTION	24 HR VOL		A. M. PEAK HR.		P. M. PEAK HR.	
		GROSS	EXIT	ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units					
	Tire Superstore (849)	143	6	3	7	8	
	Shopping Center (820)	1,901	29	19	83	90	
	Fast Food Restaurant w/ Drive-Thru Window (934)	1,191	65	62	43	40	
	Subtotal	3,235	100	84	133	138	

Units

7.00

14.10

2.40



*Holly Place II (Holly Ave. West of San Pedro)*  
**Trip Generation Data**

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
<b>Tire Superstore (849)</b>					
Units					
7.00		143	6	3	7
1,000 S.F.					8

**ITE Trip Generation Equations:**

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{20.36}{50\%} (X) + 0$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{1.34}{65\%} (X) + 0$$

65% Enter, 35% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{2.11}{47\%} (X) + 0$$

47% Enter, 53% Exit

Comments:  
 Tract No.

Based on ITE Trip Generation Manual - 7th Edition

*Holly Place II (Holly Ave. West of San Pedro)*  
**Trip Generation Data**

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
		GROSS			
		Units			
		14.10			
		1,901	29	19	83
		90			
		1,000 S.F.			

**ITE Trip Generation Equations:**

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = 0.65 \ln(X) + 5.83$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$\ln(T) = 0.6 \ln(X) + 2.29$$

61% Enter, 39% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$\ln(T) = 0.66 \ln(X) + 3.403$$

48% Enter, 52% Exit

Comments:  
 Tract No.

Based on ITE Trip Generation Manual - 7th Edition

*Holly Place II (Holly Ave. West of San Pedro)*  
**Trip Generation Data**

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Fast Food Restaurant w/ Drive-Thru Window (934)					
Units					
2.40					
1,000 S.F.					
	1,191	65	62	43	40

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{496.12 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

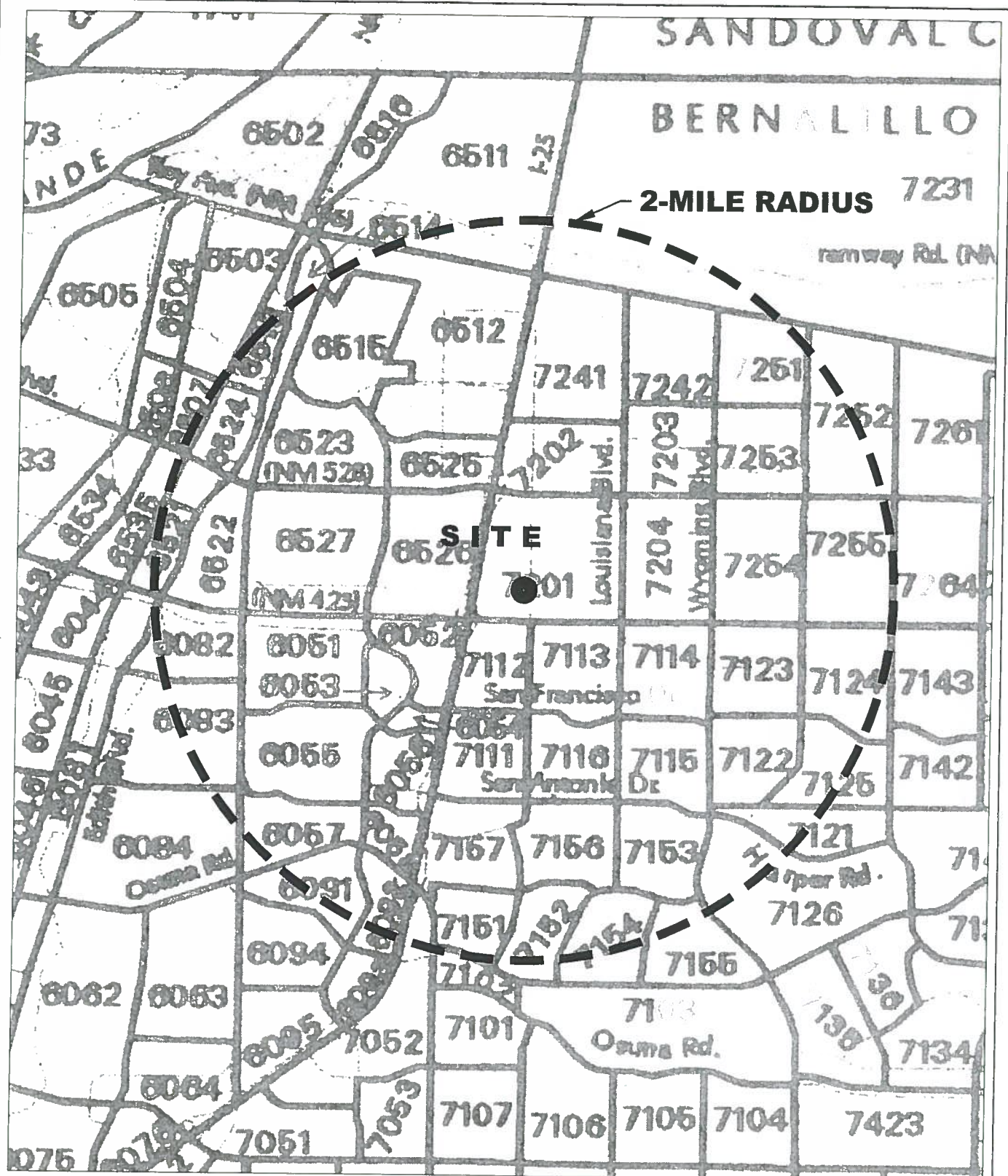
$$T = \frac{53.11 (X) + 0}{51\% \text{ Enter, } 49\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{34.64 (X) + 0}{52\% \text{ Enter, } 48\% \text{ Exit}}$$

Comments:  
 Tract No.

Based on ITE Trip Generation Manual - 7th Edition



**DATA ANALYSIS SUBZONE (DASZ) MAP**  
**Holly II Plaza Commercial Development**

# **Trip Distribution Table** **Holly II Plaza Commercial Development**

Data Analysis Subzone Population Data for Determination of Local Trip Distribution for Proposed Retail Commercial Trips

2000 and 2025 Data Taken from Met Region Council of Governments' 2025 Socioeconomic  
 2023 Socioeconomic Forecasts by Data Analysis Subzones for the Met Region of New Mexico (S-03-01)

DASZ #	% Sub Area In Study	2000 Population		2025 Population		Interpolated Population for the Year 2008	Population In Study	Population / Distance	San Pedro Dr North		(LN)		Alameda Blvd East	
		2000	2025	2000	2025				% Utilizing	% Population Utilizing	% Utilizing	% Population Utilizing	% Utilizing	% Population Utilizing
6051	100%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0	0.00%
6052	100%	0	0	0	0	0	3	3	0%	0.00%	0	0%	0	0.00%
6053	100%	0	14	4	4	4	4	4	0%	0.00%	0	0%	0	0.00%
6054	100%	2	2	2	2	2	2	2	0%	0.00%	0	0%	0	0.00%
6055	100%	0	7	2	2	2	2	2	0%	0.00%	0	0%	0	0.00%
6056	100%	0	23	7	7	7	7	7	0%	0.00%	0	0%	0	0.00%
6057	60%	6	6	6	6	6	4	4	0%	0.00%	0	0%	0	0.00%
6058	100%	52	57	54	54	54	54	54	0%	0.00%	0	0%	0	0.00%
6059	30%	57	58	57	57	57	17	17	0%	0.00%	0	0%	0	0.00%
6060	40%	322	2404	988	99	99	99	99	0%	0.00%	0	0%	0	0.00%
6061	70%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0	0.00%
6062	5%	33	47	37	2	2	2	2	0%	0.00%	0	0%	0	0.00%
6063	85%	3	379	123	105	105	105	105	0%	0.00%	0	0%	0	0.00%
6064	30%	101	207	135	41	41	41	41	0%	0.00%	0	0%	0	0.00%
6065	65%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0	0.00%
6066	55%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0	0.00%
6067	100%	602	633	612	612	612	612	612	0%	0.00%	0	0%	0	0.00%
6068	100%	387	453	408	408	408	408	408	0%	0.00%	0	0%	0	0.00%
6069	100%	1330	1263	1309	1309	1309	1309	1309	0%	0.00%	0	0%	0	0.00%
6070	100%	6	6	6	1	1	1	1	0%	0.00%	0	0%	0	0.00%
6071	15%	484	463	473	73	73	73	73	0%	0.00%	0	0%	0	0.00%
6072	100%	1176	1184	1179	1179	1179	1179	1179	0%	0.00%	0	0%	0	0.00%
6073	100%	893	1145	974	974	974	974	974	0%	0.00%	0	0%	0	0.00%
6074	100%	1486	1408	1461	1461	1461	1461	1461	0%	0.00%	0	0%	0	0.00%
6075	100%	1541	1450	1512	1512	1512	1512	1512	0%	0.00%	0	0%	0	0.00%
6076	100%	1275	1372	1306	1306	1306	1306	1306	0%	0.00%	0	0%	0	0.00%
6077	95%	952	920	942	895	895	895	895	0%	0.00%	0	0%	0	0.00%
6078	100%	1310	1269	1297	1297	1297	1297	1297	0%	0.00%	0	0%	0	0.00%
6079	100%	1268	1279	1416	1416	1416	1416	1416	0%	0.00%	0	0%	0	0.00%
6080	100%	1473	1491	1479	1479	1479	1479	1479	0%	0.00%	0	0%	0	0.00%
6081	100%	1384	1297	1356	1356	1356	1356	1356	0%	0.00%	0	0%	0	0.00%
6082	55%	0	1209	387	213	213	213	213	0%	0.00%	0	0%	0	0.00%
6083	25%	1441	1359	1415	354	354	354	354	0%	0.00%	0	0%	0	0.00%
6084	45%	2109	1934	2053	924	924	924	924	0%	0.00%	0	0%	0	0.00%
6085	100%	1029	964	1008	1008	1008	1008	1008	0%	0.00%	0	0%	0	0.00%
6086	100%	1416	1324	1388	1388	1388	1388	1388	0%	0.00%	0	0%	0	0.00%
6087	100%	1420	1336	1393	1393	1393	1393	1393	0%	0.00%	0	0%	0	0.00%
6088	100%	1262	1156	1228	1228	1228	1228	1228	0%	0.00%	0	0%	0	0.00%
6089	100%	902	836	861	881	881	881	881	0%	0.00%	0	0%	0	0.00%
6090	60%	1525	1415	1490	894	894	894	894	0%	0.00%	0	0%	0	0.00%
6091	100%	736	1232	895	895	895	895	895	0%	0.00%	0	0%	0	0.00%
6092	100%	1826	2475	2034	2034	2034	2034	2034	0%	0.00%	0	0%	0	0.00%
6093	100%	106	214	141	141	141	141	141	0%	0.00%	0	0%	0	0.00%
6094	100%	281	1362	636	636	636	636	636	0%	0.00%	0	0%	0	0.00%
6095	100%	360	1666	778	778	778	778	778	0%	0.00%	0	0%	0	0.00%
6096	5%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0	0.00%
6097	100%	0	647	207	207	207	207	207	0%	0.00%	0	0%	0	0.00%
6098	100%	34	371	142	142	142	142	142	0%	0.00%	0	0%	0	0.00%
6099	100%	117	374	199	199	199	199	199	0%	0.00%	0	0%	0	0.00%
6100	100%	252	620	370	74	74	74	74	0%	0.00%	0	0%	0	0.00%
6101	100%	1109	1249	1154	1154	1154	1154	1154	0%	0.00%	0	0%	0	0.00%
6102	100%	1631	1045	1635	1635	1635	1635	1635	0%	0.00%	0	0%	0	0.00%
6103	100%	894	2022	1255	1255	1255	1255	1255	0%	0.00%	0	0%	0	0.00%
6104	10%	333	475	378	38	38	38	38	0%	0.00%	0	0%	0	0.00%
6105	50%	548	999	692	346	346	346	346	0%	0.00%	0	0%	0	0.00%
6106				38,926	33,443	33,443	33,443	33,443	100.00%		167	0.50%	1,861	5.56%



# **Trip Distribution Table** **Holly II Plaza Commercial Development**

Data Analysis Subzone Population Data for Determination of Local Trip Distribution for Proposed Retail Commercial Trips  
 2000 and 2025 Data Taken from Mid-Region Council of Governments' 2025 Socioeconomic  
 2025 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico (S-03-01)

DASZ #	% Sub Area In Study	2000 Population	2025 Population	Interpolated Population for the Year 2006	Population In Study	Population / Distance	Percent Population	(HE)		(PNE)		(LS)	
								% Utilizing	Population Utilizing	% Utilizing	Population Utilizing	% Utilizing	Population Utilizing
Boundary Specified on DASZ Map													
6051	100%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
6052	100%	0	9	3	3	3	0.01%	0%	0	0%	0	0%	0
6053	100%	0	14	4	4	4	0.01%	0%	0	0%	0	0%	0
6054	100%	2	2	2	2	2	0.01%	0%	0	0%	0	0%	0
6055	100%	0	7	2	2	2	0.01%	0%	0	0%	0	0%	0
6056	100%	0	23	7	7	7	0.02%	0%	0	0%	0	0%	0
6057	60%	6	6	6	6	6	0.01%	0%	0	0%	0	0%	0
6058	100%	52	57	54	54	54	0.16%	0%	0	0%	0	0%	0
6059	30%	57	58	57	17	17	0.05%	0%	0	0%	0	0%	0
6060	10%	322	2404	988	99	99	0.30%	0%	0	0%	0	0%	0
6061	40%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
6062	70%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
6511	5%	33	47	37	2	2	0.01%	0%	0	0%	0	0%	0
6512	85%	3	379	123	105	105	0.31%	0%	0	0%	0	0%	0
6514	30%	101	207	135	41	41	0.12%	0%	0	0%	0	0%	0
6515	65%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
6522	55%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
6523	100%	602	633	612	612	612	1.83%	0%	0	0%	0	0%	0
6525	100%	387	463	408	408	408	1.22%	0%	0	0%	0	0%	0
6526	100%	1330	1263	1309	1309	1309	3.91%	0%	0	0%	0	0%	0
6527	100%	0	2	1	1	1	0.00%	0%	0	0%	0	0%	0
7052	10%	6	6	6	1	1	0.00%	0%	0	0%	0	0%	0
7102	15%	494	463	484	73	73	0.22%	0%	0	0%	0	0%	0
7111	100%	1176	1184	1179	1179	1179	3.53%	0%	0	0%	0	0%	0
7112	100%	5	10	7	7	7	0.02%	0%	0	0%	0	0%	0
7113	100%	883	1145	974	974	974	2.91%	0%	0	0%	0	0%	0
7114	100%	1486	1408	1461	1461	1461	4.37%	0%	0	0%	0	0%	0
7115	100%	1541	1450	1512	1512	1512	4.52%	0%	0	0%	0	0%	0
7116	100%	1275	1372	1306	1306	1306	3.91%	0%	0	0%	0	0%	0
7121	95%	992	920	942	895	895	2.68%	0%	0	0%	0	0%	0
7122	100%	1310	1269	1297	1297	1297	3.88%	0%	0	0%	0	0%	0
7123	100%	1268	1279	1416	1416	1416	4.23%	0%	0	0%	0	0%	0
7124	100%	1473	1491	1479	1479	1479	4.42%	0%	0	0%	0	0%	0
7125	100%	1384	1297	1356	1356	1356	4.05%	0%	0	0%	0	0%	0
7126	55%	0	1209	387	213	213	0.64%	0%	0	0%	0	0%	0
7142	25%	1441	1359	1415	354	354	1.06%	0%	0	0%	0	0%	0
7143	45%	2109	1931	2053	924	924	2.76%	0%	0	0%	0	0%	0
7151	100%	1029	964	1008	1008	1008	3.01%	0%	0	0%	0	0%	0
7152	100%	1418	1324	1388	1388	1388	4.15%	0%	0	0%	0	0%	0
7153	100%	1420	1336	1393	1393	1393	4.17%	0%	0	0%	0	0%	0
7154	100%	1621	1156	1228	1228	1228	3.67%	0%	0	0%	0	0%	0
7155	100%	902	836	881	881	881	2.63%	0%	0	0%	0	0%	0
7156	60%	1525	1415	1490	894	894	2.67%	0%	0	0%	0	0%	0
7157	100%	736	1232	895	895	895	2.68%	0%	0	0%	0	0%	0
7201	100%	1826	2475	2034	2034	2034	6.08%	0%	0	0%	0	0%	0
7202	100%	105	105	141	141	141	0.42%	0%	0	0%	0	0%	0
7203	100%	294	1362	636	636	636	1.90%	0%	0	0%	0	0%	0
7204	100%	360	1666	778	778	778	2.33%	0%	0	0%	0	0%	0
7231	5%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
7241	100%	0	647	207	207	207	0.62%	0%	0	0%	0	0%	0
7242	100%	34	371	142	142	142	0.42%	0%	0	0%	0	0%	0
7251	100%	117	374	199	199	199	0.60%	0%	0	0%	0	0%	0
7252	20%	252	620	370	74	74	0.22%	0%	0	0%	0	0%	0
7253	100%	1109	1249	1154	1154	1154	3.45%	0%	0	0%	0	0%	0
7254	100%	1631	1645	1635	1635	1635	4.89%	0%	0	0%	0	0%	0
7255	100%	894	2022	1255	1255	1255	3.75%	0%	0	0%	0	0%	0
7261	10%	333	475	378	38	38	0.11%	0%	0	0%	0	0%	0
7261	50%	548	999	692	346	346	1.03%	0%	0	0%	0	0%	0
				38,926	33,443	33,443	100.00%		1,480		4,362		6,385
									4.43%		13.04%		19.09%

# Trip Distribution Table Holly II Plaza Commercial Development

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips  
2000 and 2025 Data Taken from Mid-Region Council of Governments' 2025 Socioeconomic  
2025 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico (S-03-01)

DASZ #	% Sub Area In Study	2000 Population	2025 Population	Interpolated Population for the Year 2008	Population In Study	Population / Distance	Percent Population	San Antonio Dr East:			San Pedro Dr South			San Antonio Dr West		
								% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map																
7051	100%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7052	100%	0	0	0	3	3	0.01%	0%	0.01%	0	0%	0.00%	0	0%	0.00%	0
7053	100%	0	0	0	4	4	0.01%	0%	0.01%	0	0%	0.00%	0	0%	0.00%	0
7054	100%	2	14	4	4	4	0.01%	0%	0.01%	0	0%	0.00%	0	0%	0.00%	0
7055	100%	2	2	2	2	2	0.01%	0%	0.01%	0	0%	0.00%	0	0%	0.00%	0
7056	100%	0	7	2	2	2	0.02%	0%	0.02%	0	0%	0.00%	0	0%	0.00%	0
7057	60%	0	23	7	7	7	0.02%	0%	0.02%	0	0%	0.00%	0	0%	0.00%	0
7058	100%	6	6	6	6	6	0.01%	0%	0.01%	0	0%	0.00%	0	0%	0.00%	0
7059	100%	52	57	54	54	54	0.16%	0%	0.16%	0	0%	0.00%	0	0%	0.00%	0
7060	30%	57	58	57	17	17	0.05%	0%	0.05%	0	0%	0.00%	0	0%	0.00%	0
7061	10%	322	2404	989	99	99	0.30%	0%	0.30%	0	0%	0.00%	0	0%	0.00%	0
7062	40%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7063	70%	33	47	37	2	2	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7064	5%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7065	85%	3	379	123	105	105	0.01%	0%	0.01%	0	0%	0.00%	0	0%	0.00%	0
7066	30%	101	207	135	41	41	0.12%	0%	0.12%	0	0%	0.00%	0	0%	0.00%	0
7067	65%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7068	55%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7069	100%	602	633	612	612	612	1.83%	0%	1.83%	0	0%	0.00%	0	0%	0.00%	0
7070	100%	387	453	408	408	408	1.22%	0%	1.22%	0	0%	0.00%	0	0%	0.00%	0
7071	100%	1330	1263	1309	1309	1309	3.91%	0%	3.91%	0	0%	0.00%	0	0%	0.00%	0
7072	100%	0	2	1	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7073	10%	6	6	6	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7074	15%	484	483	484	73	73	0.22%	0%	0.22%	0	0%	0.00%	0	0%	0.00%	0
7075	100%	1176	1184	1179	1179	1179	3.53%	0%	3.53%	0	0%	0.00%	0	0%	0.00%	0
7076	100%	893	1145	974	974	974	2.91%	0%	2.91%	0	0%	0.00%	0	0%	0.00%	0
7077	100%	1466	1408	1461	1461	1461	4.37%	0%	4.37%	0	0%	0.00%	0	0%	0.00%	0
7078	100%	1541	1450	1512	1512	1512	4.52%	0%	4.52%	0	0%	0.00%	0	0%	0.00%	0
7079	100%	1275	1372	1306	1306	1306	3.91%	0%	3.91%	0	0%	0.00%	0	0%	0.00%	0
7080	85%	952	920	942	895	895	2.68%	10%	2.68%	131	0%	0.00%	0	0%	0.00%	0
7081	100%	1310	1269	1297	1297	1297	3.88%	0%	3.88%	0	0%	0.00%	0	0%	0.00%	0
7082	100%	1268	1228	1248	1416	1416	4.23%	0%	4.23%	0	0%	0.00%	0	0%	0.00%	0
7083	100%	1473	1491	1479	1479	1479	4.42%	0%	4.42%	0	0%	0.00%	0	0%	0.00%	0
7084	100%	1384	1297	1356	1356	1356	4.05%	0%	4.05%	0	0%	0.00%	0	0%	0.00%	0
7085	55%	0	1209	387	213	213	0.64%	0%	0.64%	0	0%	0.00%	0	0%	0.00%	0
7086	25%	1441	1359	1415	213	213	0.64%	0%	0.64%	0	0%	0.00%	0	0%	0.00%	0
7087	45%	2109	1934	2053	924	924	2.76%	0%	2.76%	0	0%	0.00%	0	0%	0.00%	0
7088	100%	1028	964	1008	1008	1008	3.01%	0%	3.01%	0	0%	0.00%	0	0%	0.00%	0
7089	100%	1418	1324	1388	1388	1388	4.18%	0%	4.18%	0	0%	0.00%	0	0%	0.00%	0
7090	100%	1420	1336	1393	1393	1393	4.17%	0%	4.17%	0	0%	0.00%	0	0%	0.00%	0
7091	100%	1262	1156	1228	1228	1228	3.71%	0%	3.71%	0	0%	0.00%	0	0%	0.00%	0
7092	100%	902	836	881	881	881	2.67%	0%	2.67%	0	0%	0.00%	0	0%	0.00%	0
7093	60%	1525	1415	1490	894	894	2.67%	0%	2.67%	0	0%	0.00%	0	0%	0.00%	0
7094	100%	736	1232	895	895	895	2.66%	0%	2.66%	0	0%	0.00%	0	0%	0.00%	0
7095	100%	1826	2475	2034	2034	2034	6.08%	0%	6.08%	0	0%	0.00%	0	0%	0.00%	0
7096	100%	105	715	141	141	141	0.42%	0%	0.42%	0	0%	0.00%	0	0%	0.00%	0
7097	100%	294	1362	636	636	636	1.90%	0%	1.90%	0	0%	0.00%	0	0%	0.00%	0
7098	100%	360	1666	778	778	778	2.33%	0%	2.33%	0	0%	0.00%	0	0%	0.00%	0
7099	5%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7100	100%	0	647	207	207	207	0.62%	0%	0.62%	0	0%	0.00%	0	0%	0.00%	0
7101	100%	34	371	142	142	142	0.42%	0%	0.42%	0	0%	0.00%	0	0%	0.00%	0
7102	100%	117	370	199	199	199	0.60%	0%	0.60%	0	0%	0.00%	0	0%	0.00%	0
7103	20%	252	620	320	320	320	0.96%	0%	0.96%	0	0%	0.00%	0	0%	0.00%	0
7104	100%	1108	1249	1154	1154	1154	3.45%	0%	3.45%	0	0%	0.00%	0	0%	0.00%	0
7105	100%	1631	1645	1635	1635	1635	4.99%	0%	4.99%	0	0%	0.00%	0	0%	0.00%	0
7106	100%	894	2022	1255	1255	1255	3.75%	0%	3.75%	0	0%	0.00%	0	0%	0.00%	0
7107	10%	333	475	378	38	38	0.11%	0%	0.11%	0	0%	0.00%	0	0%	0.00%	0
7108	50%	546	998	692	346	346	1.03%	0%	1.03%	0	0%	0.00%	0	0%	0.00%	0
7109					33,443	33,443	100.00%			131	0.39%		3,731	11.16%		185
7110																0.46%

# Trip Distribution Table Holly II Plaza Commercial Development

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips  
2000 and 2025 Data Taken from Mid-Region Council of Governments' 2025 Socioeconomic  
2025 Socioeconomic Forecasts for Data Analysis Subzones for the Mid-Region of New Mexico (S-08-01)

DASZ #	% Sub Area in Study	2000 Population		2025 Population		Interpolated Population for the Year 2009	Population in Study	Population / Distance	(IS)			(SC1)			(PNW)		
		2000	2000 Population Boundary Specified on DASZ Map	2025	2025 Population				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
7051	100%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0
7052	100%	0	0	9	9	3	3	3	0%	0.01%	0	30%	0.00%	0	70%	0.01%	2
7053	100%	0	0	14	14	4	4	4	0%	0.01%	0	30%	0.00%	0	70%	0.01%	3
7054	100%	2	2	2	2	2	2	2	0%	0.01%	0	70%	0.00%	0	30%	0.00%	1
7055	100%	0	0	7	7	2	2	2	0%	0.01%	0	0%	0.00%	0	30%	0.00%	1
7056	100%	0	0	23	23	7	7	7	0%	0.02%	0	0%	0.00%	0	30%	0.00%	1
7057	60%	6	6	6	6	6	4	4	0%	0.01%	0	0%	0.00%	0	30%	0.01%	2
7058	100%	52	52	57	57	54	54	54	0%	0.16%	0	0%	0.00%	0	30%	0.00%	1
7059	30%	57	57	58	58	57	17	17	0%	0.05%	0	0%	0.00%	0	30%	0.00%	1
7060	10%	322	322	2404	2404	988	98	98	0%	0.30%	0	0%	0.00%	0	100%	0.05%	16
7061	40%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0.00%	0	100%	0.05%	17
7062	70%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0.00%	0	100%	0.30%	99
7063	5%	33	33	47	47	37	2	2	100%	0.00%	0	0%	0.00%	0	50%	0.00%	0
7064	85%	3	3	379	379	123	2	2	0%	0.01%	0	0%	0.00%	0	1%	0.00%	0
7065	30%	101	101	207	207	135	41	41	0%	0.12%	0	0%	0.00%	0	1%	0.00%	0
7066	55%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0.00%	0	40%	0.05%	16
7067	55%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0
7068	100%	602	602	633	633	612	612	612	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0
7069	100%	387	387	463	463	408	408	408	0%	1.93%	0	0%	0.00%	0	0%	0.00%	0
7070	100%	1330	1330	1263	1263	1309	1309	1309	0%	3.91%	0	0%	0.00%	0	0%	0.00%	0
7071	100%	0	0	2	2	1	1	1	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7072	10%	6	6	6	6	6	1	1	100%	0.00%	0	0%	0.00%	0	40%	1.57%	524
7101	15%	494	494	463	463	484	73	73	0%	0.22%	0	0%	0.00%	0	100%	0.00%	1
7102	100%	1176	1176	1104	1104	1179	73	73	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7111	100%	5	5	10	10	7	7	7	45%	1.59%	531	45%	1.59%	531	0%	0.00%	0
7113	100%	983	983	1145	1145	974	974	974	0%	0.00%	0	100%	0.02%	7	0%	0.00%	0
7114	100%	1486	1486	1408	1408	1461	1461	1461	0%	3.77%	0	50%	1.46%	487	0%	0.00%	0
7115	100%	1541	1541	1450	1450	1512	1512	1512	0%	4.52%	0	0%	0.00%	0	0%	0.00%	0
7116	100%	1275	1275	1372	1372	1306	1306	1306	0%	3.91%	0	0%	0.00%	0	0%	0.00%	0
7131	95%	952	952	920	920	946	895	895	0%	2.68%	0	45%	1.76%	588	0%	0.00%	0
7132	100%	1310	1310	1269	1269	1297	1297	1297	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7133	100%	1288	1288	1729	1729	1416	1416	1416	0%	4.23%	0	0%	0.00%	0	0%	0.00%	0
7134	100%	1473	1473	1491	1491	1479	1479	1479	0%	4.42%	0	0%	0.00%	0	0%	0.00%	0
7154	100%	1384	1384	1297	1297	1356	1356	1356	0%	4.95%	0	0%	0.00%	0	0%	0.00%	0
7156	55%	0	0	1209	1209	387	213	213	0%	0.64%	0	0%	0.00%	0	0%	0.00%	0
7142	25%	1441	1441	1359	1359	1415	354	354	0%	1.06%	0	0%	0.00%	0	0%	0.00%	0
7143	45%	2109	2109	1934	1934	2053	924	924	0%	2.76%	0	0%	0.00%	0	0%	0.00%	0
7151	100%	1059	1059	964	964	1008	1008	1008	0%	3.01%	0	0%	0.00%	0	0%	0.00%	0
7152	100%	1418	1418	1324	1324	1388	1388	1388	0%	4.15%	0	0%	0.00%	0	0%	0.00%	0
7153	100%	1420	1420	1336	1336	1393	1393	1393	0%	4.17%	0	0%	0.00%	0	0%	0.00%	0
7154	100%	1262	1262	1156	1156	1228	1228	1228	0%	3.67%	0	0%	0.00%	0	0%	0.00%	0
7155	100%	902	902	836	836	881	881	881	0%	2.63%	0	0%	0.00%	0	0%	0.00%	0
7156	60%	1525	1525	1415	1415	1490	894	894	0%	2.67%	0	0%	0.00%	0	0%	0.00%	0
7157	100%	736	736	1232	1232	895	895	895	0%	2.67%	0	0%	0.00%	0	0%	0.00%	0
7201	100%	1826	1826	2475	2475	2034	2034	2034	0%	6.08%	0	0%	0.00%	0	0%	0.00%	0
7202	100%	106	106	214	214	141	141	141	0%	0.42%	0	0%	0.00%	0	0%	0.00%	0
7203	100%	294	294	362	362	636	636	636	0%	1.90%	0	0%	0.00%	0	0%	0.00%	0
7204	100%	360	360	1666	1666	778	778	778	0%	2.33%	0	0%	0.00%	0	0%	0.00%	0
7231	5%	0	0	0	0	0	0	0	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0
7241	100%	0	0	647	647	207	207	207	0%	0.62%	0	0%	0.00%	0	0%	0.00%	0
7242	100%	34	34	371	371	142	142	142	0%	0.42%	0	0%	0.00%	0	0%	0.00%	0
7251	100%	117	117	374	374	199	199	199	0%	0.60%	0	0%	0.00%	0	0%	0.00%	0
7252	100%	252	252	620	620	370	74	74	0%	0.22%	0	0%	0.00%	0	0%	0.00%	0
7253	100%	1109	1109	1249	1249	1154	1154	1154	0%	3.45%	0	0%	0.00%	0	0%	0.00%	0
7254	100%	1631	1631	1043	1043	1635	1635	1635	0%	4.89%	0	0%	0.00%	0	0%	0.00%	0
7255	100%	994	994	2022	2022	1255	1255	1255	0%	3.75%	0	0%	0.00%	0	0%	0.00%	0
7261	10%	333	333	475	475	378	38	38	0%	0.11%	0	0%	0.00%	0	0%	0.00%	0
7264	50%	548	548	999	999	692	346	346	0%	1.03%	0	0%	0.00%	0	0%	0.00%	0
							33,443	33,443	100.00%		532	1.59%		1,616	4.83%	583	2.04%



# **Trip Distribution Table** **Holly II Plaza Commercial Development**

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips

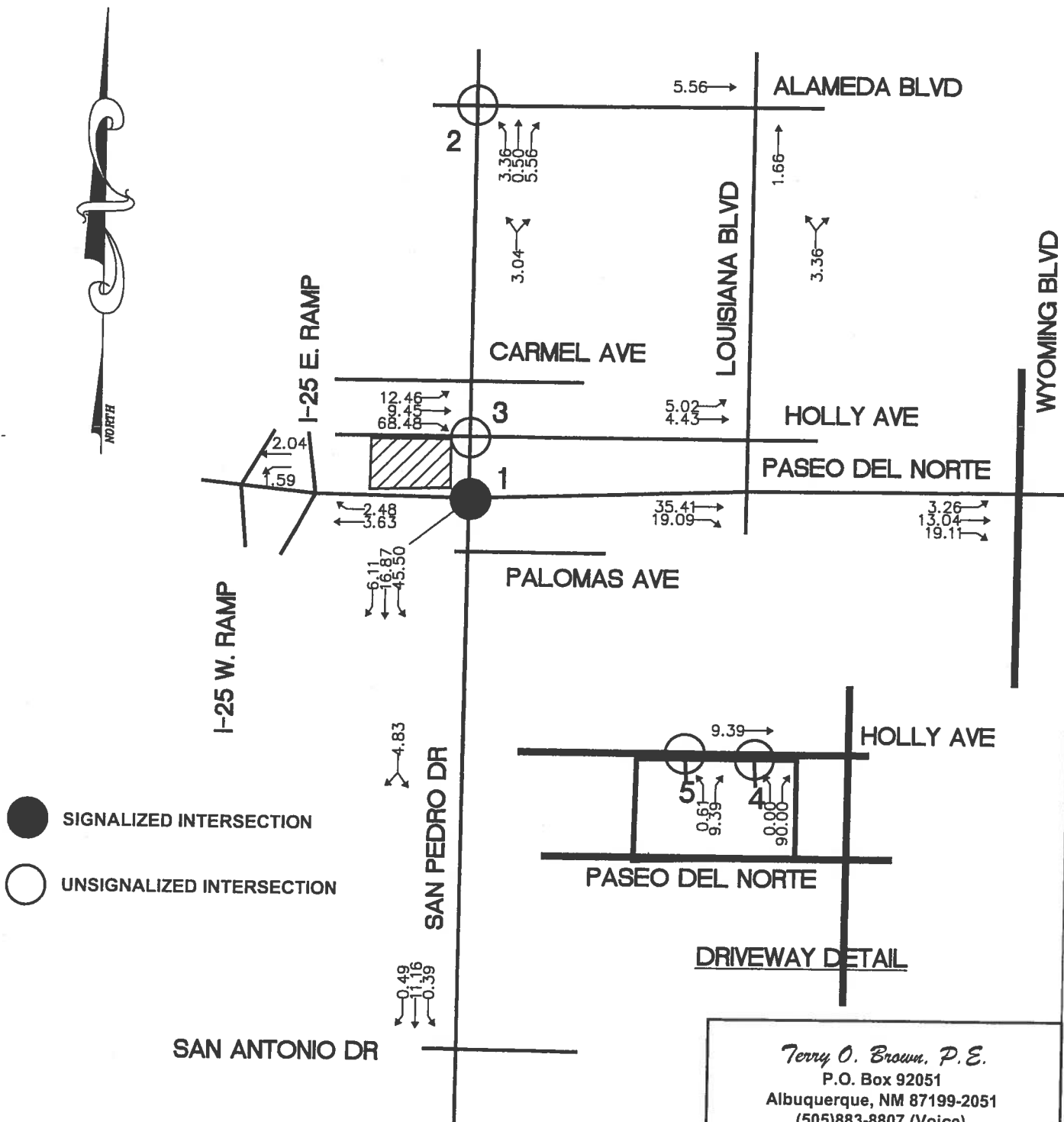
2000 and 2025 Data Taken from Mid-Region Council of Governments' 2025 Socioeconomic  
 2025 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico (S-03-01)

DASZ #	% Sub Area In Study	2000 Population	2025 Population	Interpolated Population for the Year 2008	Population in Study	Population / Distance	Percent Population	Interstate 25 North		Alameda Blvd West		Holly Ave West	
								% Utilizing	Population	% Utilizing	Population	% Utilizing	Population
Boundary Specified on DASZ Map													
5061	100%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
5062	100%	0	9	3	3	0	0.01%	0%	0	0%	0	0%	0
5063	100%	0	14	4	4	0	0.01%	0%	0	0%	0	0%	0
5064	100%	2	2	2	2	0	0.01%	0%	0	0%	0	0%	0
5065	100%	0	7	2	2	0	0.01%	0%	0	0%	0	0%	0
5066	100%	0	23	7	7	0	0.02%	0%	0	0%	0	0%	0
5067	60%	6	6	6	6	4	0.16%	0%	0	0%	0	0%	0
5068	100%	52	57	54	54	17	0.05%	0%	0	0%	0	0%	0
5069	30%	57	58	57	17	0	0.05%	0%	0	0%	0	0%	0
5070	10%	322	2404	988	99	0	0.30%	0%	0	0%	0	0%	0
5071	40%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
5072	70%	0	0	0	0	0	0.00%	0%	0	0%	0	0%	0
5111	5%	33	47	37	2	0	0.01%	0%	0	0%	0	0%	0
5112	85%	3	379	123	105	2	0.01%	40%	0	0%	0	0%	0
5114	30%	101	207	135	41	105	0.31%	40%	0	60%	0	0%	0
5115	65%	0	0	0	0	41	0.12%	0%	42	60%	63	0%	0
5122	55%	0	0	0	0	0	0.00%	0%	0	0%	25	0%	0
5223	100%	602	933	612	612	0	1.83%	0%	0	0%	0	0%	0
5225	100%	387	453	408	408	612	1.22%	0%	0	0%	0	0%	0
5226	100%	1330	1263	1309	1309	100%	3.91%	60%	0	100%	1.83%	0	0
5227	100%	0	2	1	1	1,309	0.00%	2.35%	785	0%	408	0	0
7052	10%	6	6	6	1	1	0.00%	0%	0	0%	0	0%	0
7102	15%	494	463	484	73	1	0.00%	0%	0	0%	0	0%	0
7111	100%	1176	1184	1,179	1,179	73	0.22%	0%	0	0%	0	0%	0
7112	100%	5	10	7	7	1,179	3.53%	0%	0	0%	0	0%	0
7113	100%	863	1145	974	974	7	0.02%	0%	0	0%	0	0%	0
7114	100%	1486	1408	1,461	1,461	974	2.91%	0%	0	0%	0	0%	0
7115	100%	1541	1450	1,512	1,512	1,461	4.37%	0%	0	0%	0	0%	0
7116	100%	1275	1372	1,306	1,306	1,512	4.52%	0%	0	0%	0	0%	0
7121	95%	952	920	942	895	1,306	3.91%	0%	0	0%	0	0%	0
7122	100%	1310	1269	1,297	1,297	895	2.66%	0%	0	0%	0	0%	0
7123	100%	1268	1279	1,416	1,416	895	3.88%	0%	0	0%	0	0%	0
7124	100%	1473	1491	1,479	1,479	1,416	4.23%	0%	0	0%	0	0%	0
7125	100%	1384	1297	1,356	1,356	1,479	4.42%	0%	0	0%	0	0%	0
7126	55%	0	1209	387	213	1,356	4.05%	0%	0	0%	0	0%	0
7142	25%	1441	1359	1,415	354	213	0.64%	0%	0	0%	0	0%	0
7143	45%	2109	1934	2,053	924	354	1.06%	0%	0	0%	0	0%	0
7151	100%	1029	964	1,008	1,008	924	2.76%	0%	0	0%	0	0%	0
7152	100%	1419	1324	1,388	1,388	1,008	3.01%	0%	0	0%	0	0%	0
7153	100%	1420	1336	1,393	1,393	1,388	4.15%	0%	0	0%	0	0%	0
7154	100%	1262	1156	1,228	1,228	1,393	4.17%	0%	0	0%	0	0%	0
7155	100%	902	836	881	881	1,228	3.67%	0%	0	0%	0	0%	0
7156	60%	1525	1415	1,490	894	881	2.63%	0%	0	0%	0	0%	0
7157	100%	736	1232	895	895	894	2.67%	0%	0	0%	0	0%	0
7201	100%	1826	2475	2,034	2,034	895	6.08%	0%	0	0%	0	0%	0
7202	100%	166	214	141	141	2,034	0.42%	0%	0	0%	0	0%	0
7203	100%	294	1362	636	636	141	1.90%	0%	0	0%	0	0%	0
7204	100%	360	1666	778	778	636	2.33%	0%	0	10%	0.04%	14	203
7221	5%	0	0	0	0	778	0.00%	0%	0	0%	0	0	0
7241	100%	0	647	207	207	0	0.00%	0%	0	0%	0	0%	0
7242	100%	34	371	142	142	207	0.42%	0%	0	60%	0.00%	0	0
7251	100%	117	374	199	199	142	0.60%	0%	0	0%	0	0%	0
7252	20%	252	620	370	74	199	0.22%	0%	0	0%	0	0%	0
7253	100%	1109	1249	1,154	1,154	74	0.92%	0%	0	0%	0	0%	0
7254	100%	1631	1645	1,635	1,635	1,154	3.45%	0%	0	0%	0	0%	0
7255	100%	894	2022	1,255	1,255	1,635	4.89%	0%	0	0%	0	0%	0
7261	10%	333	475	378	38	1,255	3.75%	0%	0	0%	0	0%	0
7261	50%	548	999	692	346	38	0.11%	0%	0	0%	0	0%	0
				38,926	33,443	33,443	100.00%	0%	0	0%	0	0%	0
								828	2.46%		1,123	3.36%	203
													0.61%

# Holly Place 99 Development

Holly Ave West of San Pedro Rd

Trip Assignments - Comm. (% Exiting)



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*Holly Place II (Holly Ave. West of San Pedro Dr.)*  
 Projected Turning Movements SUMMARY  
PROPOSED DEVELOPMENT (2008) - 100% Development

INTERSECTION: Summary

Paseo del Norte / San Pedro Dr.

(1)	0.96												0.94	PHF
	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	126	1,635	355	117	2,067	144	353	186	90	236	243	190		
	225	1,667	369	160	2,085	293	395	341	136	305	380	252		
	231	1,667	369	160	2,085	358	395	358	136	343	394	257		
	0.96			0.92			0.85			0.80			PHF	
	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	202	2,201	135	152	1,686	98	317	256	280	384	224	197		
	257	2,254	161	291	1,730	207	385	422	442	476	355	302		
	265	2,254	161	291	1,730	294	385	444	442	539	378	310		

Alameda Blvd. / San Pedro Dr.

(2) 3.0% Truck Existing (2007) 2008 (NO BUILD - A.M.) 2008 (BUILD - A.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	86	288	310	19	432	3	351	28	12	2	39	447
	89	301	336	19	435	3	368	30	13	2	50	555
	89	301	339	19	435	3	371	30	18	2	51	555
	0.93			0.91			0.90			0.85 PHF		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
Left Thru Right			Left Thru Right			Left Thru Right			Left Thru Right			
Existing (2007) 2008 (NO BUILD - P.M.) 2008 (BUILD - P.M.)	70	497	660	12	382	7	386	65	39	14	67	211
	71	503	679	12	386	7	410	70	40	16	79	243
	71	503	683	12	386	7	415	71	48	16	80	243
	0.93			0.91			0.90			0.85 PHF		

Holly Ave / San Pedro Dr.

(3)	0.92												0.78			0.87			PHF																
	Eastbound (Holly Ave)						Westbound (Holly Ave)						Northbound (San Pedro Dr.)						Southbound (San Pedro Dr.)																
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right												
	23		0		11		0		0		0		117		438		0		0		456		7												
	24		4		11		231		4		30		129		581		146		41		477		7												
Existing (2007)												0.94												0.91			0.87			0.91			PHF		
2008 (NO BUILD - A.M.)												Eastbound (Holly Ave)						Westbound (Holly Ave)						Northbound (San Pedro Dr.)						Southbound (San Pedro Dr.)					
2008 (BUILD - A.M.)												Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
												34		12		69		231		8		30		217		581		146		41		477		14	
Existing (2007)												0.94												0.91			0.87			0.91			PHF		
2008 (NO BUILD - P.M.)												Eastbound (Holly Ave)						Westbound (Holly Ave)						Northbound (San Pedro Dr.)						Southbound (San Pedro Dr.)					
2008 (BUILD - P.M.)												Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
												20		0		35		0		0		0		147		529		0		0		755		17	
												21		4		35		300		4		28		167		659		109		38		759		17	
												38		17		130		300		10		28		284		659		109		38		759		26	

*Holly Place II (Holly Ave. West of San Pedro Dr.)*

Projected Turning Movements SUMMARY

**PROPOSED DEVELOPMENT (2008) - 100% Development**

**INTERSECTION:      Summary**

**Holly Ave. / Driveway "A"**

(4)

2.6% Truck

Existing (2007)

2008 (NO BUILD - A.M.)

2008 (BUILD - A.M.)

0.92			0.93			0.86			0.79			PHF
Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "A")			Southbound (Driveway "A")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	39	0	0	140	0	0	0	0	0	0	0	0
0	47	0	90	149	0	0	0	76	0	0	0	0

Existing (2007)

2008 (NO BUILD - P.M.)

2008 (BUILD - P.M.)

0.93			0.92			0.85			0.81			PHF
Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "A")			Southbound (Driveway "A")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	60	0	0	188	0	0	0	0	0	0	0	0
0	73	0	120	200	0	0	0	124	0	0	0	0

**Holly Ave. / Driveway "B"**

(5)

2.8% Truck

Existing (2007)

2008 (NO BUILD - A.M.)

2008 (BUILD - A.M.)

0.89			0.79			0.83			0.84			PHF
Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "B")			Southbound (Driveway "B")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	39	0	0	140	0	0	0	0	0	0	0	0
0	39	1	9	140	0	1	0	8	0	0	0	0

Existing (2007)

2008 (NO BUILD - P.M.)

2008 (BUILD - P.M.)

0.91			0.86			0.78			0.94			PHF
Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "B")			Southbound (Driveway "B")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	60	0	0	188	0	0	0	0	0	0	0	0
0	60	1	12	188	0	1	0	13	0	0	0	0

*Holly Place II (Holly Ave. West of San Pedro Dr.)*  
Projected Turning Movements Worksheet  
**Paseo del Norte / San Pedro Dr.**

**INTERSECTION :**

E-W Street: **Paseo del Norte** (1)  
N-S Street: **San Pedro Dr.**

Year of Existing Counts: 2005  
Implementation Year: 2008

Growth Rates

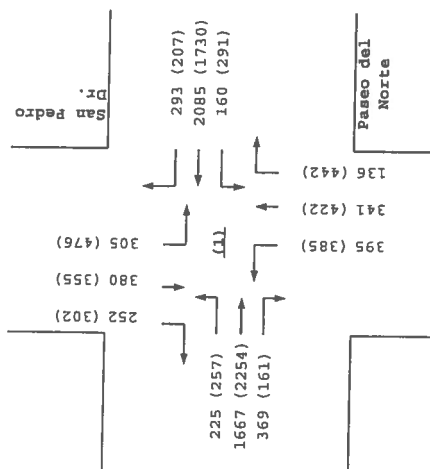
	1.40%			0.60%			12.40%			5.20%		
	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	123	1,590	345	116	2,042	142	283	149	72	214	220	172
Background Traffic Growth	5	67	14	2	37	3	105	55	27	33	34	27
<b>Subtotal</b>	<b>128</b>	<b>1,657</b>	<b>359</b>	<b>118</b>	<b>2,079</b>	<b>145</b>	<b>388</b>	<b>204</b>	<b>99</b>	<b>247</b>	<b>254</b>	<b>199</b>
Kohl's	0	10	0	19	6	0	0	0	24	0	0	2
Previous Development from below	97	0	0	0	0	148	0	133	0	58	121	51
Palomas Plaza	0	0	10	23	0	0	7	4	13	0	5	0
<b>Subtotal (NO BUILD - A.M.)</b>	<b>225</b>	<b>1,667</b>	<b>369</b>	<b>160</b>	<b>2,085</b>	<b>293</b>	<b>395</b>	<b>341</b>	<b>136</b>	<b>305</b>	<b>380</b>	<b>252</b>
Percent Commercial Trips Generated(Entering)	6.11%	0.00%	0.00%	0.00%	0.00%	65.08%	0.00%	16.87%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	45.50%	16.87%	6.11%
Total Trips Generated	6	0	0	0	0	65	0	17	0	38	14	5
<b>Total AM Peak Hour BUILD Volumes</b>	<b>231</b>	<b>1,667</b>	<b>369</b>	<b>160</b>	<b>2,085</b>	<b>358</b>	<b>395</b>	<b>358</b>	<b>136</b>	<b>343</b>	<b>394</b>	<b>257</b>

	0.90%			1.20%			18.70%			0.60%		
	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	198	2,162	133	148	1,646	96	231	186	204	379	221	195
Background Traffic Growth	5	58	4	5	59	3	130	104	114	7	4	4
<b>Subtotal</b>	<b>203</b>	<b>2,220</b>	<b>137</b>	<b>153</b>	<b>1,705</b>	<b>99</b>	<b>361</b>	<b>290</b>	<b>318</b>	<b>386</b>	<b>225</b>	<b>199</b>
Kohl's	0	34	0	84	25	0	0	0	80	0	0	11
Previous Development from below	54	0	0	0	0	108	0	120	0	90	118	92
Palomas Plaza	0	0	24	54	0	0	24	12	44	0	12	0
<b>Subtotal (NO BUILD - P.M.)</b>	<b>257</b>	<b>2,254</b>	<b>161</b>	<b>291</b>	<b>1,730</b>	<b>207</b>	<b>385</b>	<b>422</b>	<b>442</b>	<b>476</b>	<b>355</b>	<b>302</b>
Percent Commercial Trips Generated(Entering)	6.11%	0.00%	0.00%	0.00%	0.00%	65.08%	0.00%	16.87%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	45.50%	16.87%	6.11%
Total Trips Generated	8	0	0	0	0	87	0	22	0	63	23	8
<b>Total PM Peak Hour BUILD Volumes</b>	<b>265</b>	<b>2,254</b>	<b>161</b>	<b>291</b>	<b>1,730</b>	<b>294</b>	<b>385</b>	<b>444</b>	<b>442</b>	<b>539</b>	<b>378</b>	<b>310</b>

Number of Commercial Trips Generated  
 Entering: 100, Exiting: 84, A.M.  
 133, 138, P.M.  
 100% Commercial Development

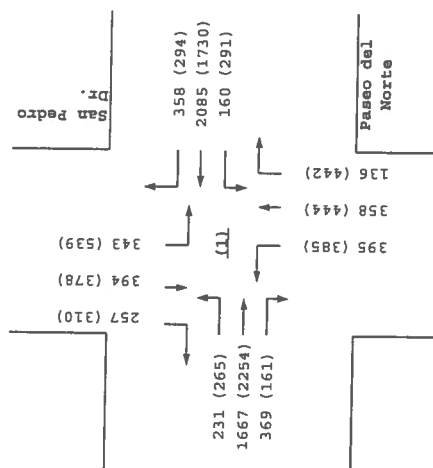
	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2007 AM Peak Hr. Volumes	126	1,635	355	117	2,067	144	353	186	90	236	243	190
2007 PM Peak Hr. Volumes	202	2,201	135	152	1,686	98	317	256	280	384	224	197

2008  
NO BUILD



Trips

2008  
BUILD



Paseo del Norte / San Pedro Dr.

Holly Place II (Holly Ave. West of San Pedro Dr.)  
Projected Turning Movements Worksheet  
Alameda Blvd. / San Pedro Dr.

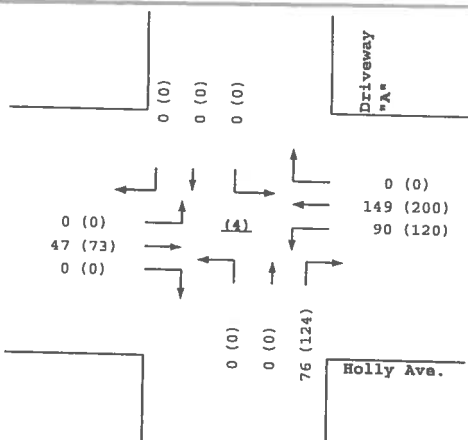
INTERSECTION: E-W Street: Alameda Blvd. (2)  
N-S Street: San Pedro Dr.  
Year of Existing Courts: 2005  
Implementation Year: 2008

Growth Rates		4.90%		0.80%		1.40%		46.70%	
Eastbound (Alameda Blvd.)		Westbound (Alameda Blvd.)		Northbound (San Pedro Dr.)		Southbound (San Pedro Dr.)			
Left	Thru	Left	Thru	Left	Thru	Left	Thru	Left	Thru
78	262	282	19	425	3	341	27	12	1
11	39	41	0	10	0	14	1	1	20
89	301	323	19	435	3	355	28	13	2
0	0	13	0	0	0	13	2	0	2
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
89	301	336	19	435	3	368	30	13	2
0.00%	0.00%	3.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%
Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)	
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.36%	0.50%	5.56%	0.00%
Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)	
0	0	3	0	0	3	0	5	0	1
Total Trips Generated		Total Trips Generated		Total Trips Generated		Total Trips Generated		Total Trips Generated	
89	301	339	19	435	3	371	30	18	2
Total AM Peak Hour BUILD Volumes									

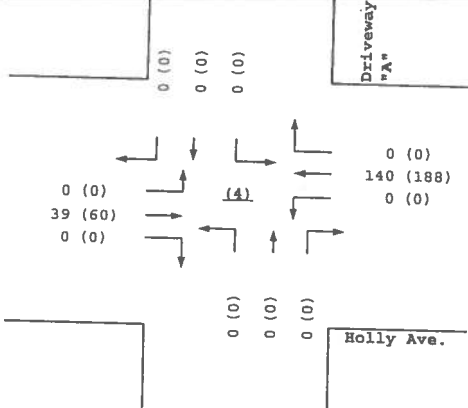
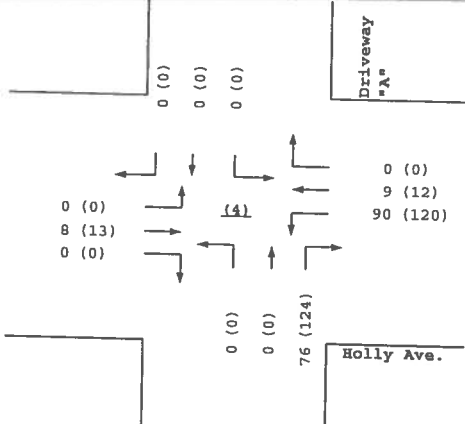
1.30%		1.10%		3.60%		21.30%	
Eastbound (Alameda Blvd.)		Westbound (Alameda Blvd.)		Northbound (San Pedro Dr.)		Southbound (San Pedro Dr.)	
Left	Thru	Left	Thru	Left	Thru	Left	Thru
68	484	643	12	374	7	360	61
3	19	25	0	12	0	39	7
71	503	668	12	386	7	399	68
0	0	11	0	0	0	11	2
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
71	503	679	12	386	7	410	70
0.00%	0.00%	3.36%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)		Percent Commercial Trips Generated(Entering)	
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%	0.00%
Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)		Percent Commercial Trips Generated(Exiting)	
0	0	4	0	0	5	1	8
Total Trips Generated		Total Trips Generated		Total Trips Generated		Total Trips Generated	
71	503	683	12	386	7	415	71
Total PM Peak Hour BUILD Volumes							

Number of Commercial Trips Generated  
Entering 100  
Exiting 84  
A.M. 138  
P.M. 100% Commercial Development

2007 AM Peak Hr. Volumes		2007 PM Peak Hr. Volumes	
Eastbound (Alameda Blvd.)	Westbound (Alameda Blvd.)	Northbound (San Pedro Dr.)	Southbound (San Pedro Dr.)
86	288	310	432
70	497	660	12
		382	7
		351	28
		65	12
		39	14
		67	211



Holly Ave. / Driveway "A"



*Holly Place II (Holly Ave. West of San Pedro Dr.)*  
Projected Turning Movements Worksheet  
**Holly Ave. / Driveway "B"**

**INTERSECTION :**

E-W Street: Holly Ave.  
N-S Street: Driveway "B"

(5)

Year of Existing Counts  
Implementation Year

2006  
2008

Growth Rates

	3.00%			3.00%			3.00%			3.00%		
	Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Skarsgard Comm. Dev.	0	0	0	0	0	0	0	0	0	0	0	0
Daskalos - Holly / San Pedro	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	39	0	0	140	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.61%	9.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.61%	0.00%	9.39%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	1	9	0	0	1	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	0	39	1	9	140	0	1	0	8	0	0	0

	3.00%			3.00%			3.00%			3.00%		
	Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Skarsgard Comm. Dev.	0	0	0	0	0	0	0	0	0	0	0	0
Daskalos - Holly / San Pedro	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	60	0	0	188	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.61%	9.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.61%	0.00%	9.39%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	1	12	0	0	1	0	13	0	0	0
Total PM Peak Hour BUILD Volumes	0	60	1	12	188	0	1	0	13	0	0	0

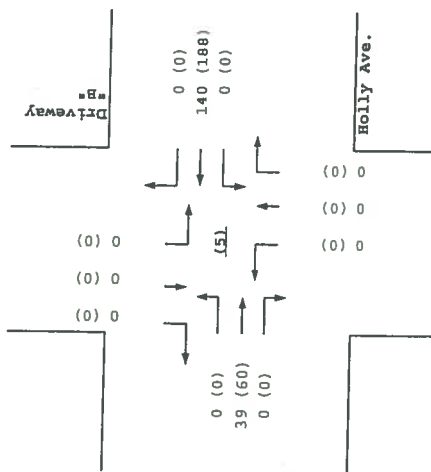
Number of Commercial Trips Generated

Entering	100	84	A.M.	100% Commercial Development
Exiting	133	138	P.M.	

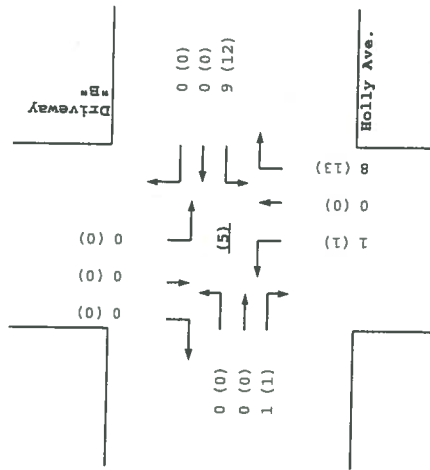
	Eastbound (Holly Ave.)			Westbound (Holly Ave.)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2007 AM Peak Hr. Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2007 PM Peak Hr. Volumes	0	0	0	0	0	0	0	0	0	0	0	0



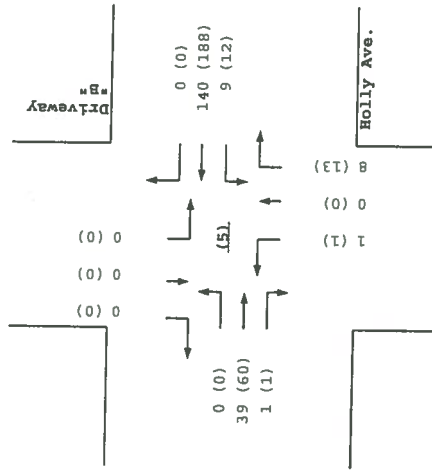
2008  
NO BUILD



2008  
TRIPS



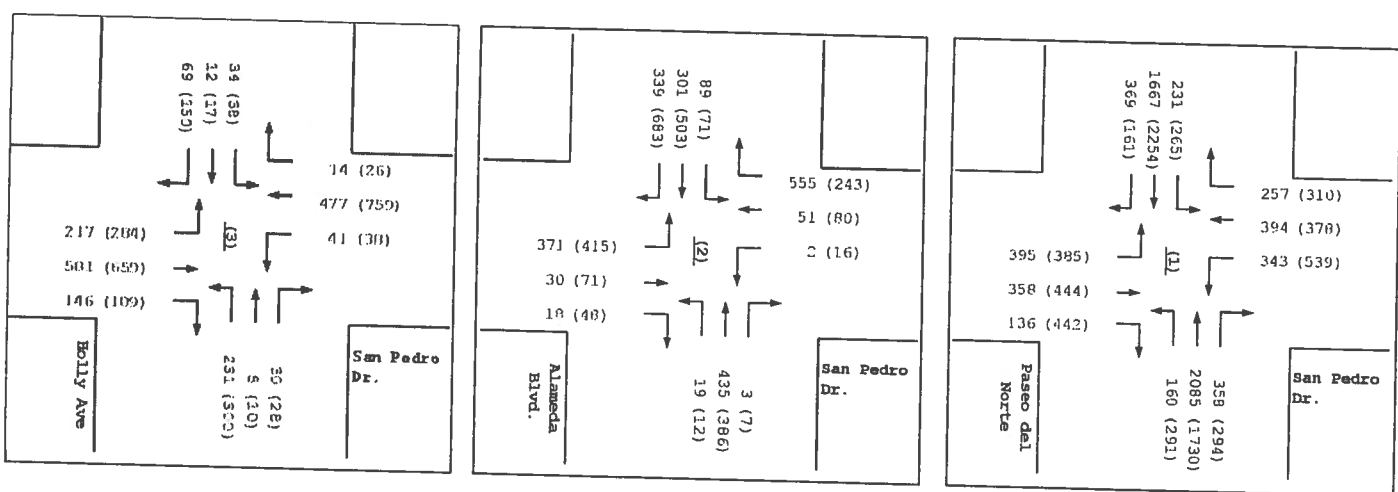
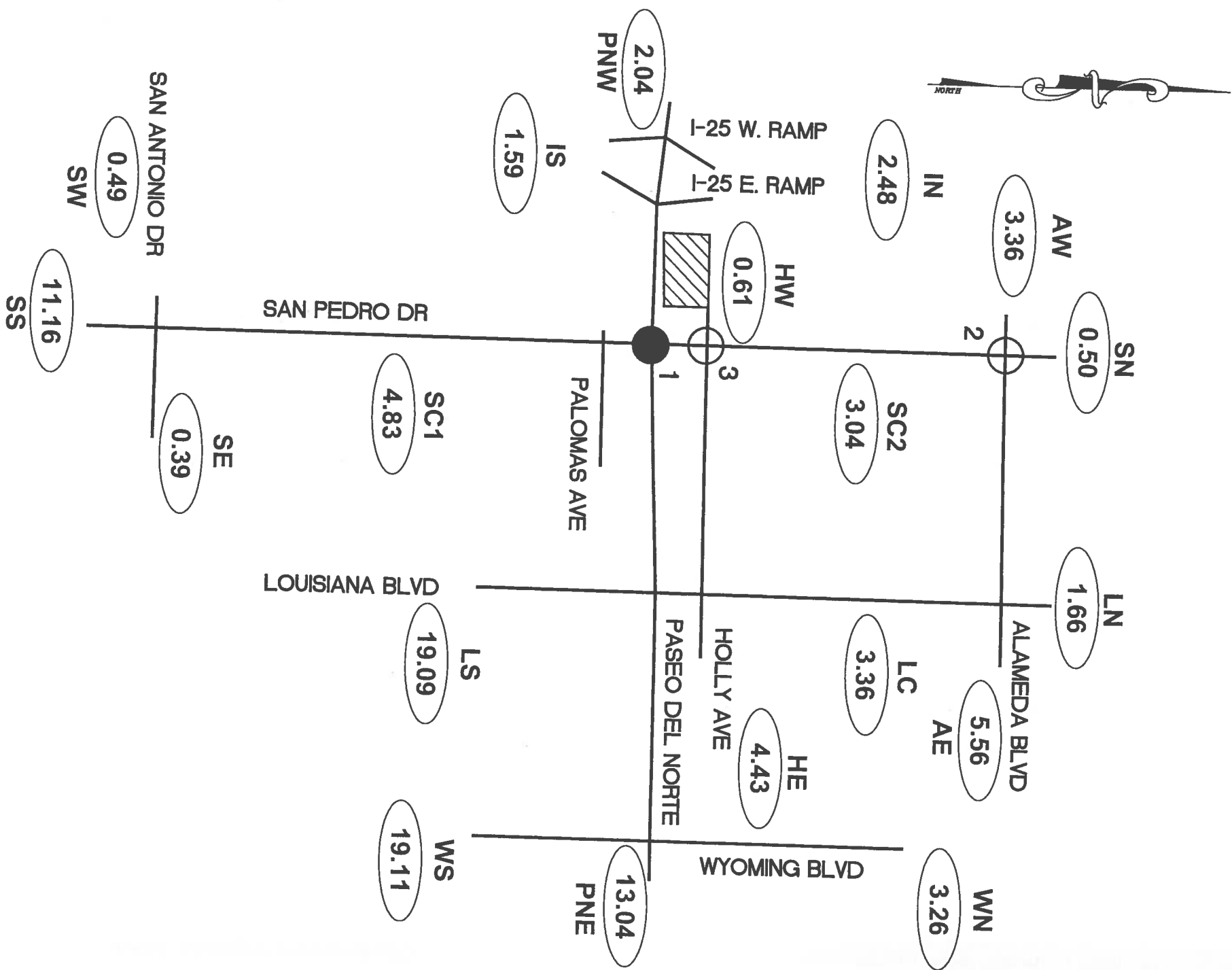
2008  
BUILD



Holly Ave. / Driveway "B"







# *Holly 99 Plaza Commercial Development* Holly Ave / San Pedro Rd 2008 BUILD Volumes - AM(PM)

Terry O. Brown, P.E.  
P.O. Box 92051  
Albuquerque, NM 87199-2051  
(505)883-8807 (Voice)  
(505)212-0267 (Fax)

Intersection #1

























Paseo del Norte / San Pedro Dr.

# Timings

1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.

10/14/2007

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1667	369	160	2085	293	395	341	136	305	380	252
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phases	7	4		3	8		5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5		8.5	20.5		8.5	20.5	
Total Split (s)	13.0	55.2	0.0	12.7	54.9	0.0	21.1	34.7	0.0	17.4	31.0	0.0
Total Split (%)	10.8%	46.0%	0.0%	10.6%	45.8%	0.0%	17.6%	28.9%	0.0%	14.5%	25.8%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	Min	C-Min		Min	C-Min		Min	Min		Min	Min	
Act Effct Green (s)	9.0	51.2	120.0	8.7	50.9	120.0	17.1	30.7	120.0	13.4	27.0	120.0
Actuated g/C Ratio	0.08	0.43	1.00	0.07	0.42	1.00	0.14	0.26	1.00	0.11	0.22	1.00
v/c Ratio	0.98	0.86	0.26	0.70	1.06	0.20	1.04	0.93	0.11	0.92	1.05	0.18
Control Delay	107.2	36.4	0.4	70.3	72.0	0.3	102.4	70.7	0.1	83.5	103.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.2	36.4	0.4	70.3	72.0	0.3	102.4	70.7	0.1	83.5	103.9	0.3
LOS	F	D	A	E	E	A	F	E	A	F	F	A
Approach Delay		37.6			63.6			74.1			69.4	
Approach LOS		D			E			E			E	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 60 (50%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 57.2









Intersection Capacity Utilization 91.3%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service F

Splits and Phases: 1: Paseo del Norte & San Pedro Dr

			
ø1	ø2	ø3	ø4
17.4 s	34.7 s	12.7 s	55.2 s
			
ø5	ø6	ø7	ø8
21.1 s	31 s	13 s	54.9 s

























2008 AM Peak NO BUILD Conditions

Existing Geometry  
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# HCM Signalized Intersection Capacity Analysis

## 1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	1845	1568	3400	1845	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3400	5036	1568	3400	1845	1568	3400	1845	1568
Volume (vph)	225	1667	369	160	2085	293	395	341	136	305	380	252
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.78	0.78	0.78	0.87	0.87	0.87
Adj. Flow (vph)	250	1852	410	174	2266	318	506	437	174	351	437	290
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	250	1852	410	174	2266	318	506	437	174	351	437	290
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.5	50.7	120.0	8.2	50.4	120.0	16.6	30.2	120.0	12.9	26.5	120.0
Effective Green, g (s)	9.0	51.2	120.0	8.7	50.9	120.0	17.1	30.7	120.0	13.4	27.0	120.0
Actuated g/C Ratio	0.08	0.43	1.00	0.07	0.42	1.00	0.14	0.26	1.00	0.11	0.22	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	2149	1568	247	2136	1568	485	472	1568	380	415	1568
v/s Ratio Prot	c0.07	0.37		0.05	c0.45		c0.15	c0.24		0.10	c0.24	
v/s Ratio Perm			c0.26			0.20			0.11			0.18
v/c Ratio	0.98	0.86	0.26	0.70	1.06	0.20	1.04	0.93	0.11	0.92	1.05	0.18
Uniform Delay, d1	55.4	31.2	0.0	54.4	34.5	0.0	51.5	43.5	0.0	52.8	46.5	0.0
Progression 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
Incremental Delay, d2	50.7	4.8	0.4	8.8	38.0	0.3	52.6	24.1	0.1	27.7	58.8	0.3
Delay (s)	106.1	36.0	0.4	63.2	72.5	0.3	104.1	67.6	0.1	80.5	105.3	0.3
Level of Service	F	D	A	E	E	A	F	E	A	F	F	A
Approach Delay (s)		37.2			63.6			73.6			69.0	
Approach LOS		D			E			E			E	

### Intersection Summary

HCM Average Control Delay	57.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

2008 AM Peak NO BUILD Conditions

























Existing Geometry  
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# Timings

1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	1667	369	160	2085	358	395	358	136	343	394	257
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Detector Phases	7	4		3	8		5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5		8.5	20.5		8.5	20.5	
Total Split (s)	13.0	55.2	0.0	12.7	54.9	0.0	21.1	34.7	0.0	17.4	31.0	0.0
Total Split (%)	10.8%	46.0%	0.0%	10.6%	45.8%	0.0%	17.6%	28.9%	0.0%	14.5%	25.8%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	Min	C-Min		Min	C-Min		Min	Min		Min	Min	
Act Effct Green (s)	9.0	51.2	120.0	8.7	50.9	120.0	17.1	30.7	120.0	13.4	27.0	120.0
Actuated g/C Ratio	0.08	0.43	1.00	0.07	0.42	1.00	0.14	0.26	1.00	0.11	0.22	1.00
v/c Ratio	1.01	0.86	0.26	0.70	1.06	0.25	1.04	0.97	0.11	1.04	1.09	0.19
Control Delay	113.7	36.4	0.4	70.3	72.0	0.4	102.4	79.9	0.1	107.8	115.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.7	36.4	0.4	70.3	72.0	0.4	102.4	79.9	0.1	107.8	115.0	0.3
LOS	F	D	A	E	E	A	F	E	A	F	F	A
Approach Delay		38.4			62.0			77.7			82.9	
Approach LOS		D			E			E			F	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 60 (50%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 59.7









Intersection Capacity Utilization 92.2%

Analysis Period (min) 15

Intersection LOS: E

ICU Level of Service F

## Splits and Phases: 1: Paseo del Norte & San Pedro Dr

			
ø1	ø2	ø3	ø4
17.4 s	34.7 s	12.7 s	55.2 s
			
ø5	ø6	ø7	ø8
21.1 s	31 s	13 s	54.9 s

























2008 AM Peak BUILD Conditions

Existing Geometry  
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# HCM Signalized Intersection Capacity Analysis

## 1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	1845	1568	3400	1845	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3400	5036	1568	3400	1845	1568	3400	1845	1568
Volume (vph)	231	1667	369	160	2085	358	395	358	136	343	394	257
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.78	0.78	0.78	0.87	0.87	0.87
Adj. Flow (vph)	257	1852	410	174	2266	389	506	459	174	394	453	295
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	257	1852	410	174	2266	389	506	459	174	394	453	295
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	8.5	50.7	120.0	8.2	50.4	120.0	16.6	30.2	120.0	12.9	26.5	120.0
Effective Green, g (s)	9.0	51.2	120.0	8.7	50.9	120.0	17.1	30.7	120.0	13.4	27.0	120.0
Actuated g/C Ratio	0.08	0.43	1.00	0.07	0.42	1.00	0.14	0.26	1.00	0.11	0.22	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	2149	1568	247	2136	1568	485	472	1568	380	415	1568
v/s Ratio Prot	c0.08	0.37		0.05	c0.45		c0.15	c0.25		0.12	c0.25	
v/s Ratio Perm			c0.26			0.25			0.11			0.19
v/c Ratio	1.01	0.86	0.26	0.70	1.06	0.25	1.04	0.97	0.11	1.04	1.09	0.19
Uniform Delay, d1	55.5	31.2	0.0	54.4	34.5	0.0	51.5	44.2	0.0	53.3	46.5	0.0
Progression 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
Incremental Delay, d2	58.4	4.8	0.4	8.8	38.0	0.4	52.6	34.1	0.1	56.0	71.1	0.3
Delay (s)	113.9	36.0	0.4	63.2	72.5	0.4	104.1	78.4	0.1	109.3	117.6	0.3
Level of Service	F	D	A	E	E	A	F	E	A	F	F	A
Approach Delay (s)		38.2			62.0			77.8			84.5	
Approach LOS		D			E			E			F	
<b>Intersection Summary</b>												
HCM Average Control Delay		59.9										
HCM Volume to Capacity ratio		1.09										
Actuated Cycle Length (s)		120.0										
Intersection Capacity Utilization		92.2%							20.0			
Analysis Period (min)		15							F			
c Critical Lane Group												

2008 AM Peak BUILD Conditions

























Existing Geometry  
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# Timings

1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.

10/14/2007

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	2254	161	291	1730	207	385	422	442	476	355	302
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free			Free
Detector Phases	7	4		3	8		5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	20.3	57.0	0.0	19.0	55.7	0.0	21.1	33.0	0.0	21.0	32.9	0.0
Total Split (%)	15.6%	43.8%	0.0%	14.6%	42.8%	0.0%	16.2%	25.4%	0.0%	16.2%	25.3%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)	69.3	53.0	130.0	66.7	51.7	130.0	17.1	29.0	130.0	17.0	28.9	130.0
Actuated g/C Ratio	0.53	0.41	1.00	0.51	0.40	1.00	0.13	0.22	1.00	0.13	0.22	1.00
v/c Ratio	0.99	1.17	0.11	1.24	0.95	0.14	0.99	1.18	0.32	1.18	0.95	0.21
Control Delay	89.1	116.9	0.1	168.5	49.3	0.2	96.6	146.4	0.5	148.7	83.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.1	116.9	0.1	168.5	49.3	0.2	96.6	146.4	0.5	148.7	83.8	0.3
LOS	F	F	A	F	D	A	F	F	A	F	F	A
Approach Delay		107.2			60.3			79.4			88.8	
Approach LOS		F			E			E			F	

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.24

Intersection Signal Delay: 84.9









Intersection Capacity Utilization 108.8%

Analysis Period (min) 15

Intersection LOS: F

ICU Level of Service G

Splits and Phases: 1: Paseo del Norte & San Pedro Dr

			
21 s	33 s	19 s	57 s
			
21.1 s	32.9 s	20.3 s	55.7 s

























2008 PM Peak NO BUILD Conditions

Existing Geometry  
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# HCM Signalized Intersection Capacity Analysis

## 1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	5036	1568	1752	5036	1568	3400	1845	1568	3400	1845	1568
Flt Permitted	0.08	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	139	5036	1568	143	5036	1568	3400	1845	1568	3400	1845	1568
Volume (vph)	257	2254	161	291	1730	207	385	422	442	476	355	302
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	273	2398	171	320	1901	227	443	485	508	523	390	332
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	273	2398	171	320	1901	227	443	485	508	523	390	332
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)	67.3	52.0	130.0	64.7	50.7	130.0	16.1	28.0	130.0	16.0	27.9	130.0
Effective Green, g (s)	69.3	53.0	130.0	66.7	51.7	130.0	17.1	29.0	130.0	17.0	28.9	130.0
Actuated g/C Ratio	0.53	0.41	1.00	0.51	0.40	1.00	0.13	0.22	1.00	0.13	0.22	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	2053	1568	259	2003	1568	447	412	1568	445	410	1568
v/s Ratio Prot	0.12	0.48		c0.14	0.38		0.13	c0.26		c0.15	0.21	
v/s Ratio Perm	0.40		0.11	c0.49		0.14			c0.32			0.21
v/c Ratio	0.99	1.17	0.11	1.24	0.95	0.14	0.99	1.18	0.32	1.18	0.95	0.21
Uniform Delay, d1	41.8	38.5	0.0	59.7	37.9	0.0	56.4	50.5	0.0	56.5	49.9	0.0
Progression 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
Incremental Delay, d2	50.6	81.3	0.1	134.7	10.4	0.2	40.1	102.3	0.5	100.2	32.0	0.3
Delay (s)	92.4	119.8	0.1	194.4	48.3	0.2	96.4	152.8	0.5	156.7	81.9	0.3
Level of Service	F	F	A	F	D	A	F	F	A	F	F	A
Approach Delay (s)		110.0			62.9			81.6			91.6	
Approach LOS		F			E			F			F	
<b>Intersection Summary</b>												
HCM Average Control Delay		87.5					HCM Level of Service		F			
HCM Volume to Capacity ratio		1.16										
Actuated Cycle Length (s)		130.0					Sum of lost time (s)		12.0			
Intersection Capacity Utilization		108.8%					ICU Level of Service		G			
Analysis Period (min)		15										
c Critical Lane Group												

2008 PM Peak NO BUILD Conditions

























Existing Geometry  
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# Timings

1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.

10/14/2007

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	265	2254	161	291	1730	294	385	444	442	539	378	310
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free			Free
Detector Phases	7	4		3	8		5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5		8.5	20.5		8.5	20.5	
Total Split (s)	20.3	57.0	0.0	19.0	55.7	0.0	21.1	33.0	0.0	21.0	32.9	0.0
Total Split (%)	15.6%	43.8%	0.0%	14.6%	42.8%	0.0%	16.2%	25.4%	0.0%	16.2%	25.3%	0.0%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		Min	Min		Min	Min	
Act Effct Green (s)	69.3	53.0	130.0	66.7	51.7	130.0	17.1	29.0	130.0	17.0	28.9	130.0
Actuated g/C Ratio	0.53	0.41	1.00	0.51	0.40	1.00	0.13	0.22	1.00	0.13	0.22	1.00
v/c Ratio	1.02	1.17	0.11	1.24	0.95	0.21	0.99	1.24	0.32	1.33	1.01	0.22
Control Delay	97.3	116.9	0.1	168.5	49.3	0.3	96.6	168.5	0.5	206.6	97.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.3	116.9	0.1	168.5	49.3	0.3	96.6	168.5	0.5	206.6	97.5	0.3
LOS	F	F	A	F	D	A	F	F	A	F	F	A
Approach Delay		107.9			58.1			88.3			120.8	
Approach LOS		F			E			F			F	

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.33

Intersection Signal Delay: 91.1









Intersection Capacity Utilization 111.8%

Analysis Period (min) 15

Intersection LOS: F

ICU Level of Service H

Splits and Phases: 1: Paseo del Norte & San Pedro Dr

 ø1	 ø2	 ø3	 ø4
21 s	33 s	19 s	57 s
 ø5	 ø6	 ø7	 ø8
21.1 s	32.9 s	20.3 s	55.7 s

























2008 PM Peak BUILD Conditions

Existing Geometry  
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# HCM Signalized Intersection Capacity Analysis

## 1: Paseo del Norte & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	5036	1568	1752	5036	1568	3400	1845	1568	3400	1845	1568
Flt Permitted	0.08	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	139	5036	1568	143	5036	1568	3400	1845	1568	3400	1845	1568
Volume (vph)	265	2254	161	291	1730	294	385	444	442	539	378	310
Peak-hour factor, PHF	0.94	0.94	0.94	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	282	2398	171	320	1901	323	443	510	508	592	415	341
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	282	2398	171	320	1901	323	443	510	508	592	415	341
Turn Type	pm+pt		Free	pm+pt		Free	Prot		Free	Prot		Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free			Free
Actuated Green, G (s)	68.3	52.5	130.0	65.7	51.2	130.0	16.6	28.5	130.0	16.5	28.4	130.0
Effective Green, g (s)	69.3	53.0	130.0	66.7	51.7	130.0	17.1	29.0	130.0	17.0	28.9	130.0
Actuated g/C Ratio	0.53	0.41	1.00	0.51	0.40	1.00	0.13	0.22	1.00	0.13	0.22	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	276	2053	1568	259	2003	1568	447	412	1568	445	410	1568
v/s Ratio Prot	0.13	0.48		c0.14	0.38		0.13	c0.28		c0.17	0.22	
v/s Ratio Perm	0.42		0.11	c0.49		0.21			c0.32			0.22
v/c Ratio	1.02	1.17	0.11	1.24	0.95	0.21	0.99	1.24	0.32	1.33	1.01	0.22
Uniform Delay, d1	42.0	38.5	0.0	59.7	37.9	0.0	56.4	50.5	0.0	56.5	50.5	0.0
Progression 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
Incremental Delay, d2	59.9	81.3	0.1	134.7	10.4	0.3	40.1	126.3	0.5	163.5	47.5	0.3
Delay (s)	101.9	119.8	0.1	194.4	48.3	0.3	96.4	176.8	0.5	220.0	98.1	0.3
Level of Service	F	F	A	F	D	A	F	F	A	F	F	A
Approach Delay (s)		110.8			60.6			91.2			126.9	
Approach LOS		F			E			F			F	

### Intersection Summary

HCM Average Control Delay	94.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

2008 PM Peak BUILD Conditions

Existing Geometry  
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Intersection #2

Alameda Blvd. / San Pedro Dr.



HCM Unsignalized Intersection Capacity Analysis  
2: Alameda Blvd & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	89	301	336	19	435	3	368	30	13	2	50	555
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.83	0.83	0.83	0.86	0.86	0.86
Hourly flow rate (vph)	105	354	395	21	478	3	443	36	16	2	58	645
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	459	395	21	481	443	52	2	703				
Volume Left (vph)	105	0	21	0	443	0	2	0				
Volume Right (vph)	0	395	0	3	0	16	0	645				
Hadj (s)	0.17	-0.65	0.55	0.05	0.55	-0.16	0.55	-0.59				
Departure Headway (s)	9.6	8.8	10.0	9.5	10.0	9.3	10.0	8.9				
Degree Utilization, x	1.22	0.96	0.06	1.27	1.23	0.13	0.01	1.74				
Capacity (veh/h)	382	406	355	386	367	383	354	409				
Control Delay (s)	148.3	64.6	12.4	167.0	152.6	12.5	11.9	362.5				
Approach Delay (s)	109.6		160.6		137.9		361.3					
Approach LOS	F		F		F		F					
Intersection Summary												
Delay			194.6									
HCM Level of Service			F									
Intersection Capacity Utilization			114.5%	ICU Level of Service		H						
Analysis Period (min)			15									

2008 AM Peak NO BUILD Conditions

Existing Geometry  
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HCM Unsignalized Intersection Capacity Analysis  
2: Alameda Blvd & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	71	503	679	12	386	7	410	70	40	16	79	243
Peak Hour Factor	0.87	0.87	0.87	0.91	0.91	0.91	0.94	0.94	0.94	0.85	0.85	0.85
Hourly flow rate (vph)	82	578	780	13	424	8	436	74	43	19	93	286
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	660	780	13	432	436	117	19	379				
Volume Left (vph)	82	0	13	0	436	0	19	0				
Volume Right (vph)	0	780	0	8	0	43	0	286				
Hadj (s)	0.11	-0.65	0.55	0.04	0.55	-0.20	0.55	-0.48				
Departure Headway (s)	9.3	8.6	10.1	9.6	10.0	9.3	10.2	9.2				
Degree Utilization, x	1.71	1.87	0.04	1.15	1.21	0.30	0.05	0.97				
Capacity (veh/h)	390	424	347	386	365	383	347	379				
Control Delay (s)	352.0	417.5	12.3	123.7	147.0	15.0	12.6	67.3				
Approach Delay (s)	387.5		120.4		119.1		64.7					
Approach LOS	F		F		F		F					
Intersection Summary												
Delay		248.0										
HCM Level of Service		F										
Intersection Capacity Utilization		106.3%					ICU Level of Service			G		
Analysis Period (min)		15										

2008 PM Peak NO BUILD Conditions

Existing Geometry  
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Intersection #3

Holly Ave. / San Pedro Dr.

# HCM Unsignalized Intersection Capacity Analysis 3: Holly Ave & San Pedro Dr

Terry O. Brown, P.E.  
10/14/2007

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↕			↕		↙	↕		↙	↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	24	4	11	231	4	30	129	581	146	41	477	7
Peak Hour Factor	0.77	0.77	0.77	0.85	0.85	0.85	0.82	0.82	0.82	0.90	0.90	0.90
Hourly flow rate (vph)	31	5	14	272	5	35	157	709	178	46	530	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked								556				
vC, conflicting volume	1332	1826	269	1485	1741	443	538			887		
vC1, stage 1 conf vol	625	625		1112	1112							
vC2, stage 2 conf vol	707	1201		373	629							
vCu, unblocked vol	1332	1826	269	1485	1741	443	538			887		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.6	5.6		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	96	98	0	97	94	85			94		
cM capacity (veh/h)	181	132	726	142	149	559	1020			753		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	51	312	157	472	414	46	353	184				
Volume Left	31	272	157	0	0	46	0	0				
Volume Right	14	35	0	0	178	0	0	8				
cSH	219	156	1020	1700	1700	753	1700	1700				
Volume to Capacity	0.23	2.00	0.15	0.28	0.24	0.06	0.21	0.11				
Queue Length 95th (ft)	22	608	14	0	0	5	0	0				
Control Delay (s)	26.3	522.1	9.2	0.0	0.0	10.1	0.0	0.0				
Lane LOS	D	F	A			B						
Approach Delay (s)	26.3	522.1	1.4			0.8						
Approach LOS	D	F										
<b>Intersection Summary</b>												
Average Delay		83.4										
Intersection Capacity Utilization		54.5%										
Analysis Period (min)		15										
ICU Level of Service						A						

2008 AM Peak NO BUILD Conditions




















Existing Geometry  
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# HCM Unsignalized Intersection Capacity Analysis

## 3: Holly Ave & San Pedro Dr

Terry O. Brown, P.E.

10/14/2007

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	4	35	300	4	28	167	659	109	38	759	17
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.82	0.82	0.82	0.91	0.91	0.91
Hourly flow rate (vph)	28	5	47	353	5	33	204	804	133	42	834	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh		1			1							
Upstream signal (ft)								556				
pX, platoon unblocked												
vC, conflicting volume	1771	2271	426	1827	2214	468	853			937		
vC1, stage 1 conf vol	927	927		1277	1277							
vC2, stage 2 conf vol	844	1344		550	936							
vCu, unblocked vol	1771	2271	426	1827	2214	468	853			937		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.6	5.6		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	94	92	0	94	94	74			94		
cM capacity (veh/h)	112	88	574	86	76	539	776			721		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	80	391	204	536	401	42	556	297				
Volume Left	28	353	204	0	0	42	0	0				
Volume Right	47	33	0	0	133	0	0	19				
cSH	205	93	776	1700	1700	721	1700	1700				
Volume to Capacity	0.39	4.22	0.26	0.32	0.24	0.06	0.33	0.17				
Queue Length 95th (ft)	43	Err	26	0	0	5	0	0				
Control Delay (s)	33.5	Err	11.3	0.0	0.0	10.3	0.0	0.0				
Lane LOS	D	F	B			B						
Approach Delay (s)	33.5	Err	2.0			0.5						
Approach LOS	D	F										
Intersection Summary												
Average Delay		1561.0										
Intersection Capacity Utilization		66.0%		ICU Level of Service						C		
Analysis Period (min)		15										

2008 PM Peak NO BUILD Conditions

Existing Geometry  
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Intersection #4  
Holly Ave. / Driveway "A"

# HCM Unsignalized Intersection Capacity Analysis 4: Holly Ave & "A"

Terry O. Brown, P.E.  
10/14/2007

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	47	1	90	149	1	76
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	55	1	106	175	1	89
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			56		443	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			56		443	56
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	91
cM capacity (veh/h)			1542		531	1008
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	56	281	91			
Volume Left	0	106	1			
Volume Right	1	0	89			
cSH	1700	1542	996			
Volume to Capacity	0.03	0.07	0.09			
Queue Length 95th (ft)	0	6	7			
Control Delay (s)	0.0	3.2	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.2	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay		4.0				
Intersection Capacity Utilization		30.9%	ICU Level of Service	A		
Analysis Period (min)		15				

2008 AM Peak BUILD Conditions

Existing Geometry  
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10/27/2006

# Traffic Count Data Sheet

Year Counts Taken:

2006

E-W Street Paseo del Norte  
N-S Street: San Pedro

Speed Limit (Paseo del Norte)= 45 MPH  
Speed Limit (San Pedro)= 35 MPH  
Date of Count: 5/23/06

UNSIGNALIZED

Begin Time	End Time	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro)			Southbound (San Pedro)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	47	259	44	20	415	38	33	44	4	35	35	33
7:15 AM	7:30 AM	29	375	66	25	546	33	45	21	11	51	48	39
7:30 AM	7:45 AM	25	382	110	23	495	31	71	46	12	64	56	38
7:45 AM	8:00 AM	27	439	104	45	540	37	88	49	25	57	67	51
8:00 AM	8:15 AM	42	394	65	23	461	41	79	33	24	42	49	44
8:15 AM	8:30 AM	48	503	53	25	384	42	52	35	40	53	47	32
8:30 AM	8:45 AM	49	460	46	27	382	34	40	33	20	43	62	44
8:45 AM	9:00 AM	40	427	43	34	430	37	35	46	27	39	60	44
<b>AM Peak Hour Volumes</b>		<b>123</b>	<b>1590</b>	<b>345</b>	<b>116</b>	<b>2042</b>	<b>142</b>	<b>283</b>	<b>149</b>	<b>72</b>	<b>214</b>	<b>220</b>	<b>172</b>
% of Total Traffic		2.2%	29.1%	6.3%	2.1%	37.3%	2.6%	5.2%	2.7%	1.3%	3.9%	4.0%	3.1%
% Directional			37.6%			42.1%			9.2%			11.1%	
AM Peak Hour Factor			0.90			0.92			0.78				0.87

Begin Time	End Time	Eastbound (Paseo del Norte)			Westbound (Paseo del Norte)			Northbound (San Pedro)			Southbound (San Pedro)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	54	364	34	33	294	54	54	32	39	93	44	49
4:15 PM	4:30 PM	45	470	26	29	364	24	61	34	34	95	52	28
4:30 PM	4:45 PM	45	470	26	29	364	24	66	34	44	95	52	28
4:45 PM	5:00 PM	44	506	45	26	373	48	45	54	27	79	46	32
5:00 PM	5:15 PM	41	557	26	33	472	16	77	53	48	109	70	40
5:15 PM	5:30 PM	41	497	33	40	386	21	56	47	46	112	52	35
5:30 PM	5:45 PM	56	567	39	41	420	38	40	47	55	86	58	59
5:45 PM	6:00 PM	60	541	35	34	368	21	58	39	55	72	41	61
<b>PM Peak Hour Volumes</b>		<b>198</b>	<b>2162</b>	<b>133</b>	<b>148</b>	<b>1646</b>	<b>96</b>	<b>231</b>	<b>186</b>	<b>204</b>	<b>379</b>	<b>221</b>	<b>195</b>
% of Total Traffic		3.4%	37.3%	2.3%	2.6%	28.4%	1.7%	4.0%	3.2%	3.5%	6.5%	3.8%	3.4%
% Directional			43.0%			32.6%			10.7%			13.7%	
PM Peak Hour Factor			0.94			0.91			0.87				0.91

10/27/2007

# Traffic Count Data Sheet

Year Counts Taken:

2005

E-W Street Holly

N-S Street: San Pedro

Speed Limit (Holly)= N/A MPH

Speed Limit (San Pedro)= 35 MPH

Date of Count: 12/13/05

UNSIGNALIZED

Begin Time	End Time	Eastbound (Holly)			Westbound (Holly)			Northbound (San Pedro)			Southbound (San Pedro)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	0	4	0	0	0	44	45	0	0	62	0
7:15 AM	7:30 AM	3	0	4	0	0	0	23	67	0	0	79	3
7:30 AM	7:45 AM	6	0	4	0	0	0	22	94	0	0	110	2
7:45 AM	8:00 AM	3	0	1	0	0	0	22	86	0	0	96	1
8:00 AM	8:15 AM	7	0	4	0	0	0	28	108	0	0	114	2
8:15 AM	8:30 AM	7	0	2	0	0	0	22	63	0	0	93	1
8:30 AM	8:45 AM	3	0	4	0	0	0	36	55	0	0	95	0
8:45 AM	9:00 AM	4	0	3	0	0	0	23	83	0	0	113	4
<b>AM Peak Hour Volumes</b>		<b>23</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>351</b>	<b>0</b>	<b>0</b>	<b>413</b>	<b>6</b>
% of Total Traffic		2.6%	0.0%	1.2%	0.0%	0.0%	0.0%	10.5%	39.1%	0.0%	0.0%	46.0%	0.7%
% Directional			3.8%			0.0%			49.6%			46.7%	
AM Peak Hour Factor			0.77			#DIV/0!			0.82				0.90

Begin Time	End Time	Eastbound (Holly)			Westbound (Holly)			Northbound (San Pedro)			Southbound (San Pedro)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	5	0	7	0	0	0	30	97	0	0	135	4
4:15 PM	4:30 PM	5	0	12	0	0	0	23	134	0	0	142	3
4:30 PM	4:45 PM	4	0	8	0	0	0	28	94	0	0	153	2
4:45 PM	5:00 PM	5	0	6	0	0	0	25	94	0	0	160	2
5:00 PM	5:15 PM	2	0	3	0	0	0	35	85	0	0	166	2
5:15 PM	5:30 PM	4	0	7	0	0	0	28	122	0	0	206	4
5:30 PM	5:45 PM	7	0	13	0	0	0	24	88	0	0	188	5
5:45 PM	6:00 PM	7	0	11	0	0	0	20	90	0	0	186	6
<b>PM Peak Hour Volumes</b>		<b>20</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>385</b>	<b>0</b>	<b>0</b>	<b>746</b>	<b>17</b>
% of Total Traffic		1.5%	0.0%	2.6%	0.0%	0.0%	0.0%	8.2%	29.4%	0.0%	0.0%	57.0%	1.3%
% Directional			4.1%			0.0%			37.6%			58.3%	
PM Peak Hour Factor			0.68			#DIV/0!			0.82				0.91

# Traffic Count Data Sheet

Year Counts Taken:

2005

E-W Street Alameda

N-S Street: San Pedro

Speed Limit (Alameda)= 35 MPH

Speed Limit (San Pedro)= 40 MPH

Date of Count: 12/15/05

UNSIGNALIZED

Begin Time	End Time	Eastbound (Alameda)			Westbound (Alameda)			Northbound (San Pedro)			Southbound (San Pedro)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	43	64	67	5	94	2	74	4	2	0	3	37
7:15 AM	7:30 AM	28	67	75	7	111	2	77	6	3	0	4	57
7:30 AM	7:45 AM	9	59	60	3	115	1	86	6	2	0	5	54
7:45 AM	8:00 AM	17	69	98	5	118	0	104	5	6	0	4	69
8:00 AM	8:15 AM	24	67	49	4	81	0	74	10	1	1	7	51
8:15 AM	8:30 AM	24	70	56	3	88	4	55	5	4	0	5	27
8:30 AM	8:45 AM	12	44	60	4	94	4	54	5	4	4	6	39
8:45 AM	9:00 AM	40	65	52	0	93	2	70	13	2	2	10	48
<b>AM Peak Hour Volumes</b>		<b>78</b>	<b>262</b>	<b>282</b>	<b>19</b>	<b>425</b>	<b>3</b>	<b>341</b>	<b>27</b>	<b>12</b>	<b>1</b>	<b>20</b>	<b>231</b>
% of Total Traffic		4.6%	15.4%	16.6%	1.1%	25.0%	0.2%	20.0%	1.6%	0.7%	0.1%	1.2%	13.6%
% Directional			36.6%			26.3%			22.3%			14.8%	
AM Peak Hour Factor			0.85			0.91			0.83			0.86	

Begin Time	End Time	Eastbound (Alameda)			Westbound (Alameda)			Northbound (San Pedro)			Southbound (San Pedro)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	46	117	87	9	88	3	64	5	0	2	9	38
4:15 PM	4:30 PM	15	124	131	2	91	1	90	17	7	3	6	31
4:30 PM	4:45 PM	16	112	156	4	83	1	101	9	11	1	12	38
4:45 PM	5:00 PM	22	129	192	2	103	3	85	13	8	3	11	40
5:00 PM	5:15 PM	15	119	164	4	97	2	84	22	10	3	18	39
5:15 PM	5:30 PM	13	114	170	3	84	4	79	14	6	4	14	24
5:30 PM	5:45 PM	24	126	136	2	79	2	59	9	14	3	7	35
5:45 PM	6:00 PM	49	139	109	4	73	0	49	5	14	2	3	27
<b>PM Peak Hour Volumes</b>		<b>68</b>	<b>484</b>	<b>643</b>	<b>12</b>	<b>374</b>	<b>7</b>	<b>360</b>	<b>61</b>	<b>36</b>	<b>10</b>	<b>47</b>	<b>148</b>
% of Total Traffic		3.0%	21.5%	28.6%	0.5%	16.6%	0.3%	16.0%	2.7%	1.6%	0.4%	2.1%	6.6%
% Directional			53.1%			17.5%			20.3%			9.1%	
PM Peak Hour Factor			0.87			0.91			0.94			0.85	