

Family Dollar Store
(Los Ranchos Rd / Second St)

Traffic Impact Study

January 25, 2013

FINAL

Presented to:

Bernalillo Co. Public Works Dept.

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**Family Dollar Store (Los Ranchos Rd / Second St)
Traffic Impact Analysis**

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**Family Dollar Store
(Los Ranchos Rd / Second St)
Traffic Impact Analysis**

Introduction

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Family Dollar Store at Los Ranchos Rd / Second St and determine the impact of the development on the adjacent transportation system. The recommendations of this study will provide measures to mitigate the impact of the development of the site plan on critical intersections and street segments. This study is prepared to meet the requirements of the Bernalillo County Public Works Department associated with its review of the Family Dollar Store.

Study Procedures

A scoping report was submitted to and approved by the Bernalillo County Public Works Department prior to beginning the study to discuss scope and methodology to be utilized within the proposed Family Dollar Store Traffic Impact Study. Specific items included format, intersections to be studied, intersection analysis procedures, existing traffic counts, trip distribution methodology, and implementation and horizon year definition.

Intersection capacity analysis was performed in accordance with the procedures for signalized and unsignalized intersections in the Highway Capacity Manual, 2010, using Trafficware's Synchro version 8 Highway Capacity Software for signalized and unsignalized intersections.

The intersections targeted for analysis in this study are: Osuna Rd / Second St, Los Ranchos Rd / Second St, Ranchitos Rd / Second St and two full access driveways – one on Second St and the other on Los Ranchos Rd.

Study Area Characteristics

The subject area of land discussed in this report is bounded on the west by Second St and on the south by Los Ranchos Rd. See the Vicinity Map on Page A-2 in the Appendix of this report. The total area encompassed by this project is slightly less than 1 acre.

The expected year of full implementation of the expansion is 2013. A horizon year of 2023 will be analyzed in this study. This is in compliance with the New Mexico Department of

Transportation's *State Access Management Manual* which is also enforced to a large degree by Bernalillo County.

Access to this site will be from two full-access driveways - one on Second St and the other on Los Ranchos Rd. The full access of the proposed driveway on 2nd St. was preferred by the Bernalillo County staff at a preliminary meeting held last month.

Second St is a four lane urban roadway with curb & gutter but no medians. There is a center two-way left turn lane on 2nd St. in the vicinity of this project. 2nd St. is classified as an Urban Principal Arterial roadway on the Long Range Roadway Map for the Albuquerque Metropolitan Planning Area. The speed limit in the area is 45 M.P.H.

Osuna Rd is a four lane urban divided roadway with curb & gutter and medians east of Second St. It is classified as an Urban Principal Arterial roadway on the Long Range Roadway Map for the Albuquerque Metropolitan Planning Area. The speed limit in the area is 45 M.P.H. West of Second St, Osuna Rd becomes a two lane urban roadway with curb and gutter but no medians. It is classified as an Urban Collector roadway west of Second St.

Neither Los Ranchos Rd nor Ranchitos Rd are classified on the Long Range Roadway Map for the Albuquerque Metropolitan Planning Area. The posted speed limit on Los Ranchos east of 2nd St. is 25 MPH.

Description of Proposed Development

The Family Dollar Store is a proposed 8,400 SF shopping center commercial project. If the property were to develop in a manner significantly different than the proposed plan considered in this report such that the number of generated trips is significantly greater, then an update to this study may be required by the County.

Access to the property will be via two full access driveways: one on Second St and the other on Los Ranchos Rd.

Trip Generation Rates

Trip generation rates for this proposed development were projected based on data contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition published in 2008. The following table lists the proposed project and the calculated daily, AM, and PM Peak Hour trip generation rates resulting from application of the trip generation rate equations contained in the ITE Trip Generation Manual. However, the PM volumes were reduced to match recent traffic count data from an existing Family Dollar Store in Hernandez, New Mexico.

Family Dollar Store (Los Ranchos Rd / Second St)

Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
<i>DESCRIPTION</i>	<i>GROSS</i>	<i>ENTER</i>	<i>EXIT</i>	<i>ENTER</i>	<i>EXIT</i>
Summary Sheet	Units				
Shopping Center (820)	8.40	1,357	22	14	30
<i>Pass-By Trips</i>	25%		-6	-4	-8
Total Primary Trips		16	10	22	23

The preceding table demonstrates the calculated trip generation rate based on the proposed plan and the projected use for the site. A 25% adjustment was made to account for pass-by trips. Trip Generation Rate Summary Table and Individual Trip Generation Rate Worksheet for individual land uses are contained on Pages A-5 thru A-6 in the Appendix.

Trip Distribution / Trip Assignments

Primary and Diverted Linked Trips:

Commercial Land Use

Primary and diverted linked trips for the commercial land use development were distributed proportionally to the 2015 projected population of Data Analysis Subzones within a two mile radius of the proposed development. Population data for the years 2004 and 2030 were taken from the 2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico, supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2004 and 2030 was interpolated linearly to obtain 2015 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 Trip Distribution map can be found in the Appendix on Page A-14.

Results of trip distribution analysis indicate that traffic will be weighted about 40% to the north, 20% to the west, 35% to the south, and 5% to the east (percentages are rounded to the nearest 5%).

Analysis of Existing Conditions

An analysis of the existing conditions of the transportation system was not provided in this report because the implementation year analysis (2013) is only about one year into the future and closely represents existing conditions.

Background Traffic Growth

Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2002 through 2011 Traffic Flow maps prepared by the Mid-Region Council of Governments (MRCOG). Almost all of the Traffic Flow Data for those years taken from the MRCOG Traffic Flow Maps were Standard Data. The data from those years for each approach was plotted on a graph and a linear “regression trend line” calculated using the equation format $y=mx+b$. The growth rate was determined by calculating the average volume increase per year during the time period considered and dividing that volume into the most recent AWDT used in the analysis from which future volumes will be calculated. The rate of growth of that trend line 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, a generic growth rate of 1% was used. Due to the potential for growth in the area, it was believed that a zero percent growth rate was inappropriate for this study. Additionally, if the R^2 value of the trend line was low, other means of establishing a probable growth rate from the data accumulated was considered. Historical Growth Rate Graphs with linear regression trendlines are shown in the Appendix on Pages A-18 thru A-24.

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-28 thru A-48).

Projected Peak Hour Turning Movements for 2013 and 2023

The calculated annual growth rates were applied to the most recent peak hour traffic count volumes. The sum of the existing volumes plus growth constitutes the 2013 and 2023 NO BUILD volumes utilized in this report. To these volumes, the generated trips based on implementation of the proposed Family Dollar Store were added to obtain the 2013 and 2023 BUILD Volumes utilized for the 2013 and 2023 BUILD Condition analyses. See Appendix Pages A-26 thru A-49 for further information regarding the 2013 and 2023 turning movement volumes.

Implementation Year (2013) and Horizon Year (2023) Traffic Analysis

Classification of levels-of-service and delay for signalized and unsignalized intersections will be made based on criteria established by Synchro, Version 8 computer modeling software which approximates the 2010 Highway Capacity Manual methodology. The average control delay is calculated for each intersection and for each lane group of each leg of the intersection. The control delay then determines the level-of-service based on the following tables:

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 10	A
> 10 and ≤ 20	B
> 20 and ≤ 35	C
> 35 and ≤ 55	D
> 55 and ≤ 80	E
> 80	F

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 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.

Following is a summary of the results of the Synchro Analysis for the intersection targeted for evaluation in this report:

IMPLEMENTATION YEAR (2013) AND HORIZON YEAR (2023)

Intersection #1: Osuna Rd / Second St – Appendix Pages A-50 thru A-57

The results of the 2013 implementation year analysis of the signalized intersection of Osuna Rd / Second St are summarized in the following table:

Intersection: 1 - OSUNA RD / SECOND ST

		2013 AM Peak Hour BUILD				2013 PM Peak Hour BUILD				
		(EXIST. GEOM.)				(EXIST. GEOM.)				
		NO BUILD		BUILD		NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	1	C - 31.1	1	C - 32.3	L	1	C - 34.6	1	D - 36.1
	T	2	D - 45.9	2	D - 45.5	T	2	D - 37.7	2	D - 38.7
	R	1	C - 28.8	1	C - 28.8	R	1	C - 28.8	1	C - 29.6
WB	L	1	C - 30.8	1	C - 34.5	L	1	C - 26.3	1	C - 27.3
	T	1	D - 47.7	1	D - 54.7	T	1	D - 52.8	1	E - 58.1
	R	1	B - 16.8	1	B - 18.0	R	1	E - 75.2	1	F - 84.9
NB	L	1	C - 21.5	1	C - 20.4	L	1	B - 17.8	1	B - 17.3
	T	2	C - 30.4	2	C - 28.2	T	2	D - 39.7	2	D - 37.7
	R	>	C - 30.9	>	C - 28.6	R	>	D - 40.3	>	D - 38.2
SB	L	1	C - 30.9	1	C - 29.7	L	1	D - 43.8	1	D - 41.7
	T	2	C - 20.2	2	B - 19.3	T	2	C - 22.6	2	C - 21.8
	R	1	A - 10.0	1	A - 9.5	R	1	B - 17.1	1	B - 16.5
Intersection:		C - 29.2		C - 28.9		D - 41.2		D - 42.5		

Note: ">" designates a shared right or left turn lane next to a thru lane.

This study demonstrates that the signalized intersection will operate at acceptable levels-of-service for the 2013 AM Peak Hour and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will have no significant adverse impact on this intersection. The westbound right turn and thru movements are somewhat less than desirable. It is clear that the long delays are present in the NO BUILD condition as well as the BUILD. The impact of this development on the signalized intersection are not significant. Therefore, no recommendations are made for the intersection of Osuna Rd / Second St.

The results of the Horizon Year (2023) analysis of the signalized intersection of Osuna Rd / Second St are summarized in the following table:

Intersection: 1 - OSUNA RD / SECOND ST

		2023 AM Peak Hour BUILD				2023 PM Peak Hour BUILD				
		(EXIST. GEOM.)				(EXIST. GEOM.)				
		NO BUILD		BUILD		NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	1	D - 35.7	1	D - 36.5	L	1	D - 50.4	1	D - 42.0
	T	2	D - 52.7	2	D - 52.7	T	2	D - 45.1	2	D - 40.4
	R	1	C - 28.9	1	C - 28.9	R	1	C - 33.6	1	C - 29.8
WB	L	1	D - 41.3	1	D - 41.3	L	1	C - 34.1	1	C - 29.7
	T	1	E - 66.1	1	E - 66.1	T	1	F - 82.4	1	E - 72.7
	R	1	B - 13.9	1	B - 13.8	R	1	F - 98.0	1	F - 98.3
NB	L	1	C - 25.4	1	C - 25.5	L	1	B - 18.9	1	B - 18.6
	T	2	D - 49.1	2	D - 50.4	T	2	D - 49.4	2	E - 56.9
	R	>	D - 51.7	>	D - 53.1	R	>	D - 50.9	>	E - 59.0
SB	L	1	D - 38.4	1	D - 38.5	L	1	E - 63.8	1	F - 83.4
	T	2	C - 21.1	2	C - 21.1	T	2	C - 23.1	2	C - 23.4
	R	1	A - 9.7	1	A - 9.7	R	1	B - 17.4	1	B - 17.6
Intersection:		D - 36.1		D - 36.3		D - 53.4		D - 55.0		

Note: ">" designates a shared right or left turn lane next to a thru lane.

This study demonstrates that the signalized intersection will operate at acceptable levels-of-service for the 2023 AM Peak Hour and PM Peak Hour NO BUILD and BUILD Conditions considered in this report, and that the newly generated traffic from this development will have no significant adverse impact on this intersection. The long delays associated with the westbound traffic are present for both the NO BUILD as well as the BUILD conditions. Therefore, no recommendations are made for the intersection of Osuna Rd / Second St.

The results of the Poisson's Arrival Method queuing analysis for this intersection are summarized in the following table:

Queueing Analysis Summary Sheet

Project: Family Dollar Store (Los Ranchos / Second St)
 Intersection: Osuna Rd / Second St

2013											
Approach	Left Turns			Thru Movements			Right Turns				
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
<i>Existing Lane Length</i>	1	98	100	2	446	Cont	1	86	100		
AM NO BUILD Queue	1	99	125	2	450	275	1	87	125		
AM BUILD Queue	1	101	125	2	450	275	1	87	125		
<i>Existing Lane Length</i>	1	71	100	2	294	Cont	1	71	100		
PM NO BUILD Queue	1	72	125	2	297	225	1	72	125		
PM BUILD Queue	1	74	125	2	297	225	1	72	125		
<hr/>											
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
<i>Existing Lane Length</i>	1	107	200	1	239	Cont	1	208	700		
AM NO BUILD Queue	1	108	150	1	241	250	1	210	225		
AM BUILD Queue	1	108	150	1	241	250	1	213	225		
<i>Existing Lane Length</i>	1	208	200	1	419	Cont	1	555	700		
PM NO BUILD Queue	1	210	275	1	423	475	1	561	600		
PM BUILD Queue	1	210	275	1	423	475	1	566	600		
<hr/>											
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
<i>Existing Lane Length</i>	1	58	375	2	397	Cont	0	168	0		
AM NO BUILD Queue	1	59	100	2	401	250	0	170	200		
AM BUILD Queue	1	59	100	2	402	250	0	170	200		
<i>Existing Lane Length</i>	1	160	375	2	979	Cont	0	124	0		
PM NO BUILD Queue	1	162	225	2	989	600	0	125	175		
PM BUILD Queue	1	162	225	2	991	600	0	125	175		
<hr/>											
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
<i>Existing Lane Length</i>	1	523	475	2	1,149	Cont	1	49	300		
AM NO BUILD Queue	1	528	475	2	1,160	575	1	49	75		
AM BUILD Queue	1	530	475	2	1,161	575	1	50	75		
<i>Existing Lane Length</i>	1	208	475	2	527	Cont	1	100	300		
PM NO BUILD Queue	1	210	275	2	532	350	1	101	150		
PM BUILD Queue	1	215	275	2	534	350	1	104	150		

Cycle Length: AM
90 PM
110

NOTE: Queue lengths are in feet.

The recommendations of the queuing analysis for this intersection are summarized in the following table:

Lane Description	Existing Length (Ft)	NO BUILD Length (Ft)	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	100	125	125	No Recommendation
Eastbound Right Turn:*	100	60	60	No Recommendation
Westbound Left Turn:	200	275	275	275' plus transition.
Westbound Right Turn:*	700	300	300	No Recommendation
Northbound Left Turn:	375	225	225	No Recommendation
Northbound Right Turn:*	0	100	100	No Recommendation
Southbound Left Turn:	475	475	475	No Recommendation
Southbound Right Turn:*	300	80	80	No Recommendation

* - Calculated right turn queue lengths have been reduced by 50% to account for right-turns-on red and overlap phases.

The queuing analysis recommends lengthening the westbound left turn lane to 275 feet plus transition. This lengthening cannot be done because there is an existing drainage structure in the median. In addition, this improvement would not be worth the expense for adding only 3 vehicles to the existing queue storage. Therefore, no recommendations are made for the queue lengths at the intersection.

Intersection #2: Los Ranchos Rd / Second St – Appendix Pages A-58 thru A-65

The results of the 2013 implementation year analysis of the signalized intersection of Los Ranchos Rd / Second St are summarized in the following tables:

Intersection: 2 - LOS RANCHOS RD / SECOND ST

		2013 AM Peak Hour BUILD				2013 PM Peak Hour BUILD				
		(EXIST. GEOM.)				(EXIST. GEOM.)				
		NO BUILD		BUILD		NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	>	D - 37.8	>	C - 34.4	L	>	D - 45.9	>	C - 31.9
	T	1	D - 37.8	1	C - 34.4	T	1	D - 45.9	1	C - 31.9
	R	>	D - 37.8	>	C - 34.4	R	>	D - 45.9	>	C - 31.9
WB	L	>	C - 34.7	>	C - 32.3	L	>	D - 48.1	>	C - 33.7
	T	1	C - 34.7	1	C - 32.3	T	1	D - 48.1	1	C - 33.7
	R	>	C - 34.7	>	C - 32.3	R	>	D - 48.1	>	C - 33.7
NB	L	1	A - 9.0	1	A - 9.6	L	1	A - 2.8	1	A - 4.1
	T	2	A - 5.8	2	A - 6.4	T	2	A - 6.9	2	B - 12.8
	R	>	A - 5.8	>	A - 6.4	R	>	A - 6.9	>	B - 12.7
SB	L	1	A - 4.1	1	A - 3.9	L	1	A - 6.1	1	A - 8.9
	T	2	B - 11.1	2	B - 13.2	T	2	A - 5.1	2	A - 6.6
	R	>	B - 11.2	>	B - 13.2	R	>	A - 5.1	>	A - 6.6
Intersection:		B - 11.2		B - 12.6		A - 9.0		B - 12.5		

Note: ">" designates a shared right or left turn lane next to a thru lane.

This study demonstrates that the signalized intersection will operate at acceptable levels-of-service for the 2013 AM Peak Hour and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will have no significant adverse impact on this intersection. Therefore, no recommendations are made for the intersection of Los Ranchos Rd / Second St.

The results of the Horizon Year (2023) analysis of the signalized intersection of Los Ranchos Rd / Second St are summarized in the following table:

Intersection: 2 - LOS RANCHOS RD / SECOND ST

2023 AM Peak Hour BUILD

2023 PM Peak Hour BUILD

		(EXIST. GEOM.)				(EXIST. GEOM.)				
		NO BUILD		BUILD		NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	>	D - 37.8	>	D - 36.6	L	>	D - 50.8	>	C - 33.9
	T	1	D - 37.8	1	D - 36.6	T	1	D - 50.8	1	C - 33.9
	R	>	D - 37.8	>	D - 36.6	R	>	D - 50.8	>	C - 33.9
WB	L	>	C - 34.5	>	C - 34.1	L	>	D - 54.3	>	D - 36.0
	T	1	C - 34.5	1	C - 34.1	T	1	D - 54.3	1	D - 36.0
	R	>	C - 34.5	>	C - 34.1	R	>	D - 54.3	>	D - 36.0
NB	L	1	B - 12.6	1	B - 13.2	L	1	A - 3.0	1	A - 4.2
	T	2	A - 6.3	2	A - 6.6	T	2	A - 7.7	2	B - 16.0
	R	>	A - 6.3	>	A - 6.6	R	>	A - 7.8	>	B - 16.0
SB	L	1	A - 4.4	1	A - 4.1	L	1	A - 7.7	1	B - 11.6
	T	2	B - 13.1	2	B - 17.5	T	2	A - 5.2	2	A - 6.8
	R	>	B - 13.2	>	B - 17.4	R	>	A - 5.2	>	A - 6.8
Intersection:		B - 12.7		B - 15.6		A - 10.0		B - 14.8		

Note: ">" designates a shared right or left turn lane next to a thru lane.

This study demonstrates that the signalized intersection will operate at acceptable levels-of-service for the 2023 AM Peak Hour and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will have no significant adverse impact on this intersection. Therefore, no recommendations are made for the intersection of Los Ranchos Rd / Second St.

The results of the Poisson's Arrival Method queuing analysis for this intersection are summarized in the following table:

Queueing Analysis Summary Sheet

Project: Family Dollar Store (Los Ranchos / Second St)
 Intersection: **Los Ranchos Rd / Second St**

2013

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
<i>Existing Lane Length</i>	0	28	0	1	25	Cont	0	36	0
AM NO BUILD Queue	0	28	50	1	25	50	0	36	75
AM BUILD Queue	0	29	50	1	28	50	0	36	75
<i>Existing Lane Length</i>	0	15	0	1	24	Cont	0	17	0
PM NO BUILD Queue	0	15	50	1	24	50	0	17	50
PM BUILD Queue	0	17	50	1	28	75	0	17	50
Westbound									
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
<i>Existing Lane Length</i>	0	15	0	1	16	Cont	0	13	0
AM NO BUILD Queue	0	15	50	1	16	50	0	13	25
AM BUILD Queue	0	18	50	1	18	50	0	13	25
<i>Existing Lane Length</i>	0	22	0	1	32	Cont	0	27	0
PM NO BUILD Queue	0	22	50	1	32	75	0	27	75
PM BUILD Queue	0	28	75	1	36	75	0	27	75
Northbound									
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
<i>Existing Lane Length</i>	1	30	125	2	559	Cont	0	22	0
AM NO BUILD Queue	1	30	50	2	565	325	0	22	50
AM BUILD Queue	1	30	50	2	569	325	0	26	50
<i>Existing Lane Length</i>	1	57	125	2	1,556	Cont	0	13	0
PM NO BUILD Queue	1	58	100	2	1,572	875	0	13	50
PM BUILD Queue	1	58	100	2	1,577	875	0	18	50
Southbound									
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
<i>Existing Lane Length</i>	1	61	225	2	1,547	Cont	0	17	0
AM NO BUILD Queue	1	62	100	2	1,562	725	0	17	50
AM BUILD Queue	1	62	100	2	1,565	725	0	18	50
<i>Existing Lane Length</i>	1	26	225	2	625	Cont	0	12	0
PM NO BUILD Queue	1	26	50	2	631	400	0	12	50
PM BUILD Queue	1	26	50	2	637	400	0	14	50

Cycle Length: AM PM
 90 **110**

NOTE: Queue lengths are in feet.

The recommendations of the queuing analysis for this intersection are summarized in the following table:

Lane Description	Existing Length (Ft)	NO BUILD Length (Ft)	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	0	50	50	No Recommendation
Eastbound Right Turn:*	0	40	40	No Recommendation
Westbound Left Turn:	0	50	75	No Recommendation
Westbound Right Turn:*	0	40	40	No Recommendation
Northbound Left Turn:	125	100	100	No Recommendation
Northbound Right Turn:*	0	30	30	No Recommendation
Southbound Left Turn:	225	100	100	No Recommendation
Southbound Right Turn:*	0	30	30	No Recommendation

* - Calculated right turn queue lengths have been reduced by 50% to account for right-turns-on red and overlap phases.

The queueing analysis demonstrates that the existing queue lengths are adequate for the 2013 AM Peak Hour and PM Peak Hour BUILD Conditions. Therefore, no recommendations are made for the queue lengths at the intersection.

Intersection #3: Ranchitos Rd / Second St - Appendix Pages A-66 thru A-73

The results of the 2013 implementation year analysis of the signalized intersection of Ranchitos Rd. / Second St are summarized in the following tables:

Intersection: 3 - RANCHITOS RD / SECOND ST

		2013 AM Peak Hour BUILD				2013 PM Peak Hour BUILD				
		(EXIST. GEOM.) NO BUILD		(EXIST. GEOM.) BUILD		(EXIST. GEOM.) NO BUILD		(EXIST. GEOM.) BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	>	D - 43.5	>	D - 43.8	L	>	D - 48.6	>	D - 48.7
	T	1	D - 43.5	1	D - 43.8	T	1	D - 48.6	1	D - 48.7
	R	>	D - 43.5	>	D - 43.8	R	>	D - 48.6	>	D - 48.7
WB	L	>	C - 31.9	>	C - 31.9	L	>	D - 48.3	>	D - 48.5
	T	1	C - 31.9	1	C - 31.9	T	1	D - 48.3	1	D - 48.5
	R	>	C - 31.9	>	C - 31.9	R	>	D - 48.3	>	D - 48.5
NB	L	1	B - 14.0	1	B - 14.4	L	1	A - 2.8	1	A - 2.9
	T	2	A - 0.1	2	A - 0.1	T	2	A - 0.9	2	A - 1.3
	R	>	A - 0.1	>	A - 0.1	R	>	A - 0.9	>	A - 1.3
SB	L	1	A - 5.1	1	A - 5.1	L	1	A - 2.6	1	A - 2.6
	T	2	B - 16.2	2	B - 16.4	T	2	A - 4.7	2	A - 4.8
	R	1	A - 7.1	1	A - 7.2	R	1	A - 3.8	1	A - 3.9
Intersection:		B - 14.5		B - 14.7		A - 4.9		A - 5.4		

Note: ">" designates a shared right or left turn lane next to a thru lane.

This study demonstrates that the signalized intersection will operate at acceptable levels-of-service for the 2013 AM Peak Hour and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will have no significant adverse impact on this intersection. Therefore, no recommendations are made for the intersection of Ranchitos Rd / Second St.

The results of the Horizon Year (2023) analysis of the signalized intersection of Ranchitos Rd / Second St are summarized in the following table:

Intersection: 3 - RANCHITOS RD / SECOND ST

		<u>2023 AM Peak Hour BUILD</u>				<u>2023 PM Peak Hour BUILD</u>				
		(EXIST. GEOM.)				(EXIST. GEOM.)				
		NO BUILD		BUILD		NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	>	D - 46.1	>	D - 46.5	L	>	D - 54.2	>	D - 48.8
	T	1	D - 46.1	1	D - 46.5	T	1	D - 54.2	1	D - 48.8
	R	>	D - 46.1	>	D - 46.5	R	>	D - 54.2	>	D - 48.8
WB	L	>	C - 31.5	>	C - 31.5	L	>	D - 53.8	>	D - 48.6
	T	1	C - 31.5	1	C - 31.5	T	1	D - 53.8	1	D - 48.6
	R	>	C - 31.5	>	C - 31.5	R	>	D - 53.8	>	D - 48.6
NB	L	1	C - 20.1	1	C - 20.4	L	1	A - 2.9	1	A - 3.1
	T	2	A - 0.2	2	A - 0.2	T	2	A - 1.2	2	A - 2.4
	R	>	A - 0.2	>	A - 0.2	R	>	A - 1.2	>	A - 2.5
SB	L	1	A - 5.5	1	A - 5.5	L	1	A - 2.6	1	A - 2.8
	T	2	C - 22.9	2	C - 23.3	T	2	A - 4.7	2	A - 5.1
	R	1	A - 7.6	1	A - 7.7	R	1	A - 3.8	1	A - 4.1
Intersection:		B - 19.0		B - 19.3		A - 5.5		A - 6.2		

Note: ">" designates a shared right or left turn lane next to a thru lane.

This study demonstrates that the signalized intersection will operate at acceptable levels-of-service for the 2023 AM Peak Hour and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will have no significant adverse impact on this intersection. Therefore, no recommendations are made for the intersection of Ranchitos Rd / Second St.

The results of the Poisson's Arrival Method queuing analysis for this intersection are summarized in the following table:

Queueing Analysis Summary Sheet

Project: Family Dollar Store (Los Ranchos / Second St)
 Intersection: Ranchitos Rd / Second St

2013											
Approach	Left Turns			Thru Movements			Right Turns				
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	0	25	0	1	38	Cont	0	106	0		
AM NO BUILD Queue	0	25	50	1	38	75	0	107	150		
AM BUILD Queue	0	25	50	1	38	75	0	109	150		
Existing Lane Length	0	17	0	1	13	Cont	0	37	0		
PM NO BUILD Queue	0	17	50	1	13	50	0	37	75		
PM BUILD Queue	0	17	50	1	13	50	0	40	75		
Westbound											
Existing Lane Length	0	6	0	1	21	Cont	0	5	0		
AM NO BUILD Queue	0	6	25	1	21	50	0	5	25		
AM BUILD Queue	0	9	25	1	21	50	0	5	25		
Existing Lane Length	0	8	0	1	27	Cont	0	29	0		
PM NO BUILD Queue	0	8	25	1	27	75	0	29	75		
PM BUILD Queue	0	13	50	1	27	75	0	29	75		
Northbound											
Existing Lane Length	1	60	125	2	513	Cont	0	7	0		
AM NO BUILD Queue	1	61	100	2	519	300	0	7	25		
AM BUILD Queue	1	63	100	2	521	300	0	9	25		
Existing Lane Length	1	62	125	2	1,502	Cont	0	9	0		
PM NO BUILD Queue	1	63	100	2	1,520	850	0	9	25		
PM BUILD Queue	1	66	125	2	1,525	850	0	14	50		
Southbound											
Existing Lane Length	1	40	150	2	1,602	Cont	1	72	300		
AM NO BUILD Queue	1	40	75	2	1,618	750	1	73	100		
AM BUILD Queue	1	40	75	2	1,621	750	1	73	100		
Existing Lane Length	1	14	150	2	607	Cont	1	30	300		
PM NO BUILD Queue	1	14	50	2	613	400	1	30	75		
PM BUILD Queue	1	14	50	2	618	400	1	30	75		

Cycle Length: **AM** 90 **PM** 110

NOTE: Queue lengths are in feet.

The recommendations of the queuing analysis for this intersection are summarized in the following table:

Lane Description	Existing Length (Ft)	NO BUILD Length (Ft)	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	0	50	50	No Recommendation
Eastbound Right Turn:*	0	80	80	No Recommendation
Westbound Left Turn:	0	25	50	No Recommendation
Westbound Right Turn:*	0	40	40	No Recommendation
Northbound Left Turn:	125	100	125	No Recommendation
Northbound Right Turn:*	0	10	30	No Recommendation
Southbound Left Turn:	150	75	75	No Recommendation
Southbound Right Turn:*	300	50	50	No Recommendation

* - Calculated right turn queue lengths have been reduced by 50% to account for right-turns-on red and overlap phases.

The queueing analysis demonstrates that the existing queue lengths are adequate for the 2013 AM Peak Hour and PM Peak Hour BUILD Conditions. Therefore, no recommendations are made for the queue lengths at the intersection.

Intersection #4 – Driveway ‘A’ / Second St - Pages A-74 thru A-77

The following table provides a summary of the Levels-of-Service / delays analyzed in this study:

Intersection: 4 - DRIVEWAY 'A' / SECOND ST

2013 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
WB	L		A - 0.0	0	A - 0.0
	R	1	B - 10.7	1	C - 17.6
SBI	L	1	A - 9.1	1	B - 15.0
Intersection:		u - N/A		u - N/A	

Note: ">" designates a shared right or left turn lane next to a thru lane.

The 2013 analysis of the intersection of Driveway 'A' / Second St in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed.

Intersection: 4 - DRIVEWAY 'A' / SECOND ST

2023 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
WB	L		A - 0.0	0	A - 0.0
	R	1	B - 11.0	1	C - 19.4
SB	L	1	A - 9.0	1	C - 16.7
	Intersection:		u - N/A		u - N/A

Note: ">" designates a shared right or left turn lane next to a thru lane.

The 2023 analysis of the intersection of Driveway 'A' / Second St in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed.

Driveway "A" is proposed to be a right-in, right-out, left-in only driveway.

Intersection #5 - Los Ranchos Rd / Driveway 'B' - Pages A-78 thru A-81

The following table provides a summary of the Levels-of-Service / delays analyzed in this study:

Intersection: 5 - LOS RANCHOS RD / DRIVEWAY 'B'

2013 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	A - 7.5	>	A - 7.5
	L	1	A - 8.7	1	A - 9.0
Intersection:		u - N/A		u - N/A	

Note: ">" designates a shared right or left turn lane next to a thru lane.

The 2013 analysis of the intersection of Los Ranchos Rd / Driveway 'B' in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed.

Intersection: 5 - LOS RANCHOS RD / DRIVEWAY 'B'

2023 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
SB	EB	>	A - 7.4	>	A - 7.5
	L	1	A - 8.8	1	A - 9.0
Intersection:		u - N/A		u - N/A	

Note: ">" designates a shared right or left turn lane next to a thru lane.

The 2023 analysis of the intersection of Los Ranchos Rd / Driveway 'B' in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed.

Driveway "B" is proposed to be a full access unsignalized driveway.

Access Design Specifications

Access along Second St will be required to comply with Table 18.C-1 of the New Mexico Department of Transportation's *State Access Management Manual* to the degree possible since Bernalillo County generally tries to comply with the State guidelines. Second St is considered an Urban Principal Arterial Roadway and requires a driveway spacing of 450 feet for a posted speed of 45 MPH. This requirement cannot be met because the length of the property fronting Second St is only approximately 110 feet. Therefore the spacing to the next driveway and even to the intersection of Los Ranchos Rd / Second St is less than 450 feet. This is common along Second St. Also, a preliminary meeting was held by the developer with Bernalillo County staff at the initiation of the approval process for this project. The County staff attending the preliminary meeting were in support of the proposed full access driveway on 2nd St. as shown on the site plan in this study on Page A-3.

Both a southbound left turn deceleration lane and a northbound right turn deceleration lane is warranted for Driveway 'A'. The southbound left turn lane should be 425 feet plus 12.5:1 taper; however, this deceleration lane is not needed because there is already a two-way left turn lane along Second St. in this area. The northbound right turn deceleration lane should be 400 feet plus 12.5:1 taper; however this deceleration lane cannot be constructed due to the lack of adequate distance from the intersection of Los Ranchos Rd / Second St, as previously described. A northbound right turn taper lane is recommended.

Findings and Conclusions

The proposed project located at Los Ranchos Rd / Second St is a relatively moderately sized project. As such, this analysis concludes that there are no significant adverse impacts to the adjacent transportation system.

Recommendations

All constructed improvements to the proposed driveway shall be designed and built to maintain adequate safe sight distances to the degree possible.

The project should be served by two driveways. Driveway "A" should be located as far north on the property as possible. It should be operated as a right-in, right-out, left-in only driveway. Existing (westbound) left turns should not be permitted. Signing and driveway geometry should be implemented to enforce driveway constraint of the exiting left turn movement. Driveway "B" should be located near the east end of the property. Driveway "B" should be a full access unsignalized driveway. Driveways should be constructed utilizing 25 feet curb return radii or larger if required to accommodate large delivery trucks. Civil Engineer shall provide truck turning templates for design trucks to demonstrate adequate driveway design.

A northbound right turn taper lane should be constructed on 2nd St. at Driveway "A". The existing center two-way left turn lane on 2nd St. can serve as the southbound left turn deceleration lane into Driveway "A".

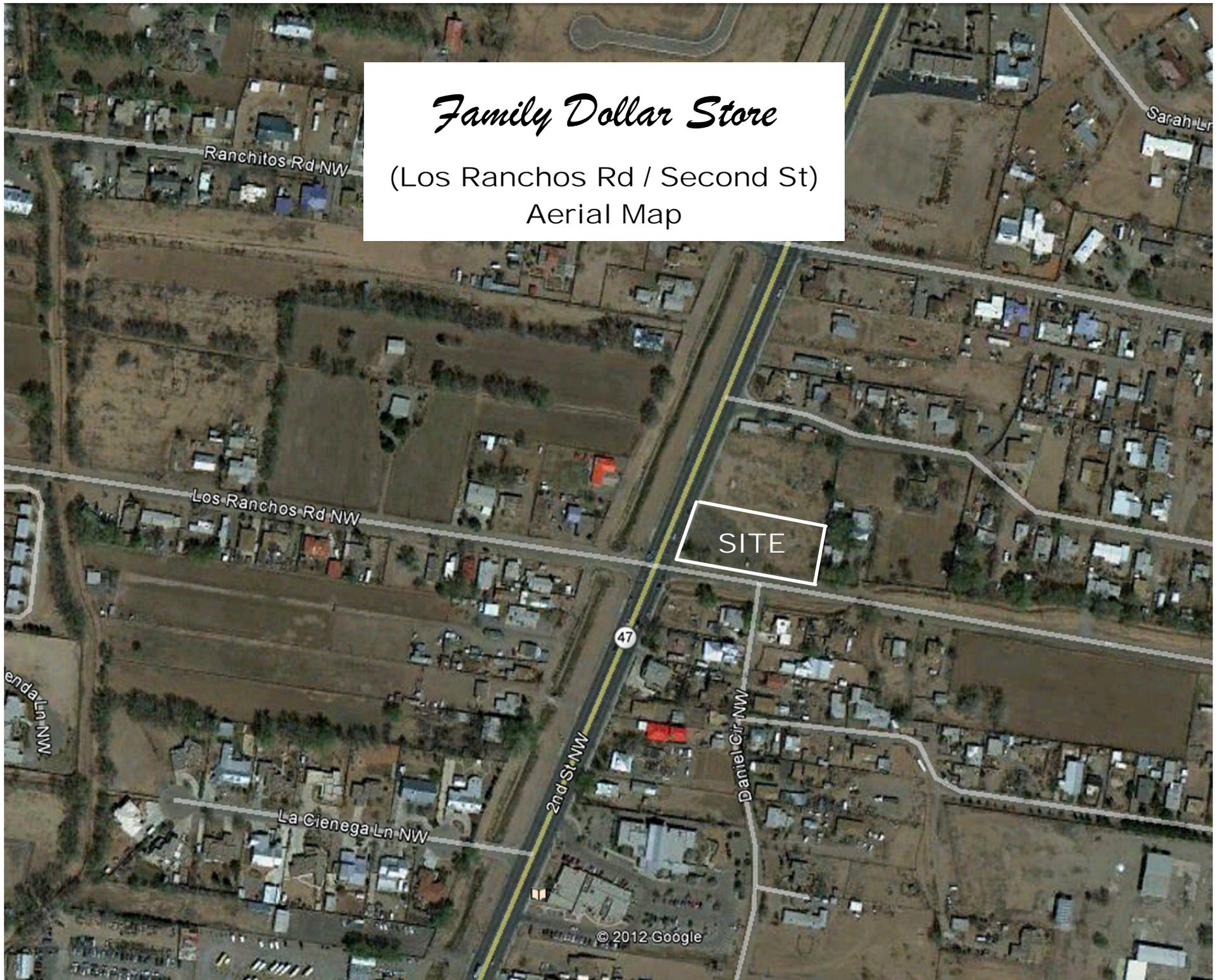
Appendix

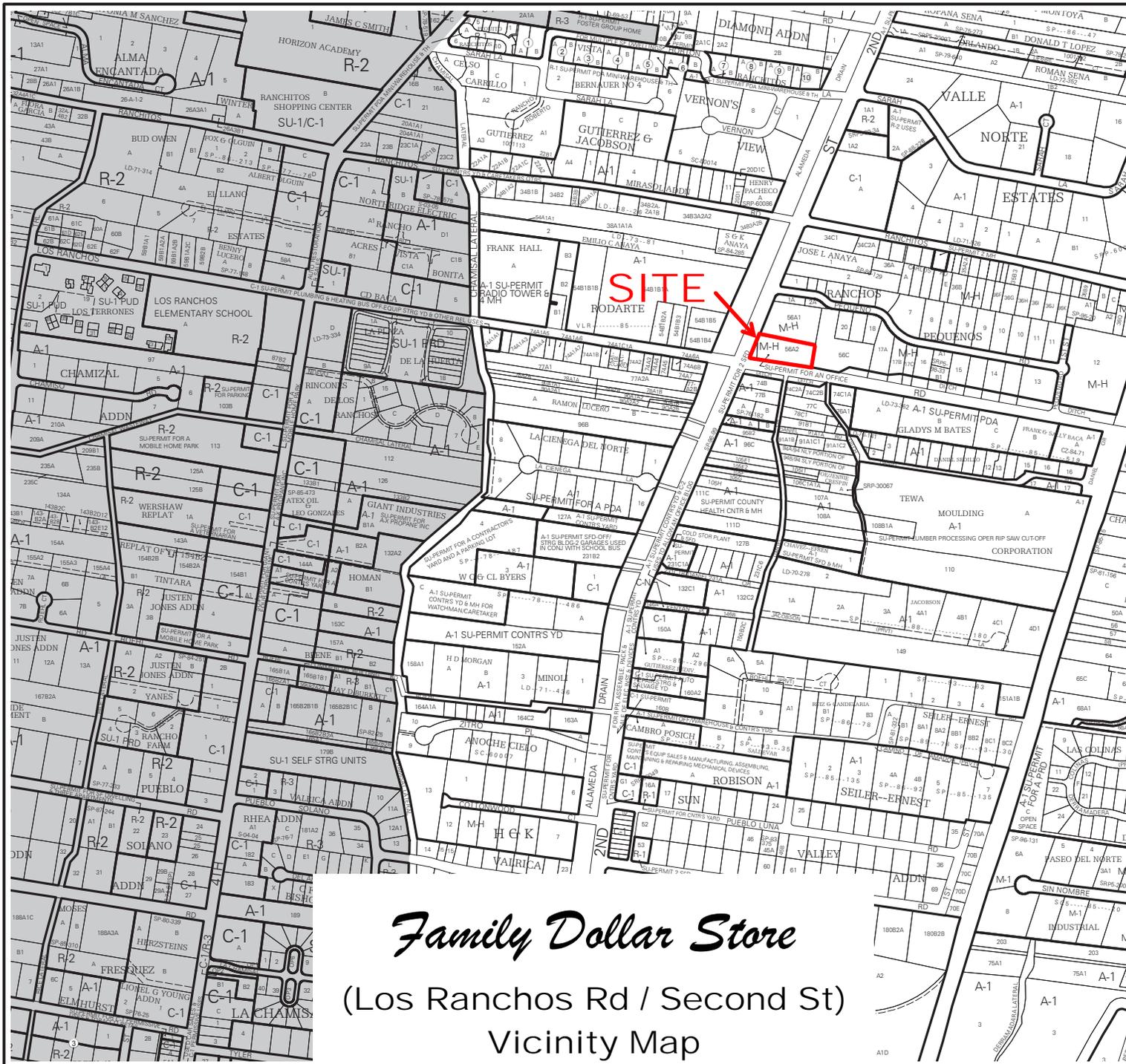
<u>SITE INFORMATION</u>	
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APPENDIX

Family Dollar Store

(Los Ranchos Rd / Second St)
Aerial Map





Family Dollar Store
 (Los Ranchos Rd / Second St)
 Vicinity Map



LEGAL DESCRIPTION
 T11N
 R3E
 SEC 21

UNIFORM PROPERTY CODE
 1-015-063



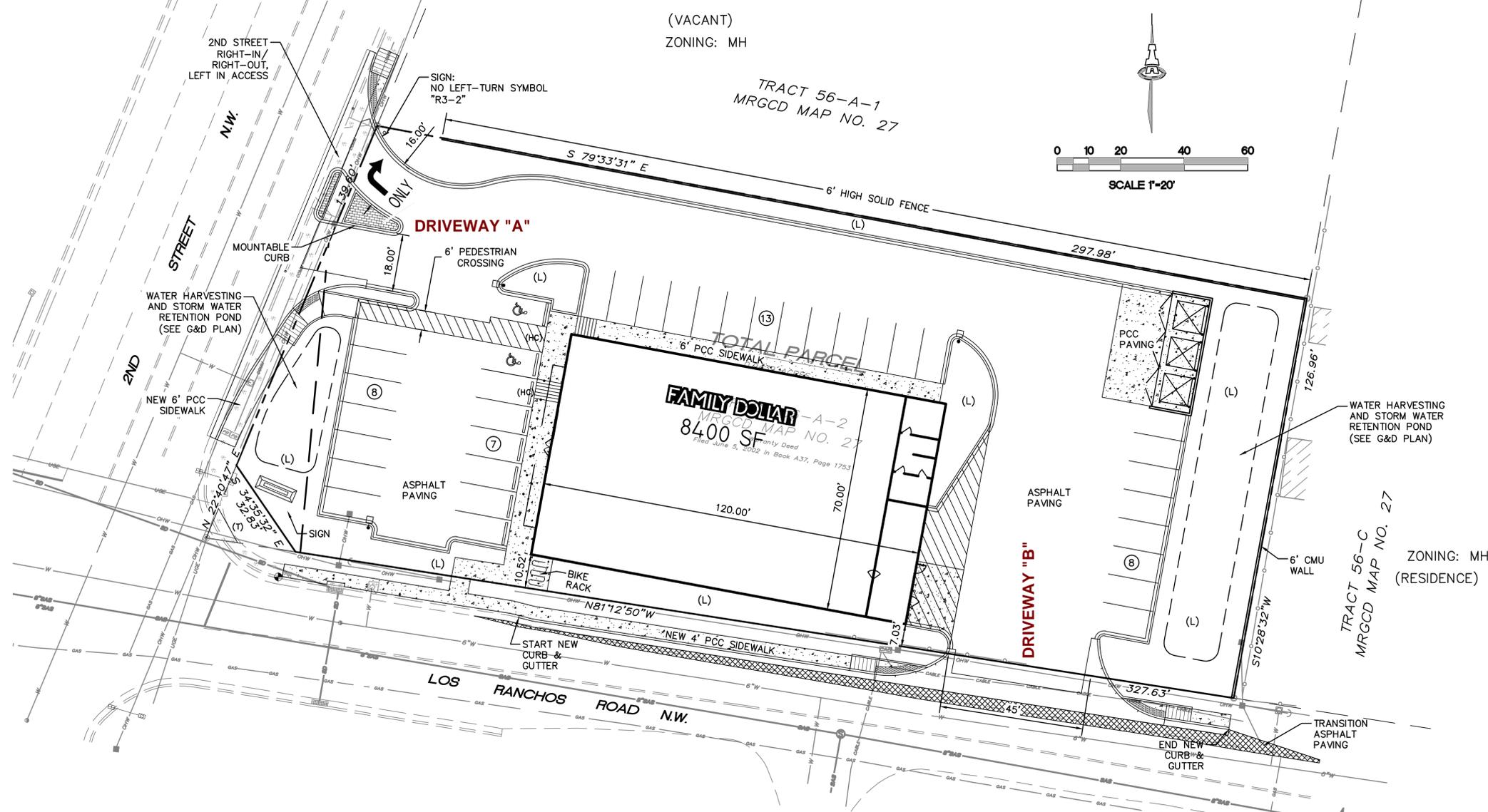
Map amended through July 2010



PUBLIC WORKS DIVISION
 GIS PROGRAM

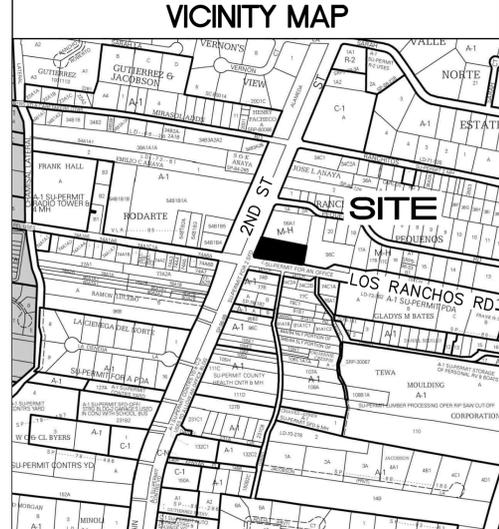
This information is for reference only. Bernalillo County assumes no liability for errors associated with the use of these data. Users are solely responsible for confirming data accuracy when necessary. Source data are from Bernalillo County and the City of Albuquerque. For current information visit www.berncov.gov.

D-15-Z



SITE PLAN

1"=20'



PROJECT DATA

PROJECT: FAMILY DOLLAR STORE
7900 2ND ST. NW
ALBUQUERQUE, NM

OWNER: THE HUTTON COMPANY
(UNDER EXCLUSIVE PURCHASE AGREEMENT)
736 CHERRY STREET
CHATTANOOGA, TN 37402
(423) 643-9202

ENGINEER: ISAACSON & ARFMAN, P.A.
128 MONROE ST NE
ALBUQUERQUE, NM 87108
(505) 268-8828

LANDSCAPE ARCHITECT: CONSENSUS PLANNING
302 8TH ST NW
ALBUQUERQUE, NM 87102
(505) 764-9801

SITE AREA: 0.9439 AC.

ZONING: EXISTING - SPECIAL USE "SPECIAL USE-LIMITED RETAIL"

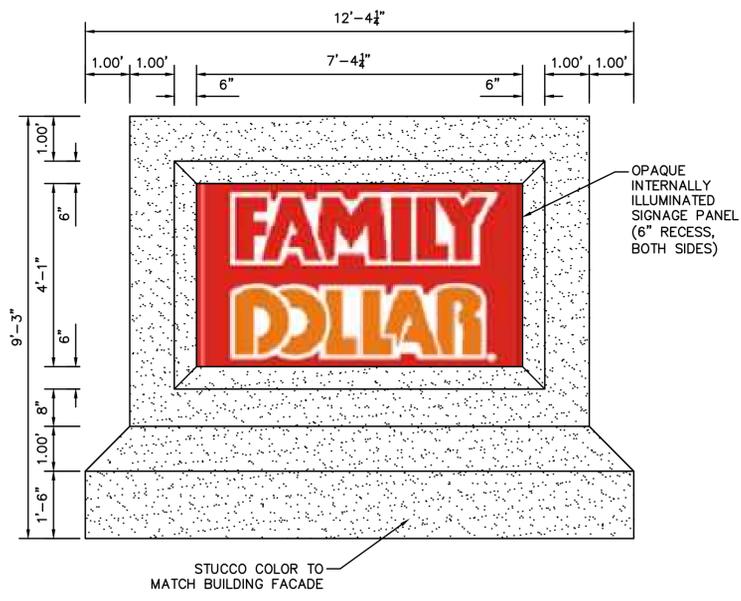
BUILDING AREA: 8,400 SF (70'x120')
TYPE II-N (NON-SPRINKLERED)

PARKING REQUIRED: 8,400 SF/200 = 42 SPACES

PARKING PROVIDED: 36 FULL SIZE (9'x18') SPACES
INCLUDES 2 HANDICAP SPACES

FDS TYPICAL PARKING REQUIREMENTS: LESS THAN 20 SPACES PER PARKING STUDY

LEGAL DESCRIPTION: TRACTS 56-A-2 AND 54-B-2, MRGCD MAP NO. 27



MONUMENT SIGN DETAIL

NTS

INDEX TO DRAWINGS

SHEET NO.	TITLE
SP-1	SITE PLAN FOR SPECIAL USE PERMIT
LS-1	LANDSCAPE PLAN
CG-1	CONCEPTUAL GRADING & DRAINAGE PLAN
CU-1	CONCEPTUAL UTILITY PLAN

NOTES

- ALL SITE LIGHTING FIXTURES WILL BE SHIELDED TO PREVENT FUGITIVE LIGHT TO CROSS PROPERTY LINES.
- THERE WILL BE A 6' HIGH BLOCK WALL ALONG THE EAST PROPERTY LINE AND A 6' SOLID FENCE OR BLOCK WALL ALONG THE NORTH PROPERTY LINE.
- A PORTION OF THE PROPOSED CURB & GUTTER, SIDEWALK, AND HANDICAP RAMPS ASSOCIATED WITH THE TAPER OFF OF 2ND ST ENCROACH ONTO THE SUBJECT PROPERTY.
- NORTH HALF OF LOS RANCHOS TO BE FULLY IMPROVED ALONG ENTIRE FRONTAGE PLUS 22:1 ASPHALT TRANSITION AT THE EAST TERMINUS OF THE NEW CURB & GUTTER.
- SIGNAGE SHALL COMPLY WITH THE SIGNAGE REQUIREMENTS LISTED UNDER SECTION 14.B.2.17 (C-1 ZONING, ON PREMISES SIGN), WITH ONE FREESTANDING SIGN (MONUMENT) WITH A MAXIMUM TOTAL SIGN FACE AREA OF 32 SQUARE FEET FOR THE SIGN.

LEGEND

- (13) NUMBER OF PARKING SPACES (TOTAL 36 SPCS)
- (L) LANDSCAPE AREAS (SEE LANDSCAPE PLAN)
- 20' POLE MOUNTED OVERHEAD LIGHT FIXTURE
- 4" WIDE PAINTED STRIPING (2' O.C.)
- 6" HIGH X 18" PCC BARRIER CURB (ONSITE)
- HANDICAP ACCESS RAMP
- EXISTING FIRE HYDRANT
- FAMILY DOLLAR SIGN
- HANDICAP PARKING SIGN
- HANDICAP PARKING SPACE
- NMDOT ROW TAKE (NOT IN PROPERTY)
- BIKE RACK

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.isacil.com

1931 C-701-SITE PLAN FOR SU.dwg Jan 22,2013

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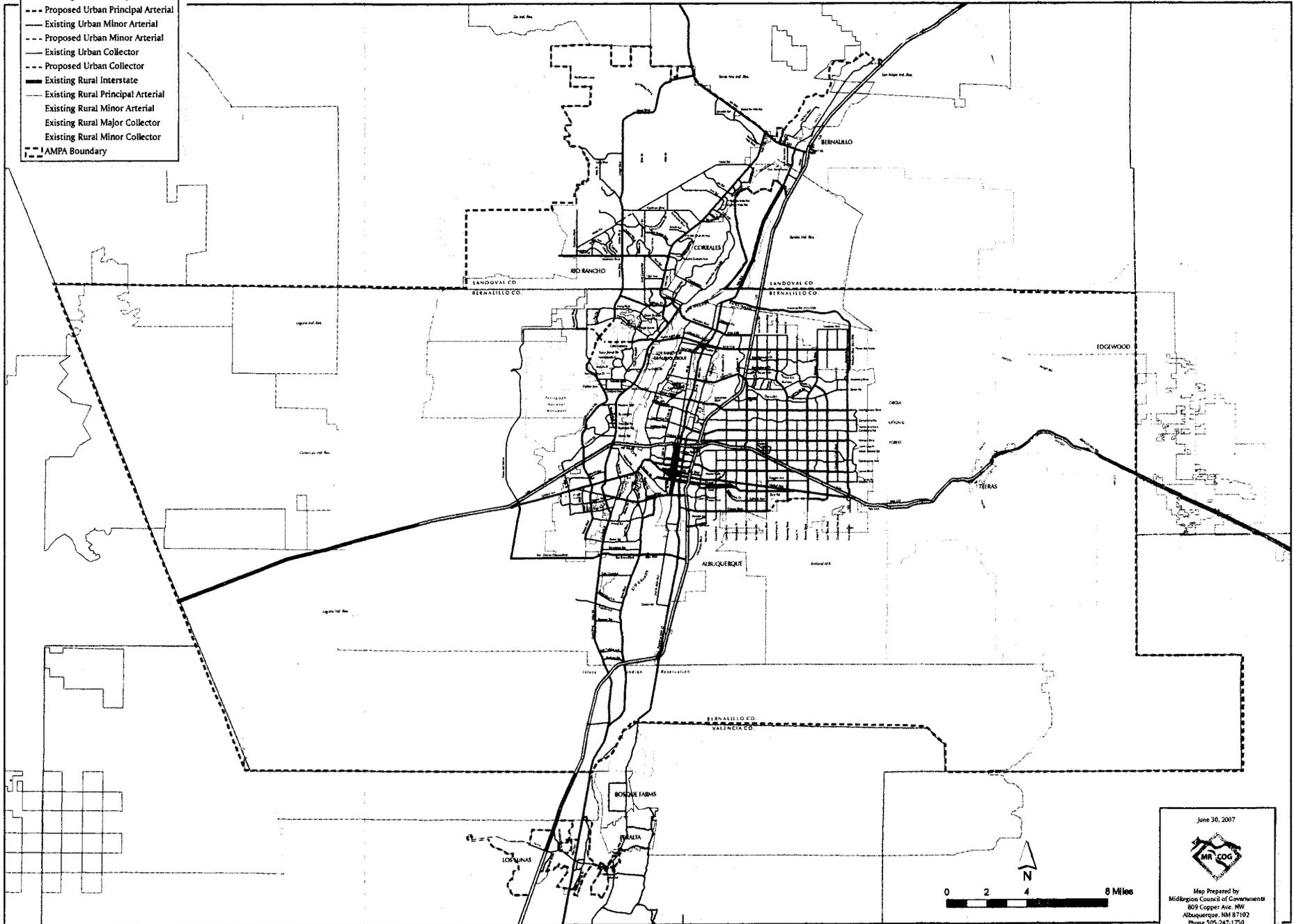
FAMILY DOLLAR STORE
2ND ST AND LOS RANCHOS RD
BERNALILLO COUNTY, NEW MEXICO
THE HUTTON COMPANY

SITE PLAN FOR SPECIAL USE PERMIT

Date:	No. Revisions	Date:	Job No.
Drawn By:			PAGE
Chk By:			SP-1

- Functional Classification**
- Existing Urban Interstate
 - Existing Urban Principal Arterial
 - - - Proposed Urban Principal Arterial
 - Existing Urban Minor Arterial
 - - - Proposed Urban Minor Arterial
 - Existing Urban Collector
 - - - Proposed Urban Collector
 - Existing Rural Interstate
 - Existing Rural Principal Arterial
 - Existing Rural Minor Arterial
 - Existing Rural Major Collector
 - Existing Rural Minor Collector
 - - - AMPA Boundary

Map reflects functional classification of roadways from the 2003 classification adopted by the Metropolitan Transportation Board and the 2003 classification by the New Mexico Dept. of Transportation.



June 30, 2007



Map Prepared by
MidRegion Council of Government
809 Copper Ave. NW
Albuquerque, NM 87102
Phone 505-247-1700
FAX 505-247-1753

Family Dollar Store (Los Ranchos Rd / Second St)

Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet						
	Units					
Shopping Center (820)	8.40	1,357	22	14	30	31
Subtotal		1,357	22	14	30	31
Pass-By Trips	25%		-6	-4	-8	-8
Total Primary Trips			16	10	22	23

Family Dollar Store (Los Ranchos Rd / Second St) Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		GROSS	ENTER	EXIT	ENTER

Units

Shopping Center (820)

8.40

1,000 S.F.

1,357	22	14	30	31
-------	----	----	----	----

NOTE: PM Peak
Hour trips have been
adjusted to reflect
local field data.

ITE Trip Generation Equations:

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

$$\text{Ln}(T) = 0.65 \text{ Ln}(X) + 5.83$$

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)

$$\text{Ln}(T) = 0.59 \text{ Ln}(X) + 2.32$$

61% Enter, 39% Exit

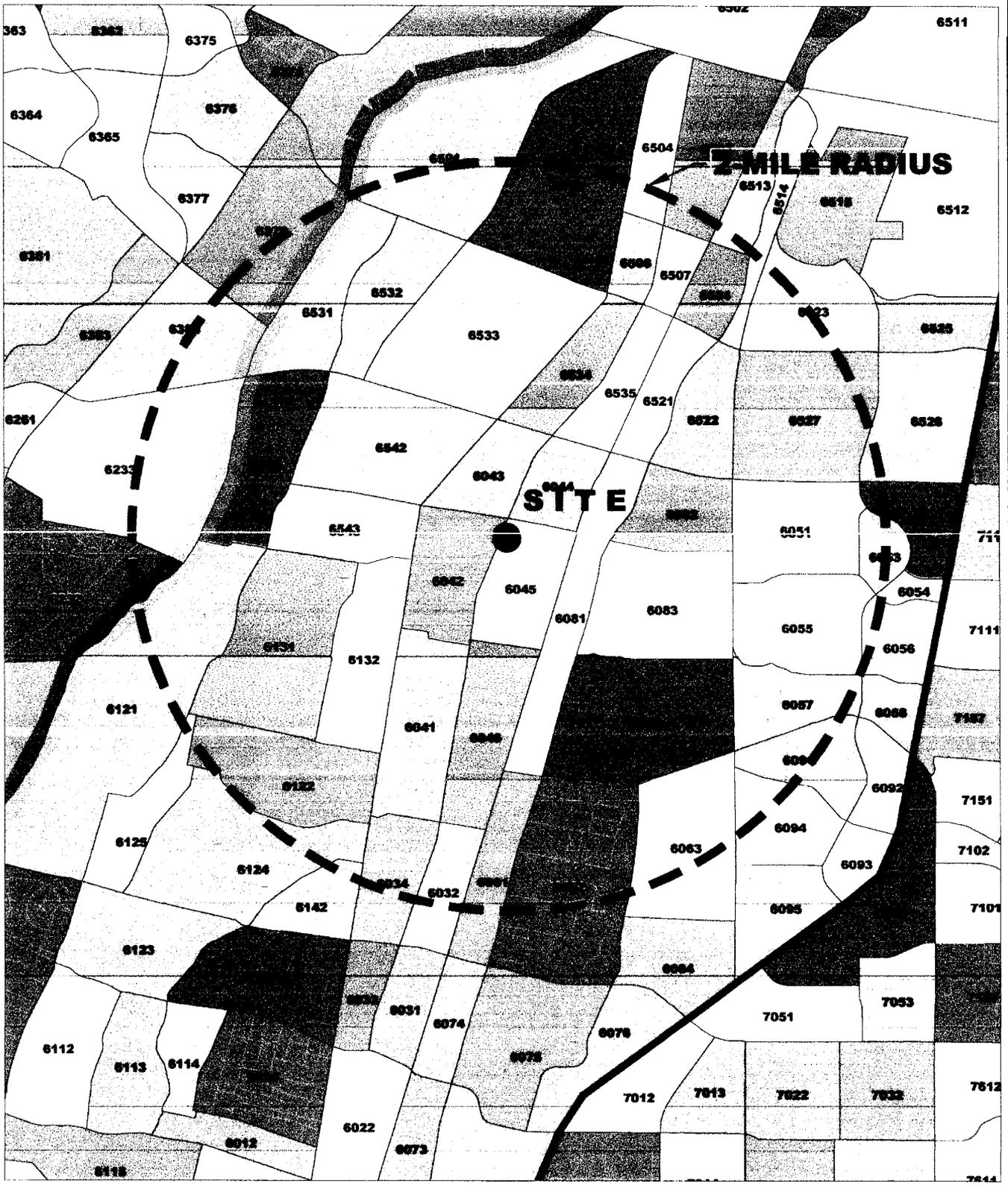
Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$\text{Ln}(T) = 0.67 \text{ Ln}(X) + 3.37$$

49% Enter, 51% Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP
Family Dollar Store (Los Ranchos / Second St)

Trip Distribution Table
Family Dollar Store (Los Ranchos Rd / 2nd St)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments
 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study						(SN) Second St North			(RE) Ranchitos Rd East			(LE) Los Ranchos Rd East		
		2015 Population	2025 Population	Interpolated Population for the Year 2015	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2015	2025	2015											
Boundary Specified on DASZ Map															
6032	60%	651	629	651	391	1.86%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6034	60%	449	479	449	289	1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6041	100%	1162	1155	1,162	1,162	5.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6042	100%	513	514	513	513	2.44%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6043	100%	923	1092	923	923	4.39%	50%	2.19%	462	0%	0.00%	0	0%	0.00%	0
6044	100%	213	296	213	213	1.01%	95%	0.96%	202	5%	0.05%	11	0%	0.00%	0
6045	100%	758	732	758	758	3.60%	0%	0.00%	0	10%	0.36%	76	70%	2.52%	531
6046	100%	638	620	638	638	3.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6051	100%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6052	10%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	55%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6055	100%	0	0	0	0	0.00%	50%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6056	10%	65	86	65	7	0.03%	50%	0.02%	4	0%	0.00%	0	0%	0.00%	0
6057	95%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6061	30%	399	386	399	120	0.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6062	60%	1318	1275	1,318	791	3.76%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6063	60%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6081	100%	355	341	355	355	1.69%	0%	0.00%	0	0%	0.00%	0	50%	0.84%	178
6082	100%	98	103	98	98	0.47%	10%	0.05%	10	90%	0.42%	88	0%	0.00%	0
6083	100%	2536	2454	2,536	2,536	12.06%	0%	0.00%	0	100%	12.05%	2,536	0%	0.00%	0
6084	100%	2488	2450	2,488	2,488	11.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6091	45%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6094	30%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6121	45%	737	723	737	332	1.58%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6122	95%	868	847	868	825	3.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6124	15%	833	804	833	125	0.59%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6125	5%	150	141	150	8	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6131	100%	610	595	610	610	2.90%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table Family Dollar Store (Los Ranchos Rd / 2nd St)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	Population		Interpolated Population for the Year 2015	Population in Study	Percent Population	(SN) Second St North			(RE) Ranchitos Rd East			(LE) Los Ranchos Rd East					
		2015	2025				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population			
		Boundary Specified on DASZ Map																
6132	100%	772	768	772	772	3.67%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6142	5%	550	621	550	28	0.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6232	5%	714	699	714	36	0.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6233	45%	968	1069	968	436	2.07%	100%	2.07%	436	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6378	35%	258	248	258	90	0.43%	50%	0.21%	45	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6384	45%	260	248	260	117	0.56%	100%	0.56%	117	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6501	35%	825	802	825	289	1.37%	50%	0.69%	145	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6503	10%	963	944	963	96	0.46%	100%	0.46%	96	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	15%	383	375	383	57	0.27%	50%	0.14%	29	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6505	55%	1222	1209	1,222	672	3.19%	50%	1.60%	336	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6506	100%	364	351	364	364	1.73%	50%	0.87%	182	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	64	60	64	64	0.30%	100%	0.30%	64	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6513	5%	172	176	172	9	0.04%	50%	0.02%	5	50%	0.02%	5	0%	0.00%	0	0%	0.00%	0
6514	40%	122	154	122	49	0.23%	50%	0.12%	25	50%	0.12%	25	0%	0.00%	0	0%	0.00%	0
6521	100%	182	175	182	182	0.87%	0%	0.00%	0	100%	0.87%	182	0%	0.00%	0	0%	0.00%	0
6522	100%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	45%	771	877	771	347	1.65%	50%	0.82%	174	50%	0.82%	174	0%	0.00%	0	0%	0.00%	0
6524	100%	253	247	253	253	1.20%	50%	0.60%	127	50%	0.60%	127	0%	0.00%	0	0%	0.00%	0
6526	5%	1261	0	1,261	63	0.30%	100%	0.30%	63	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6527	90%	2	0	2	2	0.01%	100%	0.01%	2	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6531	100%	122	122	122	122	0.58%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6532	100%	406	396	406	406	1.93%	50%	0.96%	203	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6533	100%	1348	1363	1,348	1,348	6.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6534	100%	342	331	342	342	1.63%	50%	0.81%	171	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6535	100%	449	445	449	449	2.13%	100%	2.13%	449	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6541	100%	166	159	166	166	0.79%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6542	100%	667	725	667	667	3.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6543	100%	451	533	451	451	2.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
					29,821	21,039	100.00%				3,343	3,222	708					
											15.89%	15.31%	3.37%					

Trip Distribution Table
Family Dollar Store (Los Ranchos Rd / 2nd St)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year 2015	Population in Study	Percent Population	(SC) Second St Central			(OE) Osuna Rd East			(SS) Second St South		
							% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2015	2025	2015											
Boundary Specified on DASZ Map															
6032	60%	651	629	651	391	1.86%	0%	0.00%	0	0%	0.00%	0	100%	1.86%	391
6034	60%	449	479	449	269	1.28%	0%	0.00%	0	0%	0.00%	0	100%	1.28%	269
6041	100%	1162	1155	1,162	1,162	5.52%	50%	2.76%	581	0%	0.00%	0	0%	0.00%	0
6042	100%	513	514	513	513	2.44%	40%	0.98%	205	0%	0.00%	0	0%	0.00%	0
6043	100%	923	1092	923	923	4.39%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6044	100%	213	296	213	213	1.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6045	100%	758	732	758	758	3.60%	20%	0.72%	152	0%	0.00%	0	0%	0.00%	0
6046	100%	638	620	638	638	3.03%	90%	2.73%	574	10%	0.30%	64	0%	0.00%	0
6051	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6052	10%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	55%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6055	100%	0	0	0	0	0.00%	0%	0.00%	0	50%	0.00%	0	0%	0.00%	0
6056	10%	65	86	65	7	0.03%	0%	0.00%	0	50%	0.02%	4	0%	0.00%	0
6057	95%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
6061	30%	399	386	399	120	0.57%	0%	0.00%	0	50%	0.29%	60	50%	0.29%	60
6062	60%	1318	1275	1,318	791	3.76%	0%	0.00%	0	50%	1.88%	396	50%	1.88%	396
6063	60%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
6081	100%	355	341	355	355	1.69%	0%	0.00%	0	50%	0.84%	178	0%	0.00%	0
6082	100%	98	103	98	98	0.47%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6083	100%	2536	2454	2,536	2,536	12.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6084	100%	2488	2450	2,488	2,488	11.83%	0%	0.00%	0	100%	11.83%	2,488	0%	0.00%	0
6091	45%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
6094	30%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
6121	45%	737	723	737	332	1.58%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6122	95%	868	847	868	825	3.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6124	15%	833	804	833	125	0.59%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6125	5%	150	141	150	8	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6131	100%	610	595	610	610	2.90%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table
Family Dollar Store (Los Ranchos Rd / 2nd St)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year 2015	Population in Study	Percent Population	(SC) Second St Central			(OE) Osuna Rd East			(SS) Second St South		
							% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map															
6132	100%	772	768	772	772	3.67%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6142	5%	550	621	550	28	0.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6232	5%	714	699	714	36	0.17%	0%	0.00%	0	0%	0.00%	0	100%	0.17%	36
6233	45%	968	1069	968	436	2.07%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6378	35%	258	248	258	90	0.43%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6384	45%	260	248	260	117	0.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6501	35%	825	802	825	289	1.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6503	10%	963	944	963	96	0.46%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	15%	383	375	383	57	0.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6505	55%	1222	1209	1,222	672	3.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6506	100%	364	351	364	364	1.73%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	64	60	64	64	0.30%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6513	5%	172	176	172	9	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6514	40%	122	154	122	49	0.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6521	100%	182	175	182	182	0.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6522	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	45%	771	877	771	347	1.65%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6524	100%	253	247	253	253	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6526	5%	1261	0	1,261	63	0.30%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6527	90%	2	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6531	100%	122	122	122	122	0.58%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6532	100%	406	396	406	406	1.93%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6533	100%	1348	1363	1,348	1,348	6.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6534	100%	342	331	342	342	1.63%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6535	100%	449	445	449	449	2.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6541	100%	166	159	166	166	0.79%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6542	100%	667	725	667	667	3.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6543	100%	451	533	451	451	2.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
									1,512			3,188			1,162
									7.19%			15.15%			5.47%

Trip Distribution Table
Family Dollar Store (Los Ranchos Rd / 2nd St)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	Population		Interpolated Population for the Year 2015	Population In Study	Percent Population	(OW) Osuna Rd West			(LW) Los Ranchos Rd West			(RW) Ranchitos Rd West		
		2015	2025				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map															
6032	60%	651	629	651	391	1.86%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6034	60%	449	479	449	269	1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6041	100%	1162	1155	1,162	1,162	5.52%	0%	0.00%	0	50%	2.76%	581	0%	0.00%	0
6042	100%	513	514	513	513	2.44%	0%	0.00%	0	50%	1.22%	257	10%	0.24%	51
6043	100%	923	1092	923	923	4.39%	0%	0.00%	0	0%	0.00%	0	50%	2.19%	462
6044	100%	213	296	213	213	1.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6045	100%	758	732	758	758	3.60%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6046	100%	638	620	638	638	3.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6051	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6052	10%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	55%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6055	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6056	10%	65	86	65	7	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6057	95%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6061	30%	399	386	399	120	0.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6062	60%	1318	1275	1,318	791	3.76%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6063	60%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6081	100%	355	341	355	355	1.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6082	100%	98	103	98	98	0.47%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6083	100%	2536	2454	2,536	2,536	12.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6084	100%	2488	2450	2,488	2,488	11.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6091	45%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6094	30%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6121	45%	737	723	737	332	1.58%	100%	1.58%	332	0%	0.00%	0	0%	0.00%	0
6122	95%	868	847	868	825	3.92%	100%	3.92%	825	0%	0.00%	0	0%	0.00%	0
6124	15%	833	804	833	125	0.59%	100%	0.59%	125	0%	0.00%	0	0%	0.00%	0
6125	5%	150	141	150	8	0.04%	100%	0.04%	8	0%	0.00%	0	0%	0.00%	0
6131	100%	610	595	610	610	2.90%	30%	0.87%	183	70%	2.03%	427	0%	0.00%	0

Trip Distribution Table
Family Dollar Store (Los Ranchos Rd / 2nd St)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	Population		Interpolated Population for the Year 2015	Population in Study	Percent Population	(OW) Osuna Rd West			(LW) Los Ranchos Rd West			(RW) Ranchitos Rd West		
		2015	2025				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map															
6132	100%	772	768	772	772	3.67%	30%	1.10%	232	70%	2.57%	540	0%	0.00%	0
6142	5%	550	621	550	28	0.13%	50%	0.07%	14	50%	0.07%	14	0%	0.00%	0
6232	5%	714	699	714	36	0.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6233	45%	968	1069	968	436	2.07%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6378	35%	258	248	258	90	0.43%	0%	0.00%	0	40%	0.17%	36	10%	0.04%	9
6384	45%	260	248	260	117	0.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6501	35%	825	802	825	289	1.37%	0%	0.00%	0	40%	0.55%	116	10%	0.14%	29
6503	10%	963	944	963	96	0.46%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	15%	383	375	383	57	0.27%	0%	0.00%	0	40%	0.11%	23	10%	0.03%	6
6505	55%	1222	1209	1,222	672	3.19%	0%	0.00%	0	40%	1.28%	269	10%	0.32%	67
6506	100%	364	351	364	364	1.73%	0%	0.00%	0	40%	0.69%	146	10%	0.17%	36
6507	100%	64	60	64	64	0.30%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6513	5%	172	176	172	9	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6514	40%	122	154	122	49	0.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6521	100%	182	175	182	182	0.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6522	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	45%	771	877	771	347	1.66%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6524	100%	253	247	253	253	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6526	5%	1261	0	1,261	63	0.30%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6527	90%	2	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6531	100%	122	122	122	122	0.58%	0%	0.00%	0	0%	0.00%	0	100%	0.58%	122
6532	100%	406	396	406	406	1.93%	0%	0.00%	0	0%	0.00%	0	50%	0.96%	203
6533	100%	1348	1363	1,348	1,348	6.41%	0%	0.00%	0	70%	4.49%	944	30%	1.92%	404
6534	100%	342	331	342	342	1.63%	0%	0.00%	0	40%	0.65%	137	10%	0.16%	34
6535	100%	449	445	449	449	2.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6541	100%	166	159	166	166	0.79%	0%	0.00%	0	30%	0.24%	50	70%	0.55%	116
6542	100%	667	725	667	667	3.17%	0%	0.00%	0	30%	0.95%	200	70%	2.22%	467
6543	100%	451	533	451	451	2.14%	0%	0.00%	0	40%	0.86%	180	60%	1.29%	271
				29,821	21,039	100.00%				1,719	3,918	2,277			
										8.17%	18.62%	10.82%			

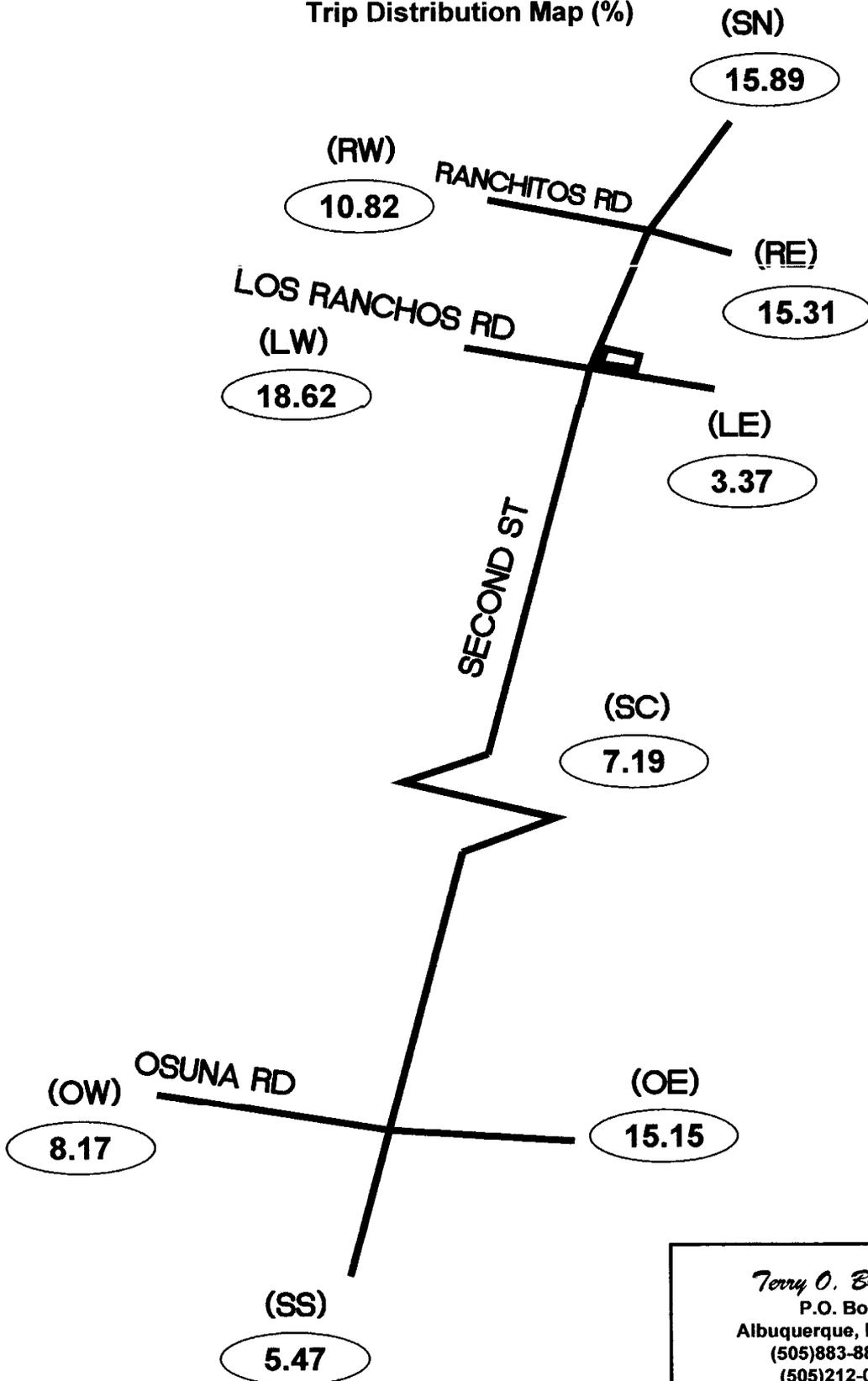
Family Dollar Store

(Los Ranchos Rd / Second St)

Trip Distribution Map (%)



NTS

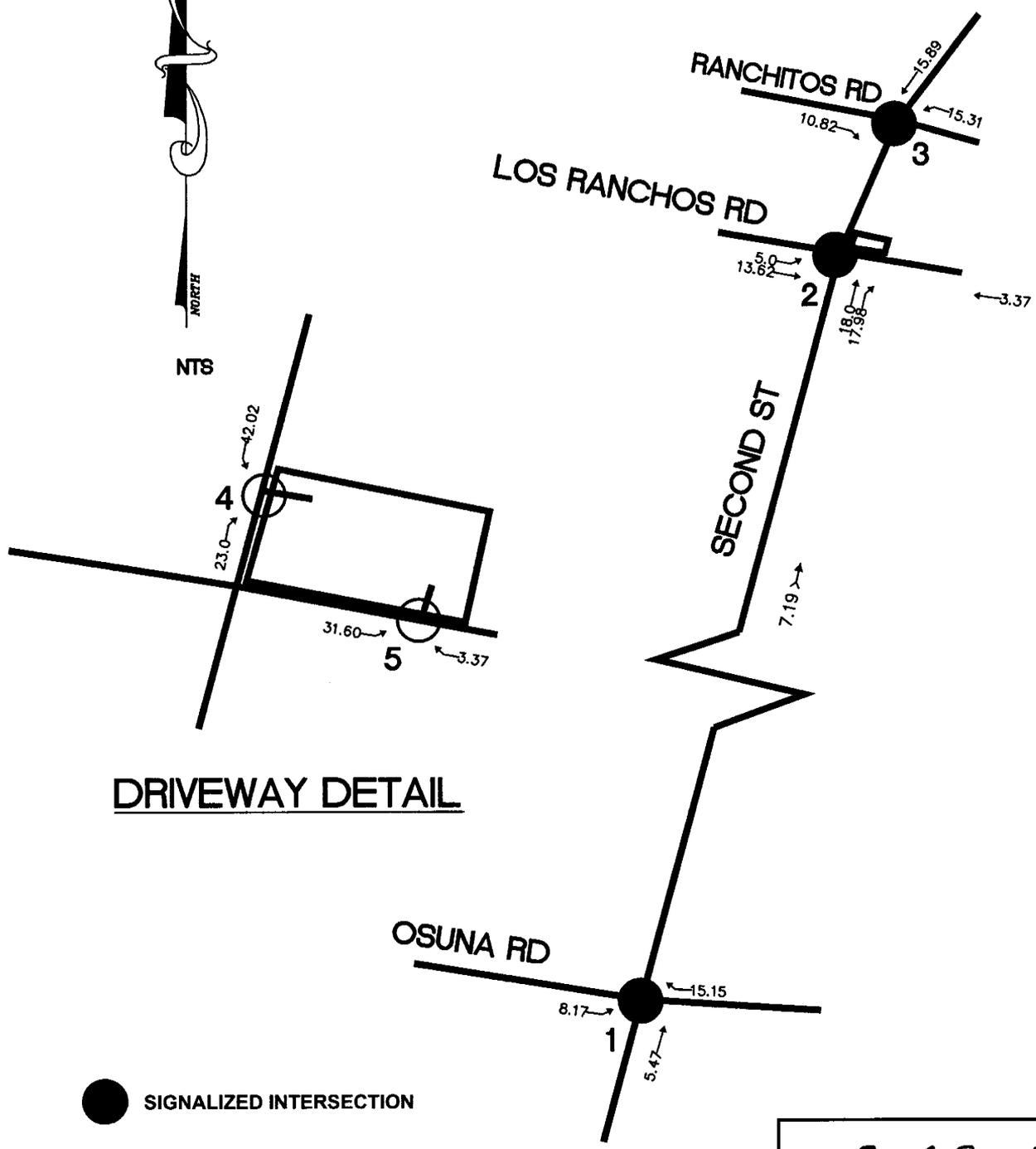


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Family Dollar Store
 (Los Ranchos Rd / Second St)
 Trip Assignments (% Entering)



NTS



DRIVEWAY DETAIL

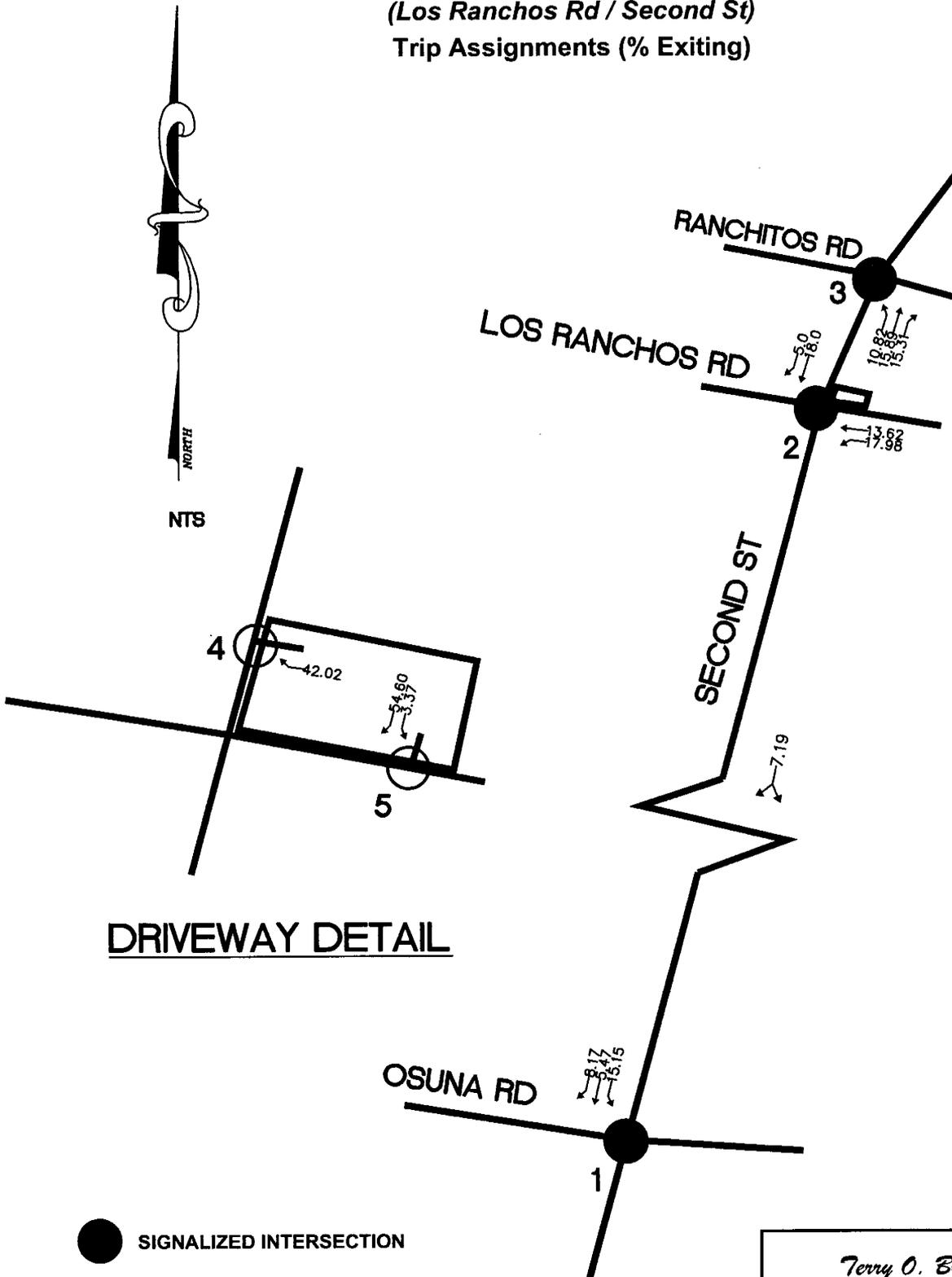
- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION

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Family Dollar Store

(Los Ranchos Rd / Second St)

Trip Assignments (% Exiting)



DRIVEWAY DETAIL

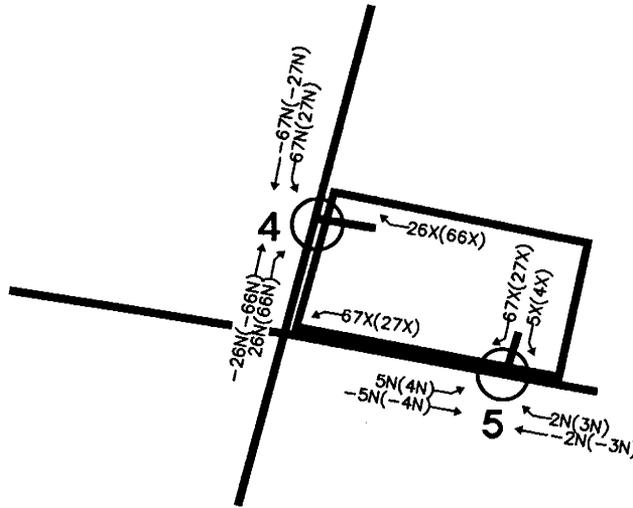
- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION

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Family Dollar Store
 (Los Ranchos Rd / Second St)
 Passby Trip Assignments - AM(PM)



NTS



DRIVEWAY DETAIL

-  SIGNALIZED INTERSECTION
-  UNSIGNALIZED INTERSECTION

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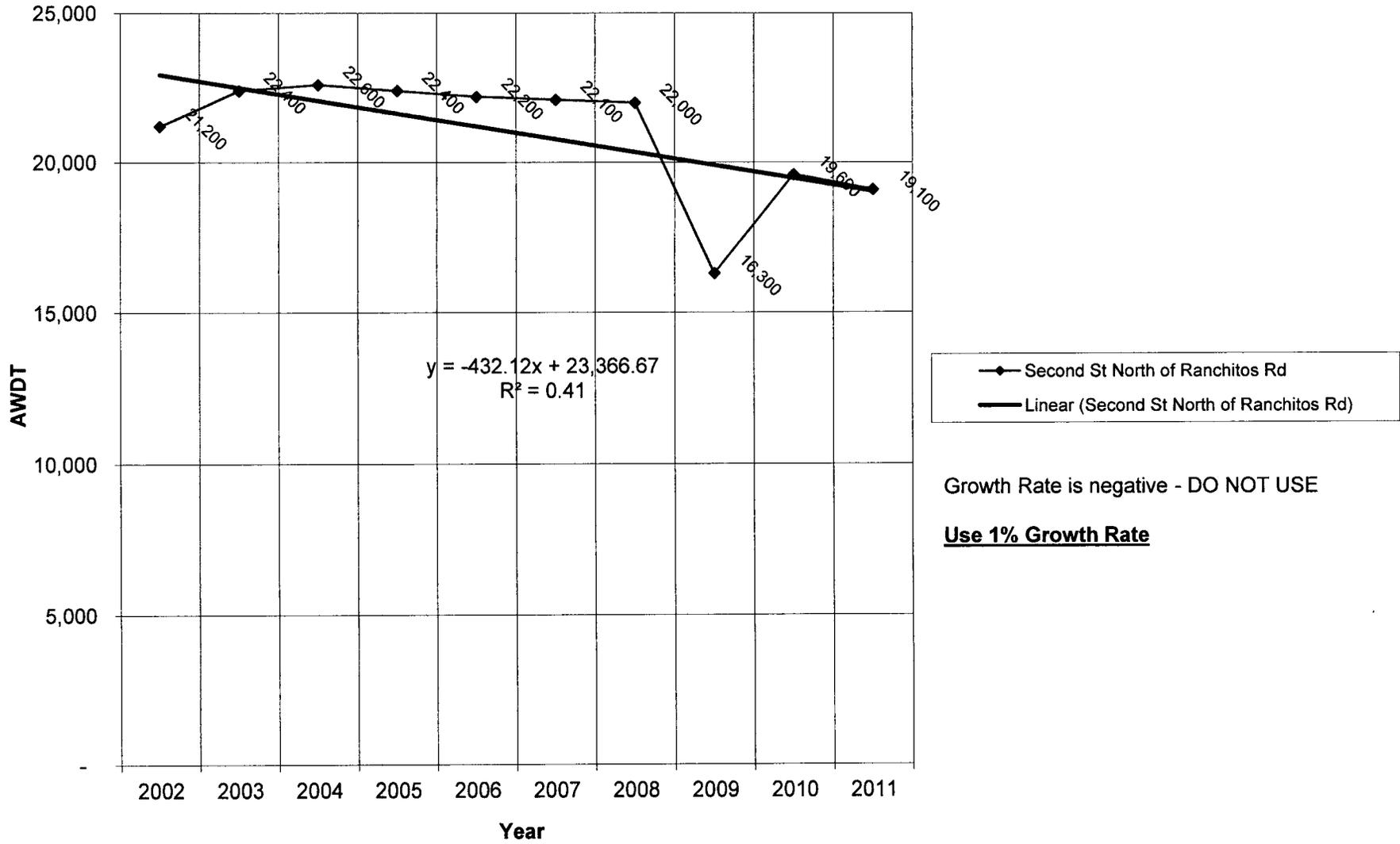


**Family Dollar Store (Los Ranchos Rd / Second St)
Historic Growth Rate Table**

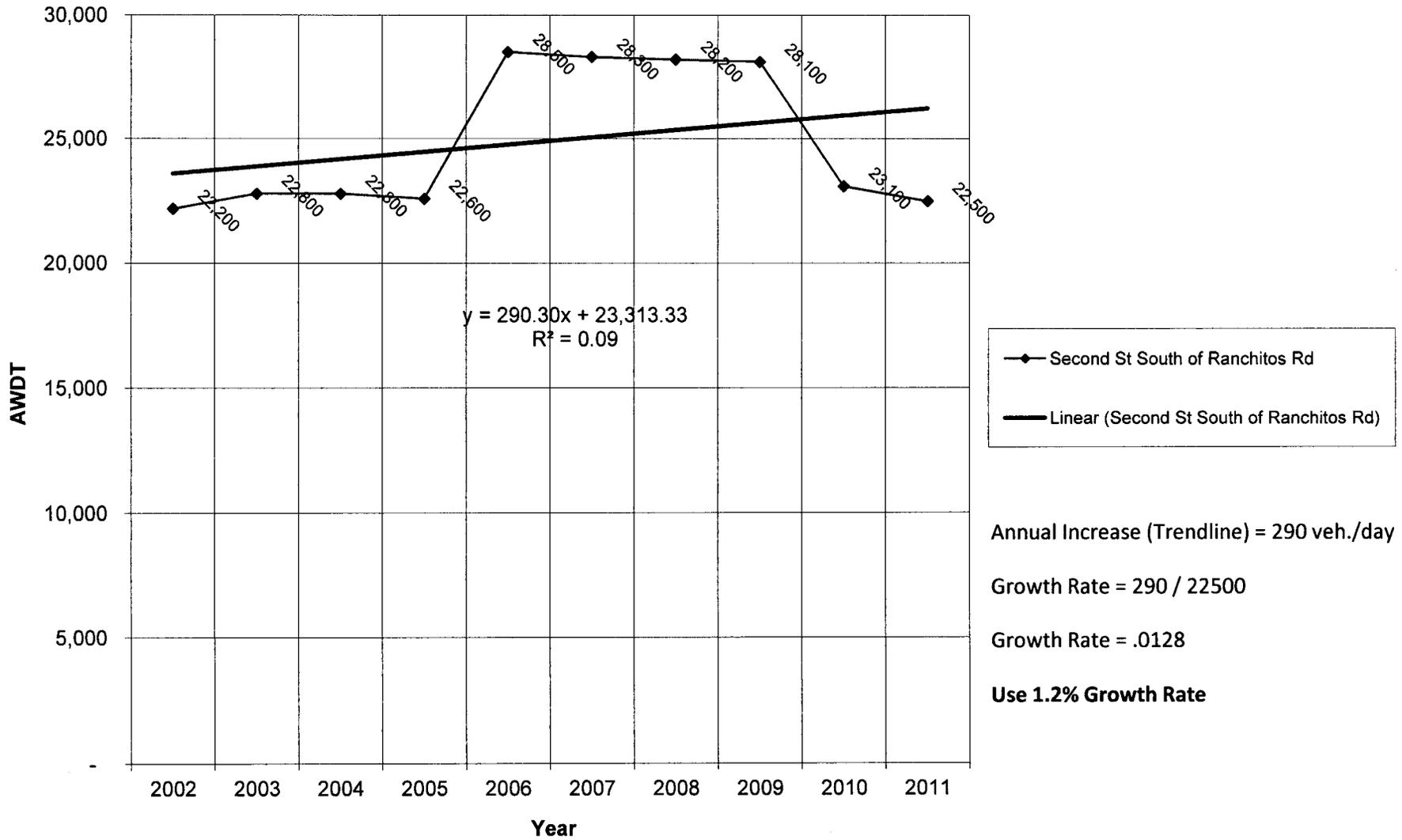
Traffic Flows from MRCOG Map

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Second St North of Ranchitos Rd	21,200	22,400	22,600	22,400	22,200	22,100	22,000	16,300	19,600	19,100
Second St South of Ranchitos Rd	22,200	22,800	22,800	22,600	28,500	28,300	28,200	28,100	23,100	22,500
Second St North of Osuna Rd	29,200	26,300	26,200	26,100	27,800	27,600	27,500	25,400	25,100	24,500
Osuna Rd East of Second St	17,900	19,100	19,100	19,000	21,900	21,700	21,700	17,800	17,600	17,200
Second St South of Osuna Rd	25,900	25,800	25,300	25,100	24,900	24,700	19,500	19,400	21,800	23,700
Osuna Rd West of Second St	12,900	13,700	13,700	13,600	13,500	13,400	11,500	11,500	11,300	10,900

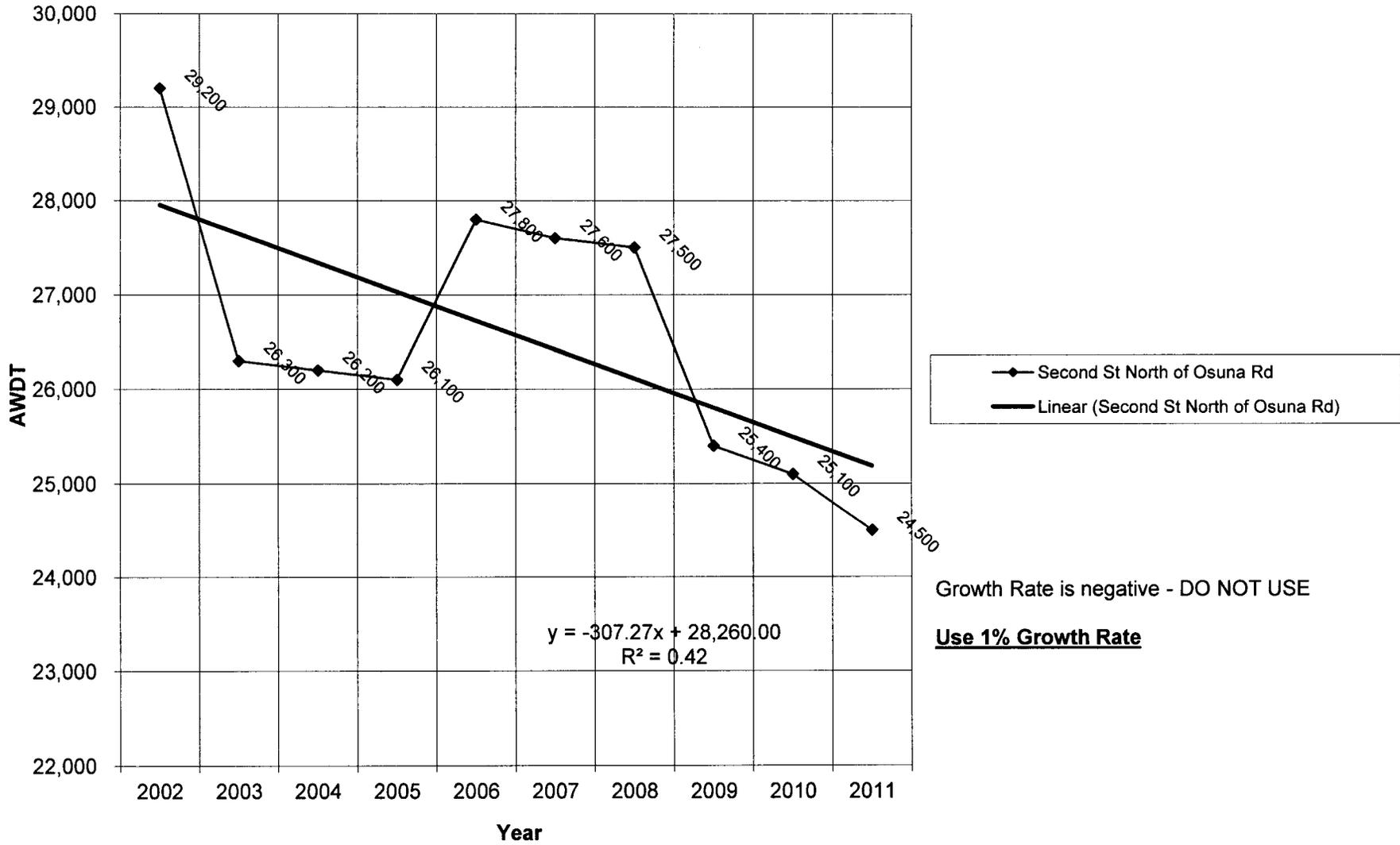
Historic Growth Chart Second St North of Ranchitos Rd (2002-2011)



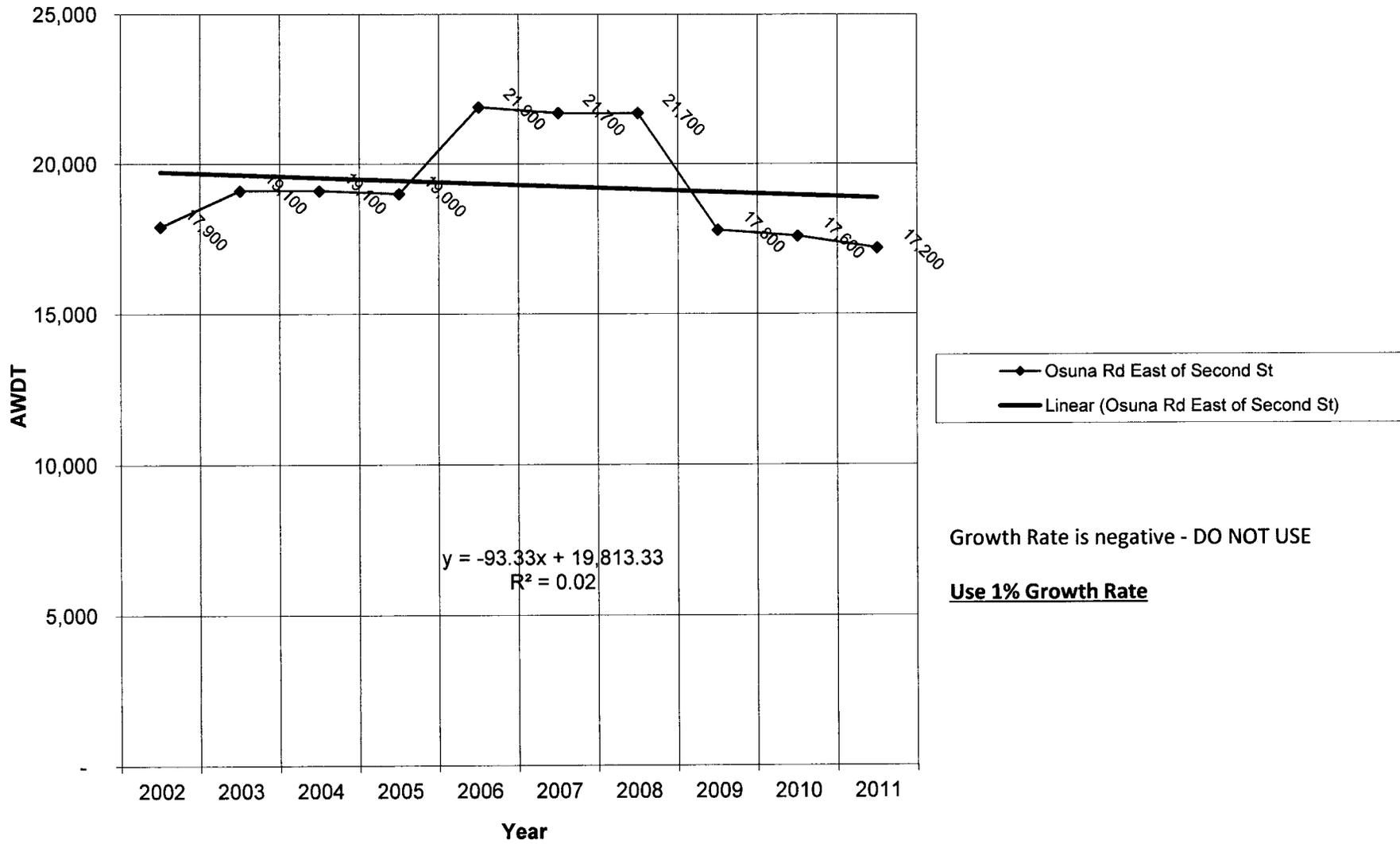
Historic Growth Chart Second St South of Ranchitos Rd (2002-2011)



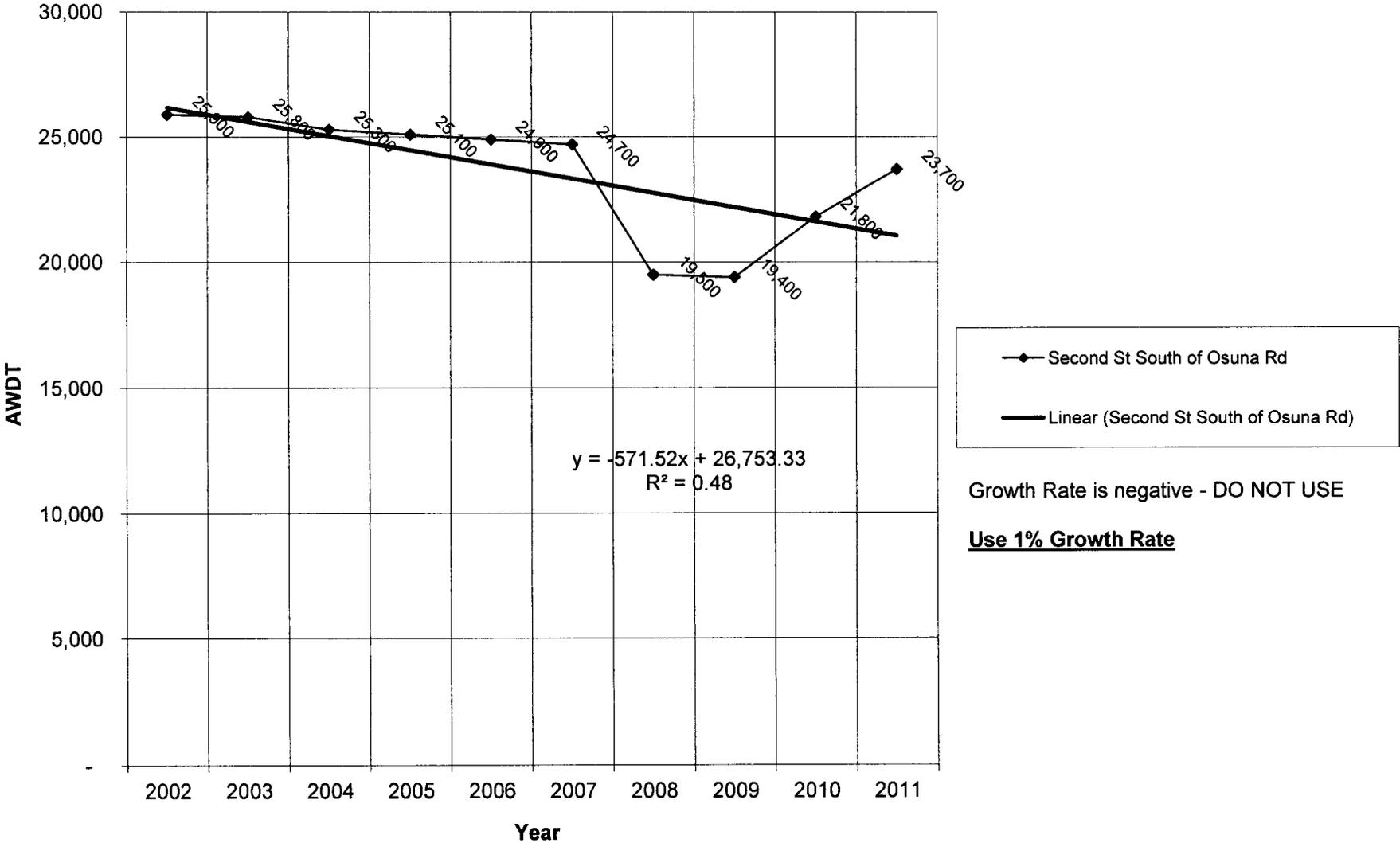
Historic Growth Chart Second St North of Osuna Rd (2002-2011)



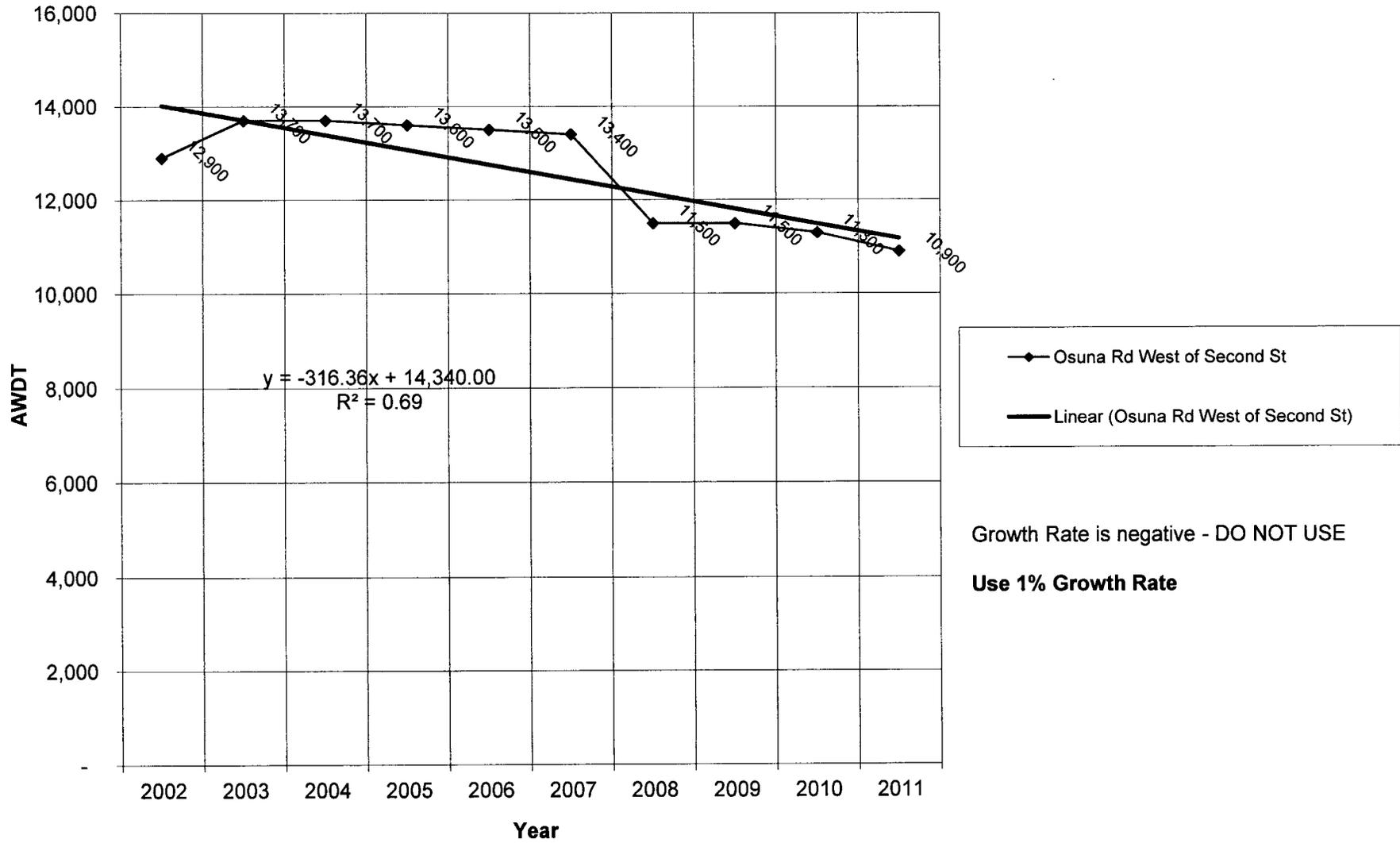
Historic Growth Chart Osuna Rd East of Second St (2002-2011)



Historic Growth Chart Second St South of Osuna Rd (2002-2011)



Historic Growth Chart Osuna Rd West of Second St (2002-2011)



Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2013) - 100% Development

INTERSECTION: Summary

Driveway "A" / Second St

(4) 5.0% Truck

0.85			0.85			0.88			0.88			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	616	0	0	1,641	0	
0	0	0	0	0	0	0	616	0	0	1,641	0	
0	0	0	0	0	7	0	614	7	13	1,637	0	

Existing (2013)
 2013 (NO BUILD - P.M.)
 2013 (BUILD - P.M.)

0.85			0.85			0.96			0.96			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	1,611	0	0	670	0	
0	0	0	0	0	0	0	1,611	0	0	670	0	
0	0	0	0	0	18	0	1,606	12	15	668	0	

Los Ranchos Rd / Driveway "B"

(5) 5.0% Truck

0.79			0.79			0.85			0.85			PHF
Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	109	0	0	44	0	0	0	0	0	0	0	
0	109	0	0	44	0	0	0	0	0	0	0	
7	109	0	3	44	1	0	0	0	0	0	8	

Existing (2013)
 2013 (NO BUILD - P.M.)
 2013 (BUILD - P.M.)

0.78			0.78			0.85			0.85			PHF
Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	64	0	0	82	0	0	0	0	0	0	0	
0	64	0	0	82	0	0	0	0	0	0	0	
9	64	0	0	82	1	0	0	0	1	0	17	

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Osuna Rd / Second St

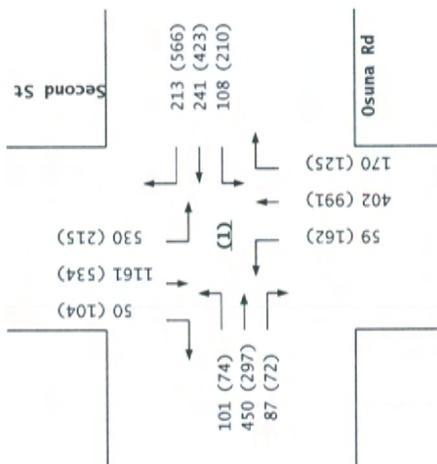
INTERSECTION : E-W Street: **Osuna Rd** (1)
 N-S Street: **Second St**
 Year of Existing Counts: **2012**
 Implementation Year: **2013**

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	98	446	86	107	239	208	58	397	168	523	1,149	49
Background Traffic Growth	1	4	1	1	2	2	1	4	2	5	11	0
Subtotal (NO BUILD - A.M.)	99	450	87	108	241	210	59	401	170	528	1,160	49
Percent Commercial Trips Generated(Entering)	8.17%	0.00%	0.00%	0.00%	0.00%	15.15%	0.00%	5.47%	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%	15.15%	5.47%	8.17%
Total Trips Generated	2	0	0	0	0	3	0	1	0	2	1	1
Total AM Peak Hour BUILD Volumes	101	450	87	108	241	213	59	402	170	530	1,161	50

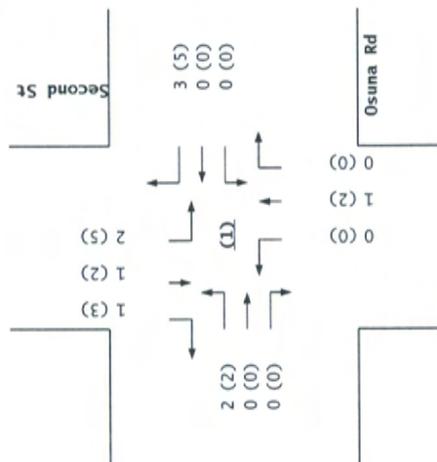
	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	71	294	71	208	419	555	160	979	124	208	527	100
Background Traffic Growth	1	3	1	2	4	6	2	10	1	2	5	1
Subtotal (NO BUILD - P.M.)	72	297	72	210	423	561	162	989	125	210	532	101
Percent Commercial Trips Generated(Entering)	8.17%	0.00%	0.00%	0.00%	0.00%	15.15%	0.00%	5.47%	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%	15.15%	5.47%	8.17%
Total Trips Generated	2	0	0	0	0	5	0	2	0	5	2	3
Total PM Peak Hour BUILD Volumes	74	297	72	210	423	566	162	991	125	215	534	104

	Entering	Exiting		
Number of Commercial Trips Generated	22	14	A.M.	100% Commercial Development
	30	31	P.M.	

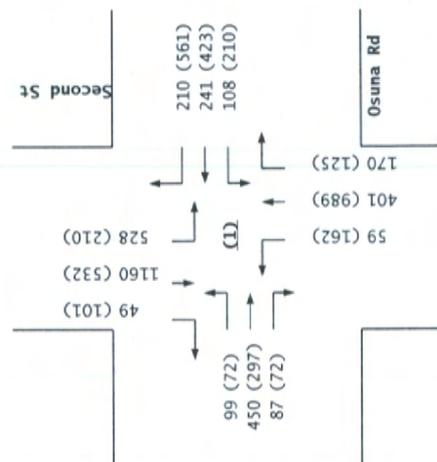
2013
BUILD



Trips



2013
NO BUILD



Osuna Rd / Second St

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Los Ranchos Rd / Second St

INTERSECTION : E-W Street: **Los Ranchos Rd** (2)
 N-S Street: **Second St**
 Year of Existing Counts: **2012**
 Implementation Year: **2013**

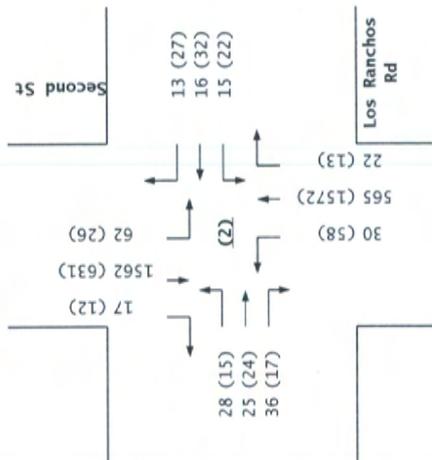
Growth Rates: 1.00% 1.00% 1.00% 1.00%

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	28	25	36	15	16	13	30	559	22	61	1,547	17
Background Traffic Growth	0	0	0	0	0	0	0	6	0	1	15	0
Subtotal (NO BUILD - A.M.)	28	25	36	15	16	13	30	565	22	62	1,562	17
Percent Commercial Trips Generated(Entering)	5.00%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	17.98%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	40.98%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	5.00%
Total Trips Generated	1	3	0	6	2	0	0	4	4	0	3	1
Total AM Peak Hour BUILD Volumes	29	28	36	21	18	13	30	569	26	62	1,565	18

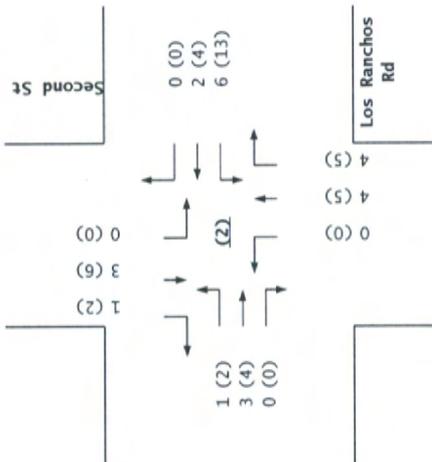
	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	15	24	17	22	32	27	57	1,556	13	26	625	12
Background Traffic Growth	0	0	0	0	0	0	1	16	0	0	6	0
Subtotal (NO BUILD - P.M.)	15	24	17	22	32	27	58	1,572	13	26	631	12
Percent Commercial Trips Generated(Entering)	5.00%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	17.98%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	40.98%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	5.00%
Total Trips Generated	2	4	0	13	4	0	0	5	5	0	6	2
Total PM Peak Hour BUILD Volumes	17	28	17	35	36	27	58	1,577	18	26	637	14

	Entering	Exiting		
Number of Commercial Trips Generated	22	14	A.M.	100% Commercial Development
	30	31	P.M.	

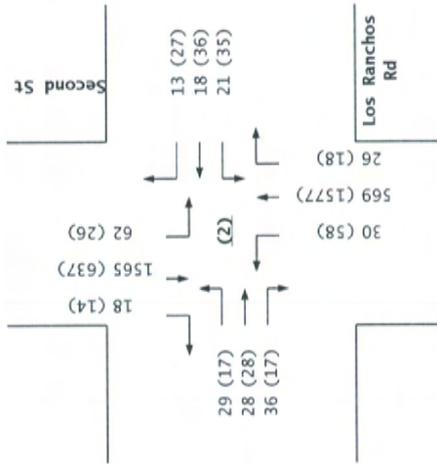
2013
NO BUILD



Trips



2013
BUILD



Los Ranchos Rd / Second St

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Ranchitos Rd / Second St

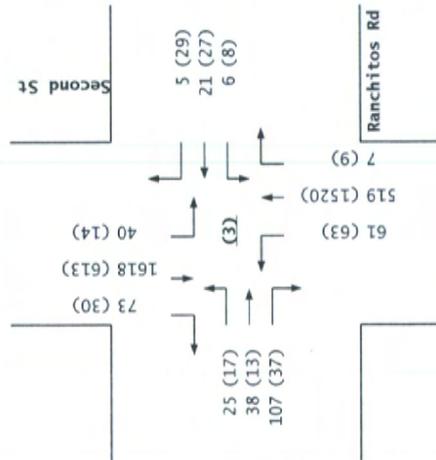
INTERSECTION : E-W Street: **Ranchitos Rd** (3)
 N-S Street: **Second St**
 Year of Existing Counts: **2012**
 Implementation Year: **2013**

	1.00%			1.00%			1.20%			1.00%		
	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	25	38	106	6	21	5	60	513	7	40	1,602	72
Background Traffic Growth	0	0	1	0	0	0	1	6	0	0	16	1
Subtotal (NO BUILD - A.M.)	25	38	107	6	21	5	61	519	7	40	1,618	73
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	10.82%	15.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.89%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.82%	15.89%	15.31%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	2	3	0	0	2	2	2	0	3	0
Total AM Peak Hour BUILD Volumes	25	38	109	9	21	5	63	521	9	40	1,621	73

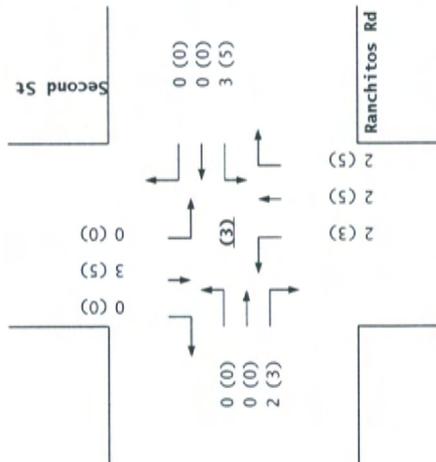
	1.00%			1.00%			1.20%			1.00%		
	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	17	13	37	8	27	29	62	1,502	9	14	607	30
Background Traffic Growth	0	0	0	0	0	0	1	18	0	0	6	0
Subtotal (NO BUILD - P.M.)	17	13	37	8	27	29	63	1,520	9	14	613	30
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	10.82%	15.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.89%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.82%	15.89%	15.31%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	3	5	0	0	3	5	5	0	5	0
Total PM Peak Hour BUILD Volumes	17	13	40	13	27	29	66	1,525	14	14	618	30

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	22	14		
	30	31	P.M.	

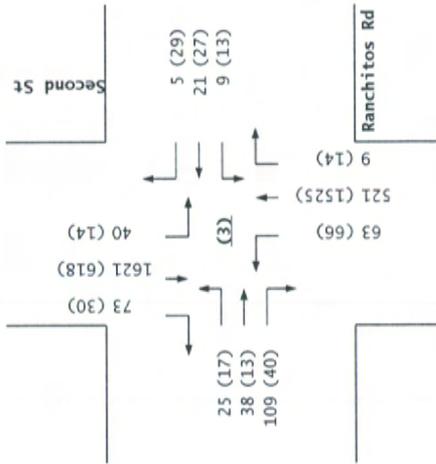
2013
NO BUILD



Trips



2013
BUILD



Ranchitos Rd / Second St

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Driveway "A" / Second St

INTERSECTION : E-W Street: **Driveway "A"** (4)
 N-S Street: **Second St**

Year of Existing Counts: 2012
 Implementation Year: 2013

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	610	0	0	1,625	0
Background Traffic Growth	0	0	0	0	0	0	0	6	0	0	16	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	616	0	0	1,641	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	42.02%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	42.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	6	0	0	5	9	0	0
Subtotal AM Pk Hr. BUILD Volumes	0	0	0	0	0	6	0	616	5	9	1,641	0
Pass-by Trip Adjustments	0	0	0	0	0	1	0	-2	2	4	-4	0
Total AM Peak Hour BUILD Volumes	0	0	0	0	0	7	0	614	7	13	1,637	0

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	1,595	0	0	663	0
Background Traffic Growth	0	0	0	0	0	0	0	16	0	0	7	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	1,611	0	0	670	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	42.02%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	42.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	13	0	0	7	13	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	0	0	13	0	1,611	7	13	670	0
Pass-by Trip Adjustments	0	0	0	0	0	5	0	-5	5	2	-2	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	0	18	0	1,606	12	15	668	0

Number of Commercial Trips Generated: Entering 22, Exiting 30, 14 A.M., 31 P.M., 100% Commercial Development

Pass-by Trip Calculations:												
AM Pass-by Trips												
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-26.00%	26.00%	67.00%	-67.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	-2	2	4	-4	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	26.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	1	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	1	0	-2	2	4	-4	0
PM Pass-by Trips												
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-66.00%	66.00%	27.00%	-27.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	-5	5	2	-2	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	66.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	5	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	5	0	-5	5	2	-2	0
Pass-by Trips	Entering		Exiting									
	6		4 AM									
	8		8 PM									

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Los Ranchos Rd / Driveway "B"

INTERSECTION : E-W Street: Los Ranchos Rd (5)
 N-S Street: Driveway "B"

Year of Existing Counts: 2012
 Implementation Year: 2013

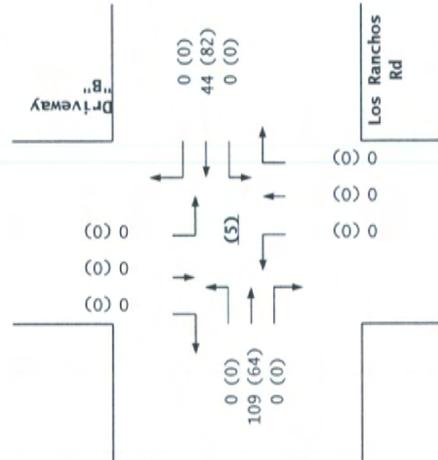
	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	108	0	0	44	0	0	0	0	0	0	0
Background Traffic Growth	0	1	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	109	0	0	44	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	31.60%	0.00%	0.00%	0.00%	0.00%	3.37%	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%	0.00%	0.00%	0.00%	3.37%	0.00%	54.60%
Total Trips Generated	7	0	0	0	0	1	0	0	0	0	0	8
Subtotal AM Pk Hr. BUILD Volumes	7	109	0	0	44	1	0	0	0	0	0	8
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	3
Total AM Peak Hour BUILD Volumes	7	109	0	0	44	1	0	0	0	0	0	11

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	63	0	0	81	0	0	0	0	0	0	0
Background Traffic Growth	0	1	0	0	1	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	64	0	0	82	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	31.60%	0.00%	0.00%	0.00%	0.00%	3.37%	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%	0.00%	0.00%	0.00%	3.37%	0.00%	54.60%
Total Trips Generated	9	0	0	0	0	1	0	0	0	1	0	17
Subtotal PM Pk Hr. BUILD Volumes	9	64	0	0	82	1	0	0	0	1	0	17
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	2
Total PM Peak Hour BUILD Volumes	9	64	0	0	82	1	0	0	0	1	0	19

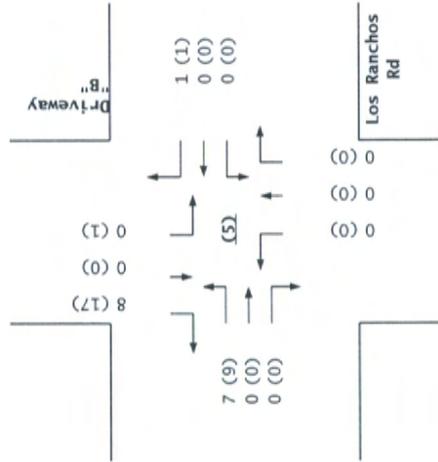
Number of Commercial Trips Generated: Entering 22, Exiting 14 A.M., 30, 31 P.M. 100% Commercial Development

Pass-by Trip Calculations:												
AM Pass-by Trips												
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
Percent Entering	5.00%	-5.00%	0.00%	0.00%	-2.00%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	67.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	3
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	3
PM Pass-by Trips												
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
Percent Entering	4.00%	-4.00%	0.00%	0.00%	-3.00%	3.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	27.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	2
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	2
Pass-by Trips	Entering 6		Exiting 4 AM		Entering 8		Exiting 8 PM					

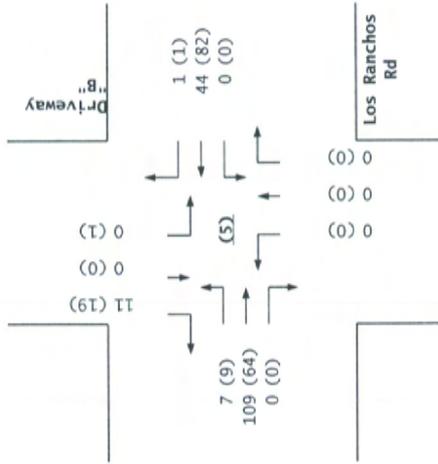
2013
NO BUILD



Trips



2013
BUILD



Los Ranchos Rd / Driveway "B"

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2023) - 100% Development

INTERSECTION: Summary

Osuna Rd / Second St 0.88 0.88 0.93 0.90 PHF

(1) 5.0% Truck

	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2013)	99	450	87	108	241	210	59	401	170	528	1,160	49
2023 (NO BUILD - A.M.)	109	495	95	119	265	231	64	441	186	581	1,275	54
2023 (BUILD - A.M.)	111	495	95	119	265	234	64	442	186	583	1,276	55

0.81 0.95 0.90 0.90 PHF

	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2013)	72	297	72	210	423	561	162	989	125	210	532	101
2023 (NO BUILD - P.M.)	79	326	79	231	465	616	178	1,087	138	231	585	111
2023 (BUILD - P.M.)	81	326	79	231	465	621	178	1,089	138	236	587	114

Los Ranchos Rd / Second St 0.80 0.79 0.88 0.88 PHF

(2) 5.0% Truck

	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2013)	28	25	36	15	16	13	30	565	22	62	1,562	17
2023 (NO BUILD - A.M.)	31	28	40	17	18	14	33	620	24	68	1,717	19
2023 (BUILD - A.M.)	32	31	40	23	20	14	33	624	28	68	1,720	20

0.78 0.78 0.92 0.96 PHF

	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2013)	15	24	17	22	32	27	58	1,572	13	26	631	12
2023 (NO BUILD - P.M.)	17	27	19	24	36	30	63	1,727	14	29	694	13
2023 (BUILD - P.M.)	19	31	19	37	40	30	63	1,732	19	29	700	15

Ranchitos Rd / Second St 0.80 0.75 0.85 0.92 PHF

(3) 5.0% Truck

	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2013)	25	38	107	6	21	5	61	519	7	40	1,618	73
2023 (NO BUILD - A.M.)	28	42	118	7	23	6	68	581	8	44	1,778	80
2023 (BUILD - A.M.)	28	42	120	10	23	6	70	583	10	44	1,781	80

0.75 0.75 0.86 0.90 PHF

	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2013)	17	13	37	8	27	29	63	1,520	9	14	613	30
2023 (NO BUILD - P.M.)	19	14	41	9	30	32	70	1,700	10	16	674	33
2023 (BUILD - P.M.)	19	14	44	14	30	32	73	1,705	15	16	679	33

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2023) - 100% Development

INTERSECTION: Summary

Driveway "A" / Second St

		0.85			0.85			0.88			0.88			PHF
		Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
(4)	5.0% Truck													
Existing (2013)		0	0	0	0	0	0	0	616	0	0	1,641	0	
2023 (NO BUILD - A.M.)		0	0	0	0	0	0	0	677	0	0	1,804	0	
2023 (BUILD - A.M.)		0	0	0	0	0	7	0	675	7	13	1,800	0	
		0.85			0.85			0.96			0.96			PHF
		Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2013)		0	0	0	0	0	0	0	1,611	0	0	670	0	
2023 (NO BUILD - P.M.)		0	0	0	0	0	0	0	1,770	0	0	736	0	
2023 (BUILD - P.M.)		0	0	0	0	0	18	0	1,765	12	15	734	0	

Los Ranchos Rd / Driveway "B"

		0.79			0.79			0.85			0.85			PHF
		Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
(5)	5.0% Truck													
Existing (2013)		0	109	0	0	44	0	0	0	0	0	0	0	
2023 (NO BUILD - A.M.)		0	120	0	0	49	0	0	0	0	0	0	0	
2023 (BUILD - A.M.)		7	120	0	0	49	1	0	0	0	0	0	8	
		0.78			0.78			0.85			0.85			PHF
		Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2013)		0	64	0	0	82	0	0	0	0	0	0	0	
2023 (NO BUILD - P.M.)		0	70	0	0	90	0	0	0	0	0	0	0	
2023 (BUILD - P.M.)		9	70	0	0	90	1	0	0	0	1	0	17	

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Osuna Rd / Second St

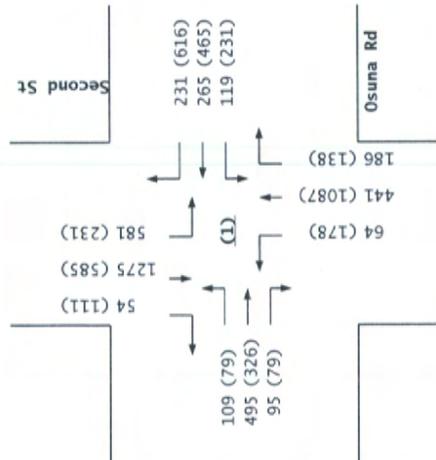
INTERSECTION : E-W Street: **Osuna Rd** (1)
 N-S Street: **Second St**
 Year of Existing Counts: **2012**
 Horizon Year: **2023**
 Growth Rates: **1.00%** **1.00%** **1.00%** **1.00%**

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	98	446	86	107	239	208	58	397	168	523	1,149	49
Background Traffic Growth	11	49	9	12	26	23	6	44	18	58	126	5
Subtotal (NO BUILD - A.M.)	109	495	95	119	265	231	64	441	186	581	1,275	54
Percent Commercial Trips Generated(Entering)	8.17%	0.00%	0.00%	0.00%	0.00%	15.15%	0.00%	5.47%	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%	15.15%	5.47%	8.17%
Total Trips Generated	2	0	0	0	0	3	0	1	0	2	1	1
Total AM Peak Hour BUILD Volumes	111	495	95	119	265	234	64	442	186	583	1,276	55

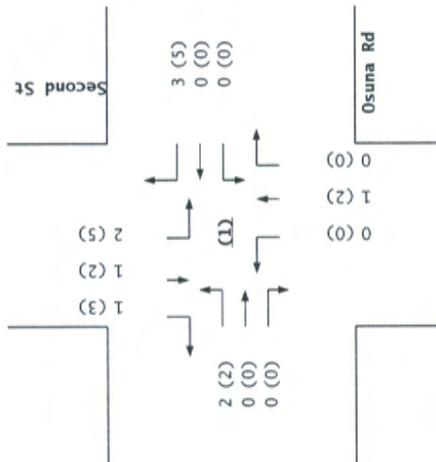
	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	71	294	71	208	419	555	160	979	124	208	527	100
Background Traffic Growth	8	32	8	23	46	61	18	108	14	23	58	11
Subtotal (NO BUILD - P.M.)	79	326	79	231	465	616	178	1,087	138	231	585	111
Percent Commercial Trips Generated(Entering)	8.17%	0.00%	0.00%	0.00%	0.00%	15.15%	0.00%	5.47%	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%	15.15%	5.47%	8.17%
Total Trips Generated	2	0	0	0	0	5	0	2	0	5	2	3
Total PM Peak Hour BUILD Volumes	81	326	79	231	465	621	178	1,089	138	236	587	114

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	22	14		
	30	31	P.M.	

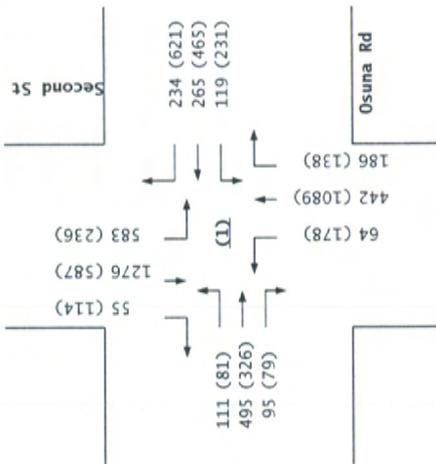
2023
NO BUILD



Trips



2023
BUILD



Osuna Rd / Second St

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Los Ranchos Rd / Second St

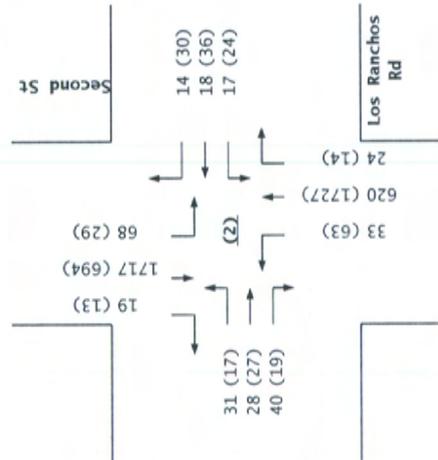
INTERSECTION : E-W Street: **Los Ranchos Rd** (2)
 N-S Street: **Second St**
 Year of Existing Counts: **2012**
 Horizon Year: **2023**

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	28	25	36	15	16	13	30	559	22	61	1,547	17
Background Traffic Growth	3	3	4	2	2	1	3	61	2	7	170	2
Subtotal (NO BUILD - A.M.)	31	28	40	17	18	14	33	620	24	68	1,717	19
Percent Commercial Trips Generated(Entering)	5.00%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	17.98%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	40.98%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	5.00%
Total Trips Generated	1	3	0	6	2	0	0	4	4	0	3	1
Total AM Peak Hour BUILD Volumes	32	31	40	23	20	14	33	624	28	68	1,720	20

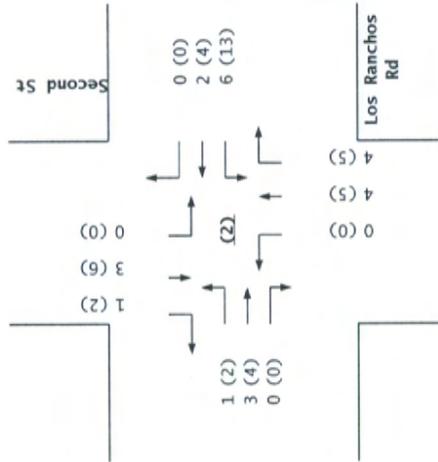
	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	15	24	17	22	32	27	57	1,556	13	26	625	12
Background Traffic Growth	2	3	2	2	4	3	6	171	1	3	69	1
Subtotal (NO BUILD - P.M.)	17	27	19	24	36	30	63	1,727	14	29	694	13
Percent Commercial Trips Generated(Entering)	5.00%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	17.98%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	40.98%	13.62%	0.00%	0.00%	0.00%	0.00%	0.00%	18.00%	5.00%
Total Trips Generated	2	4	0	13	4	0	0	5	5	0	6	2
Total PM Peak Hour BUILD Volumes	19	31	19	37	40	30	63	1,732	19	29	700	15

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	22	14		
	30	31	P.M.	

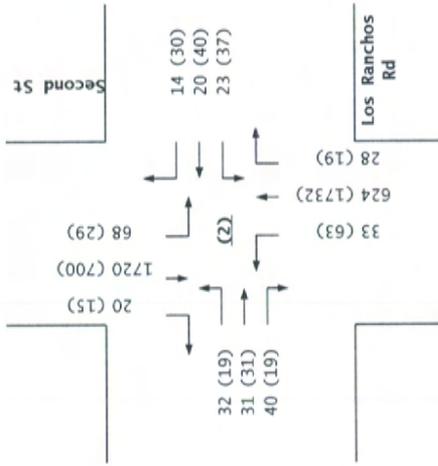
2023
NO BUILD



Trips



2023
BUILD



Los Ranchos Rd / Second St

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Ranchitos Rd / Second St

INTERSECTION : E-W Street: **Ranchitos Rd** (3)
 N-S Street: **Second St**
 Year of Existing Counts 2012
 Horizon Year 2023

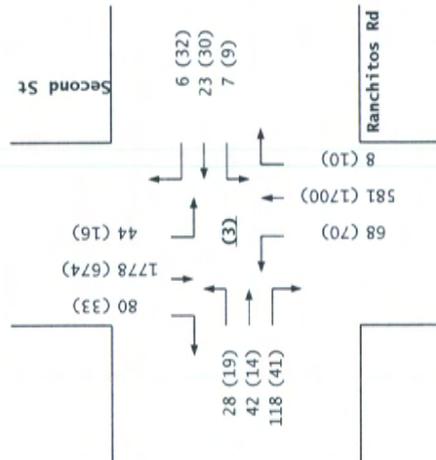
Growth Rates 1.00% 1.00% 1.20% 1.00%

	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	25	38	106	6	21	5	60	513	7	40	1,602	72
Background Traffic Growth	3	4	12	1	2	1	8	68	1	4	176	8
Subtotal (NO BUILD - A.M.)	28	42	118	7	23	6	68	581	8	44	1,778	80
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	10.82%	15.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.89%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.82%	15.89%	15.31%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	2	3	0	0	2	2	2	0	3	0
Total AM Peak Hour BUILD Volumes	28	42	120	10	23	6	70	583	10	44	1,781	80

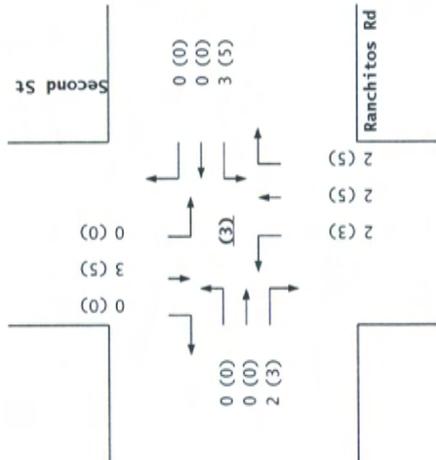
	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	17	13	37	8	27	29	62	1,502	9	14	607	30
Background Traffic Growth	2	1	4	1	3	3	8	198	1	2	67	3
Subtotal (NO BUILD - P.M.)	19	14	41	9	30	32	70	1,700	10	16	674	33
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	10.82%	15.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.89%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.82%	15.89%	15.31%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	3	5	0	0	3	5	5	0	5	0
Total PM Peak Hour BUILD Volumes	19	14	44	14	30	32	73	1,705	15	16	679	33

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	22	14		
	30	31	P.M.	

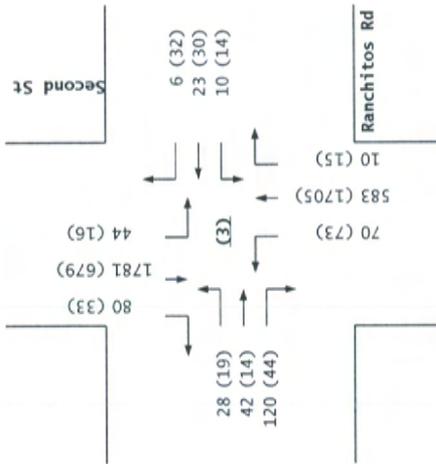
2023
NO BUILD



Trips



2023
BUILD



Ranchitos Rd / Second St

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Driveway "A" / Second St

INTERSECTION : E-W Street: **Driveway "A"** (4)
 N-S Street: **Second St**
 Year of Existing Counts: **2012**
 Horizon Year: **2023**

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	610	0	0	1,625	0
Background Traffic Growth	0	0	0	0	0	0	0	67	0	0	179	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	677	0	0	1,804	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	42.02%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	42.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	6	0	0	5	9	0	0
Subtotal AM Pk Hr. BUILD Volumes	0	0	0	0	0	6	0	677	5	9	1,804	0
Pass-by Trip Adjustments	0	0	0	0	0	1	0	-2	2	4	-4	0
Total AM Peak Hour BUILD Volumes	0	0	0	0	0	7	0	675	7	13	1,800	0

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	1,595	0	0	663	0
Background Traffic Growth	0	0	0	0	0	0	0	175	0	0	73	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	1,770	0	0	736	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	42.02%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	42.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	13	0	0	7	13	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	0	0	13	0	1,770	7	13	736	0
Pass-by Trip Adjustments	0	0	0	0	0	5	0	-5	5	2	-2	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	0	18	0	1,765	12	15	734	0

Number of Commercial Trips Generated
 Entering: **22** Exiting: **14** A.M. 100% Commercial Development
 30 **31** P.M.

Pass-by Trip Calculations:													
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Second St)			Southbound (Second St)			
	Percent Entering	Percent Exiting	Volume Entering	Percent Entering	Percent Exiting	Volume Entering	Percent Entering	Percent Exiting	Volume Entering	Percent Entering	Percent Exiting	Volume Entering	Volume Exiting
AM Pass-by Trips	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	-26.00%	26.00%	67.00%	-67.00%
Percent Entering	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	-2	2	4	-4
Volume Entering	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0.00%	0.00%
Percent Exiting	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	1	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	1	0	-2	2	4	-4	0	0
PM Pass-by Trips	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	-66.00%	66.00%	27.00%	-27.00%
Percent Entering	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	-5	5	2	-2
Volume Entering	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0.00%	0.00%
Percent Exiting	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	5	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	5	0	-5	5	2	-2	0	0
Pass-by Trips	Entering	Exiting											
	6	4	A.M.										
	8	8	P.M.										

Family Dollar Store (Los Ranchos / Second St)
 Projected Turning Movements Worksheet
Los Ranchos Rd / Driveway "B"

INTERSECTION : E-W Street: **Los Ranchos Rd** (5)
 N-S Street: **Driveway "B"**

Year of Existing Counts: **2012**
 Horizon Year: **2023**

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	108	0	0	44	0	0	0	0	0	0	0
Background Traffic Growth	0	12	0	0	5	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	120	0	0	49	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	31.60%	0.00%	0.00%	0.00%	0.00%	3.37%	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%	0.00%	0.00%	0.00%	3.37%	0.00%	54.60%
Total Trips Generated	7	0	0	0	0	1	0	0	0	0	0	8
Subtotal AM Pk Hr. BUILD Volumes	7	120	0	0	49	1	0	0	0	0	0	8
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	3
Total AM Peak Hour BUILD Volumes	7	120	0	0	49	1	0	0	0	0	0	11

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	63	0	0	81	0	0	0	0	0	0	0
Background Traffic Growth	0	7	0	0	9	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	70	0	0	90	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	31.60%	0.00%	0.00%	0.00%	0.00%	3.37%	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%	0.00%	0.00%	0.00%	3.37%	0.00%	54.60%
Total Trips Generated	9	0	0	0	0	1	0	0	0	1	0	17
Subtotal PM Pk Hr. BUILD Volumes	9	70	0	0	90	1	0	0	0	1	0	17
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	2
Total PM Peak Hour BUILD Volumes	9	70	0	0	90	1	0	0	0	1	0	19

Number of Commercial Trips Generated: Entering **22** Exiting **14** A.M. 100% Commercial Development
 Entering **30** Exiting **31** P.M.

	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Driveway "B")			Southbound (Driveway "B")		
	Percent Entering	Percent Exiting	Volume	Percent Entering	Percent Exiting	Volume	Percent Entering	Percent Exiting	Volume	Percent Entering	Percent Exiting	Volume
AM Pass-by Trips	5.00%	-5.00%	0.00%	0.00%	-2.00%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Volume Exiting	0	0	0	0	0	0	0	0	0	5.00%	0.00%	67.00%
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	3
PM Pass-by Trips	4.00%	-4.00%	0.00%	0.00%	-3.00%	3.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Volume Exiting	0	0	0	0	0	0	0	0	0	4.00%	0.00%	27.00%
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	2
Pass-by Trips	6	4	A.M.	8	8	P.M.						

Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

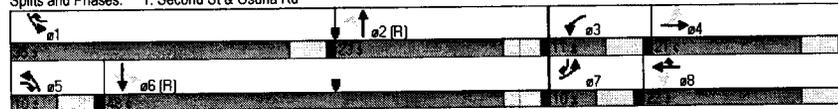
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↑↑	↔	↔	↑	↔	↔	↑↑	↔	↑↑	↔
Volume (vph)	99	450	87	108	241	210	59	401	528	1160	49
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	1	5	2	1	6
Permitted Phases	4	4	4	8	8	8	2	2	6	6	6
Detector Phase	7	4	5	3	8	8	1	5	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	10.0
Total Split (s)	10.0	21.0	10.0	11.0	22.0	10.0	23.0	35.0	48.0	10.0	10.0
Total Split (%)	11.1%	23.3%	11.1%	12.2%	24.4%	11.1%	25.6%	38.9%	53.3%	11.1%	11.1%
Yellow Time (s)	4.0	4.0	4.0	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	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	C-Min	Min	C-Min	Min	Min
Act Effct Green (s)	20.9	15.6	25.7	22.7	16.5	49.1	25.7	20.6	53.2	43.1	53.4
Actuated g/C Ratio	0.23	0.17	0.29	0.25	0.18	0.55	0.29	0.23	0.59	0.48	0.59
v/c Ratio	0.55	0.84	0.18	0.61	0.81	0.26	0.34	0.75	0.94	0.77	0.06
Control Delay	36.2	49.8	2.4	38.8	55.0	5.6	19.5	36.8	34.0	13.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	49.8	2.4	38.8	55.0	5.6	19.5	36.8	34.0	13.7	0.4
LOS	D	D	A	D	D	A	B	D	C	B	A
Approach Delay		41.2			33.3			35.2		19.5	
Approach LOS		D			C			D		B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 28.3
 Intersection Capacity Utilization 80.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 1: Second St & Osuna Rd



2013 AM Peak NOBUILD Conditions

Existing Geometry
 D:\ATOBEP\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2013\ANX.syn

HCM 2010 Signalized Intersection Summary
 1: Second St & Osuna Rd

Terry O. Brown, P.E.
 11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑↑	↔	↔	↑	↔	↔	↑↑	↔	↑↑	↔	↔
Volume (vph)	99	450	87	108	241	210	59	401	170	528	1160	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	1	2	0	1	2
Capacity, veh/h	224	605	358	226	339	691	254	692	290	632	1685	841
Arriving On Green	0.06	0.17	0.17	0.07	0.18	0.18	0.06	0.28	0.28	0.26	0.48	0.48
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	2469.9	1036.5	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	112.5	511.4	98.9	122.7	273.9	238.6	63.4	320.9	293.1	586.7	1288.9	54.4
Grp Sat Flow(s), veh/h/in	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1661.7	1756.8	1752.4	1568.0
Q Serve(g_s), s	4.7	12.6	4.6	5.0	12.7	9.0	2.2	13.6	13.8	19.5	27.0	1.5
Cycle Q Clear(g_c), s	4.7	12.6	4.6	5.0	12.7	9.0	2.2	13.6	13.8	19.5	27.0	1.5
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.624	1.000		1.000
Lane Grp Cap(c), veh/h	224.1	605.4	358.5	225.9	339.3	690.6	254.2	516.6	465.4	631.5	1684.8	841.4
V/C Ratio(X)	0.502	0.845	0.276	0.543	0.807	0.346	0.250	0.621	0.630	0.929	0.765	0.065
Avail Cap(c_a), veh/h	224.1	626.9	368.1	225.9	350.6	700.2	254.2	516.6	465.4	770.0	1684.8	841.4
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.532	0.532	0.532
Uniform Delay (d), s/veh	29.3	35.8	28.4	28.2	35.0	16.5	21.0	28.1	28.1	21.4	19.1	9.9
Incr Delay (d2), s/veh	1.8	10.1	0.4	2.7	12.7	0.3	0.5	2.3	2.7	9.6	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	31.1	45.9	28.8	30.8	47.7	16.8	21.5	30.4	30.9	30.9	20.2	10.0
Lane Group LOS	C	D	C	C	D	B	C	C	C	C	C	A
Approach Volume, veh/h		723			635			677			1930	
Approach Delay, s/veh		41.2			32.8			29.7			23.2	
Approach LOS		D			C			C			C	

Timer

Assigned Phase	7	4		3	8		5	2		1	6
Phase Duration (G+Y+Rc), s	10.00	20.45		11.00	21.45		10.00	30.05		27.95	48.00
Change Period (Y+Rc), s	5.00	5.00		5.00	5.00		5.00	5.00		5.00	5.00
Max Green Setting (Gmax), s	5.00	16.00		6.00	17.00		5.00	18.00		30.00	43.00
Max Q Clear Time (g_c+1), s	6.72	14.64		7.03	14.73		4.23	15.79		21.52	29.02
Green Extension Time (p_c)	0.00	0.81		0.00	1.30		0.01	1.96		1.43	10.39

Intersection Summary

HCM 2010 Control Delay 29.2
 HCM 2010 Level of Service C

2013 AM Peak NOBUILD Conditions

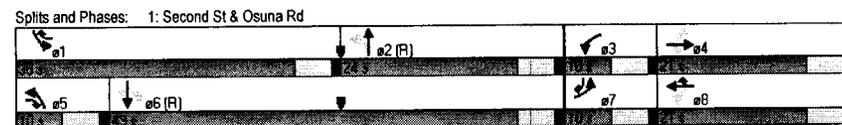
Existing Geometry
 D:\ATOBEP\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2013\ANX.syn

Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑	↑	↑↑	↑	↑↑	↑
Volume (vph)	101	450	87	108	241	213	59	402	530	1161	50
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8.1	5	2	1	6	7
Permitted Phases	4	4	4	8			2		6		6
Detector Phase	7	4	5	3	8	8.1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	24.0	35.0	49.0	10.0
Total Split (%)	11.1%	23.3%	11.1%	11.1%	23.3%		11.1%	26.7%	38.9%	54.4%	11.1%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effect Green (s)	21.0	15.6	25.7	21.2	15.7	48.5	26.2	21.1	53.9	43.8	54.2
Actuated g/C Ratio	0.23	0.17	0.29	0.24	0.17	0.54	0.29	0.23	0.60	0.49	0.60
v/c Ratio	0.60	0.84	0.18	0.65	0.85	0.27	0.33	0.74	0.93	0.76	0.06
Control Delay	39.8	49.8	2.4	44.5	60.9	6.0	18.8	35.4	32.0	13.1	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	49.8	2.4	44.5	60.9	6.0	18.8	35.4	32.0	13.1	0.5
LOS	D	D	A	D	E	A	B	D	C	B	A
Approach Delay		41.7			37.0			33.8		18.5	
Approach LOS		D			D			C		B	

Intersection Summary	
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	84 (93%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	28.3
Intersection LOS:	C
Intersection Capacity Utilization:	81.0%
ICU Level of Service:	D
Analysis Period (min):	15



HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑	↑	↑↑	↑	↑↑	↑	↑
Volume (vph)	101	450	87	108	241	213	59	402	170	530	1161	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	211	609	360	207	321	662	261	739	309	635	1722	858
Arriving On Green	0.06	0.17	0.17	0.06	0.17	0.17	0.06	0.30	0.30	0.25	0.49	0.49
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	2471.8	1034.9	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	114.8	511.4	98.9	122.7	273.9	242.0	63.4	321.5	293.6	588.9	1290.0	55.6
Grp Sat Flow(s),veh/h/ln	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1662.0	1756.8	1752.4	1568.0
Q Serve(g_s), s	4.8	12.6	4.6	5.0	12.9	9.5	2.2	13.3	13.5	18.7	26.5	1.5
Cycle Q Clear(g_c), s	4.8	12.6	4.6	5.0	12.9	9.5	2.2	13.3	13.5	18.7	26.5	1.5
Proportion in Lane	1.000		1.000	1.000		1.000	1.000		0.623	1.000		1.000
Lane Grp Cap(c), veh/h	210.9	609.1	360.0	207.1	320.6	661.6	260.7	551.4	496.8	634.6	1721.8	857.8
V/C Ratio(X)	0.544	0.840	0.275	0.593	0.854	0.366	0.243	0.583	0.591	0.928	0.749	0.065
Avail Cap(c_a), veh/h	210.9	626.1	367.6	207.1	329.5	669.2	260.7	551.4	496.8	787.1	1721.8	857.8
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.524	0.524	0.524
Uniform Delay (d), s/veh	29.5	35.8	28.4	30.0	35.9	17.7	19.9	26.7	26.7	20.7	18.3	9.5
Incr Delay (d2), s/veh	2.9	9.7	0.4	4.5	18.8	0.3	0.5	1.6	1.9	9.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	32.3	45.5	28.8	34.5	54.7	18.0	20.4	28.2	28.6	29.7	19.3	9.5
Lane Group LOS	C	D	C	C	D	B	C	C	C	C	B	A
Approach Volume, veh/h		725			639			678		1934		
Approach Delay, s/veh		41.1			36.9			27.7		22.2		
Approach LOS		D			D			C		C		

Timer	
Assigned Phase	7 4 3 8 5 2 1 6
Phase Duration (G+Y+Rc), s	10.00 20.57 10.00 20.57 10.00 31.77 27.23 49.00
Change Period (Y+Rc), s	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00
Max Green Setting (Gmax), s	5.00 16.00 5.00 16.00 5.00 19.00 30.00 44.00
Max Q Clear Time (g_c+1), s	6.82 14.64 7.00 14.90 4.17 15.47 20.72 28.54
Green Extension Time (p_c)	0.00 0.81 0.00 0.66 0.01 3.07 1.51 11.25

Intersection Summary	
HCM 2010 Control Delay	28.9
HCM 2010 Level of Service	C

Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

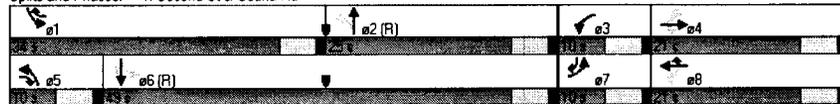
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↖	↗	↘
Volume (vph)	109	495	95	119	265	231	64	441	581	1275	54
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8.1	5	2	1	6	7
Permitted Phases	4	4	4	8			2		6		6
Detector Phase	7	4	5	3	8	8.1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	25.0	34.0	49.0	10.0
Total Split (%)	11.1%	23.3%	11.1%	11.1%	23.3%		11.1%	27.8%	37.8%	54.4%	11.1%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effct Green (s)	21.4	16.0	26.1	21.6	16.1	50.2	24.4	19.3	53.5	43.4	53.8
Actuated g/C Ratio	0.24	0.18	0.29	0.24	0.18	0.56	0.27	0.21	0.59	0.48	0.60
v/c Ratio	0.66	0.90	0.19	0.71	0.91	0.29	0.38	0.87	1.00	0.84	0.06
Control Delay	45.2	56.2	2.8	49.6	69.8	7.4	20.1	44.5	45.2	14.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	56.2	2.8	49.6	69.8	7.4	20.1	44.5	45.2	14.1	0.6
LOS	D	E	A	D	E	A	C	D	D	B	A
Approach Delay		47.2			42.5			42.2		23.2	
Approach LOS		D			D			D		C	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 85 (94%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 33.9
 Intersection Capacity Utilization 87.3%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 1: Second St & Osuna Rd



2023 AM Peak NOBUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (vph)	109	495	95	119	265	231	64	441	186	581	1275	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	201	623	366	196	328	781	231	555	232	671	1713	854
Arriving On Green	0.06	0.18	0.18	0.06	0.18	0.18	0.06	0.22	0.22	0.32	0.49	0.49
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	2471.5	1035.1	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	123.9	562.5	108.0	135.2	301.1	262.5	68.8	353.1	321.1	645.6	1416.7	60.0
Grp Sat Flow(s), veh/h	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1662.0	1756.8	1752.4	1568.0
Q Serve(g_s), s	5.0	14.1	5.1	5.0	14.4	9.1	2.6	16.5	16.7	26.7	31.2	1.6
Cycle Q Clear(g_c), s	5.0	14.1	5.1	5.0	14.4	9.1	2.6	16.5	16.7	26.7	31.2	1.6
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.623	1.000		1.000
Lane Grp Cap(c), veh/h	201.2	623.1	365.9	196.2	327.9	780.5	230.7	414.0	373.0	671.4	1713.5	853.7
V/C Ratio(X)	0.616	0.903	0.295	0.689	0.918	0.336	0.298	0.853	0.861	0.962	0.827	0.070
Avail Cap(c_a), veh/h	201.2	623.1	365.9	196.2	327.9	780.5	230.7	414.0	373.0	675.3	1713.5	853.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.382	0.382	0.382
Uniform Delay (d), s/veh	30.2	36.2	28.4	31.5	36.4	13.6	2.47	33.5	33.5	25.0	19.7	9.7
Incr Delay (d2), s/veh	5.5	16.5	0.4	9.8	29.7	0.3	0.7	15.7	18.1	13.4	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	35.7	52.7	28.9	41.3	66.1	13.9	25.4	49.1	51.7	38.4	21.1	9.7
Lane Group LOS	D	D	C	D	E	B	C	D	D	D	C	A
Approach Volume, veh/h		794			699			743			2122	
Approach Delay, s/veh		46.8			41.7			48.0			26.0	
Approach LOS		D			D			D			C	

Timer

Assigned Phase	7	4	3	8	5	2	1	6
Phase Duration (G+Y+Rc), s	10.00	21.00	10.00	21.00	10.00	25.20	33.80	49.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	5.00	16.00	5.00	16.00	5.00	20.00	29.00	44.00
Max Q Clear Time (g_c+1), s	7.00	16.15	7.00	16.44	4.64	18.72	28.71	33.21
Green Extension Time (p_c)	0.00	0.00	0.00	0.00	0.00	1.19	0.09	8.89

Intersection Summary

HCM 2010 Control Delay: 36.1
 HCM 2010 Level of Service: D

2023 AM Peak NOBUILD Conditions

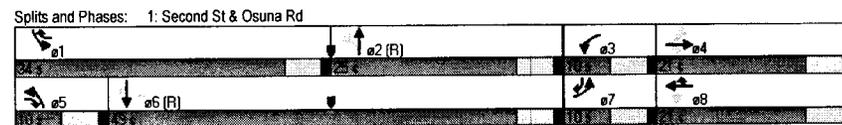
Existing Geometry
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Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑	↑	↑↑	↑	↑↑	↑
Volume (vph)	111	495	95	119	265	234	64	442	583	1276	55
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8.1	5	2	1	6	7
Permitted Phases	4	4	4	8			2		6		6
Detector Phase	7	4	5	3	8	8.1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	25.0	34.0	49.0	10.0
Total Split (%)	11.1%	23.3%	11.1%	11.1%	23.3%		11.1%	27.8%	37.8%	54.4%	11.1%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effect Green (s)	21.4	16.0	26.1	21.6	16.1		24.4	19.3	53.5	43.4	53.8
Actuated g/C Ratio	0.24	0.18	0.29	0.24	0.18		0.27	0.21	0.59	0.48	0.60
v/c Ratio	0.67	0.90	0.19	0.71	0.91		0.29	0.38	0.87	1.00	0.84
Control Delay	45.9	56.2	2.8	49.6	70.0		7.6	20.1	44.5	45.9	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	56.2	2.8	49.6	70.0		7.6	20.1	44.5	45.9	13.9
LOS	D	E	A	D	E		A	C	D	D	A
Approach Delay		47.3			42.4			42.2		23.3	
Approach LOS		D			D			D		C	

Intersection Summary
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 89 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 34.0
 Intersection Capacity Utilization 87.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E



2023 AM Peak BUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑	↑	↑↑	↑	↑↑	↑	↑
Volume (vph)	111	495	95	119	265	234	64	442	186	583	1276	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	201	623	366	196	328	783	231	551	230	673	1713	854
Arriving On Green	0.06	0.18	0.18	0.06	0.18	0.18	0.06	0.22	0.22	0.32	0.49	0.49
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	2473.3	1033.6	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	126.1	562.5	108.0	135.2	301.1	265.9	68.8	353.6	321.6	647.8	1417.8	61.1
Grp Sat Flow(s),veh/h/ln	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1662.3	1756.8	1752.4	1568.0
Q Serve(g_s), s	5.0	14.1	5.1	5.0	14.4	9.2	2.6	16.6	16.8	27.0	31.2	1.7
Cycle Q Clear(g_c), s	5.0	14.1	5.1	5.0	14.4	9.2	2.6	16.6	16.8	27.0	31.2	1.7
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.622	1.000		1.000
Lane Grp Cap(c), veh/h	201.2	623.1	365.9	196.2	327.9	783.4	230.5	410.6	370.0	672.6	1713.5	853.7
V/C Ratio(X)	0.627	0.903	0.295	0.689	0.918	0.339	0.299	0.861	0.869	0.963	0.827	0.072
Avail Cap(c_a), veh/h	201.2	623.1	365.9	196.2	327.9	783.4	230.5	410.6	370.0	673.2	1713.5	853.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.369	0.369	0.369
Uniform Delay (d), s/veh	30.5	36.2	28.4	31.5	36.4	13.6	24.8	33.6	33.7	25.0	19.7	9.7
Incr Delay (d2), s/veh	6.0	16.5	0.4	9.8	29.7	0.3	0.7	16.8	19.4	13.4	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	36.5	52.7	28.9	41.3	66.1	13.8	25.5	50.4	53.1	38.5	21.1	9.7
Lane Group LOS	D	D	C	D	E	B	C	D	D	D	C	A
Approach Volume, veh/h		797			702		744			2127		
Approach Delay, s/veh		46.9			41.5		49.3			26.0		
Approach LOS		D			D		D			C		

Timer

Assigned Phase	7	4	3	8	5	2	1	6
Phase Duration (G+Y+Rc), s	10.00	21.00	10.00	21.00	10.00	25.03	33.97	49.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	5.00	16.00	5.00	16.00	5.00	20.00	29.00	44.00
Max Q Clear Time (g_c+1), s	7.00	16.15	7.00	16.44	4.65	18.79	28.95	33.25
Green Extension Time (p_c)	0.00	0.00	0.00	0.00	0.00	1.12	0.02	8.87

Intersection Summary
 HCM 2010 Control Delay 36.3
 HCM 2010 Level of Service D

2023 AM Peak BUILD Conditions

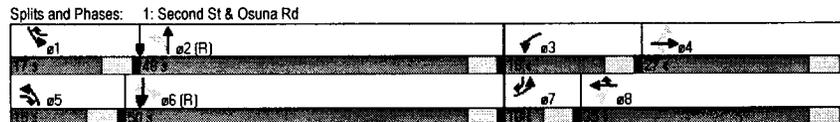
Existing Geometry
D:\ATOB\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2023ABX.syn

Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↖	↗	↘
Volume (vph)	72	297	72	210	423	561	162	989	210	532	101
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8.1	5	2	1	6	7
Permitted Phases	4	5	4	8	5	2	6	1	6	7	6
Detector Phase	7	4	5	3	8	8.1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	27.0	15.0	18.0	35.0		15.0	48.0	17.0	50.0	10.0
Total Split (%)	9.1%	24.5%	13.6%	16.4%	31.8%		13.6%	43.6%	15.5%	45.5%	9.1%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effect Green (s)	27.7	22.4	36.9	39.6	29.5	46.5	52.7	43.2	57.6	45.6	55.9
Actuated g/C Ratio	0.25	0.20	0.34	0.36	0.27	0.42	0.48	0.39	0.52	0.41	0.51
v/c Ratio	0.58	0.51	0.15	0.64	0.90	0.84	0.43	0.91	0.90	0.41	0.13
Control Delay	42.2	42.1	2.7	34.9	61.3	37.5	16.4	42.4	67.7	19.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	42.1	2.7	34.9	61.3	37.5	16.4	42.4	67.7	19.3	2.2
LOS	D	D	A	C	E	D	B	D	E	B	A
Approach Delay	35.7		45.5		39.1		29.3				
Approach LOS	D		D		D		C				

Intersection Summary
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 18 (16%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 38.4
 Intersection Capacity Utilization 86.1%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E



HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (vph)	72	297	72	210	423	561	162	989	125	210	532	101
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	190	760	463	377	510	582	446	1280	162	271	1453	722
Arriving On Green	0.05	0.22	0.22	0.11	0.28	0.28	0.08	0.40	0.40	0.09	0.41	0.41
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	3212.4	405.4	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	88.9	366.7	88.9	221.1	445.3	590.5	180.0	630.2	607.5	233.3	591.1	112.2
Grp Sat Flow(s),veh/h/ln	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1773.1	1756.8	1752.4	1568.0
Q Serve(g_s), s	4.3	9.9	4.6	9.4	25.0	30.0	6.5	33.9	34.0	8.2	12.9	4.5
Cycle Q Clear(g_c), s	4.3	9.9	4.6	9.4	25.0	30.0	6.5	33.9	34.0	8.2	12.9	4.5
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.229	1.000		1.000
Lane Grp Cap(c), veh/h	190.2	759.8	463.4	377.4	509.8	581.9	445.5	735.2	706.7	270.5	1453.0	722.2
V/C Ratio(X)	0.467	0.483	0.192	0.586	0.873	1.015	0.404	0.857	0.860	0.863	0.407	0.155
Avail Cap(c_a), veh/h	190.2	759.8	463.4	402.2	509.8	581.9	469.0	735.2	706.7	298.3	1453.0	722.2
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.973	0.973	0.973
Uniform Delay (d), s/veh	32.8	37.2	28.6	24.3	37.5	34.1	17.3	29.8	29.9	23.7	22.4	17.0
Incr Delay (d2), s/veh	1.8	0.5	0.2	2.0	15.4	41.1	0.6	9.9	10.4	20.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	34.6	37.7	28.8	26.3	52.8	75.2	17.8	39.7	40.3	43.8	22.6	17.1
Lane Group LOS	C	D	C	C	D	F	B	D	D	D	C	B
Approach Volume, veh/h	544		1257		1418		937					
Approach Delay, s/veh	35.7		58.7		37.2		27.2					
Approach LOS	D		E		D		C					

Timer

Assigned Phase	7	4	3	8	5	2	1	6
Phase Duration (G+Y+Rc), s	10.00	28.53	16.47	35.00	13.55	48.26	15.29	50.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	5.00	22.00	13.00	30.00	10.00	43.00	12.00	45.00
Max Q Clear Time (g_c+1), s	6.26	11.93	11.37	32.00	8.48	36.03	10.16	14.89
Green Extension Time (p_c)	0.00	5.21	0.10	0.00	0.07	5.62	0.13	16.96

Intersection Summary
 HCM 2010 Control Delay 41.2
 HCM 2010 Level of Service D

Timings
1: Second St & Osuna Rd

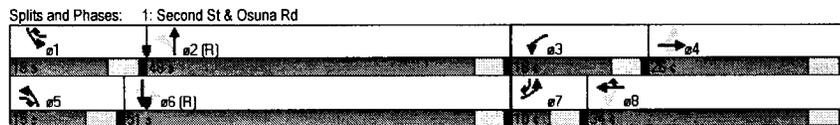
Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↕	↕	↕	↕	↕
Volume (vph)	74	297	72	210	423	566	162	991	215	534	104
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	1	5	2	1	6
Permitted Phases	4	4	4	8			2		6		6
Detector Phase	7	4	5	3	8	8	1	5	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	26.0	15.0	18.0	34.0		15.0	48.0	18.0	51.0	10.0
Total Split (%)	9.1%	23.6%	13.6%	16.4%	30.9%		13.6%	43.6%	16.4%	46.4%	9.1%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effect Green (s)	27.1	21.7	36.2	38.9	28.8		46.5	52.7	43.1	59.0	46.3
Actuated g/C Ratio	0.25	0.20	0.33	0.35	0.26		0.42	0.48	0.39	0.54	0.42
v/c Ratio	0.60	0.53	0.15	0.65	0.92		0.85	0.43	0.91	0.89	0.40
Control Delay	44.5	43.1	2.8	36.3	65.7		38.1	15.9	42.6	65.3	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	43.1	2.8	36.3	65.7		38.1	15.9	42.6	65.3	18.7
LOS	D	D	A	D	E		D	B	D	E	B
Approach Delay		36.8			47.5			39.3			28.4
Approach LOS		D			D			D			C

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 19 (17%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 39.0
Intersection Capacity Utilization 86.4%
Analysis Period (min) 15

Intersection LOS: D
ICU Level of Service: E



2013 PM Peak BUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↕	↕	↕	↕	↕	↕
Volume (vph)	74	297	72	210	423	566	162	991	215	534	104	
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	179	725	446	368	493	569	453	1306	164	277	1486	737
Arriving On Green	0.05	0.21	0.21	0.11	0.27	0.27	0.08	0.41	0.41	0.10	0.42	0.42
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	3213.3	404.6	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	91.4	366.7	88.9	221.1	445.3	595.8	180.0	631.3	608.7	238.9	593.3	115.6
Grp Sat Flow(s), veh/h	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1773.3	1756.8	1752.4	1568.0
Q Serve(g_s), s	4.4	10.1	4.7	9.5	25.3	29.0	6.4	33.5	33.7	8.2	12.7	4.6
Cycle Q Clear(g_c), s	4.4	10.1	4.7	9.5	25.3	29.0	6.4	33.5	33.7	8.2	12.7	4.6
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.228	1.000		1.000
Lane Grp Cap(c), veh/h	179.3	724.6	446.5	368.1	493.2	569.4	452.7	749.6	720.6	277.2	1486.5	737.3
V/C Ratio(X)	0.510	0.506	0.199	0.601	0.903	1.046	0.398	0.842	0.845	0.862	0.399	0.157
Avail Cap(c_a), veh/h	179.3	724.6	446.5	391.2	493.2	569.4	477.6	749.6	720.6	319.5	1486.5	737.3
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.971	0.971	0.971	0.971
Uniform Delay (d), s/veh	33.7	38.1	29.4	24.9	38.4	34.5	16.8	29.1	29.1	23.3	21.7	16.4
Incr Delay (d2), s/veh	2.4	0.6	0.2	2.3	19.8	50.4	0.6	8.6	9.1	18.4	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	36.1	38.7	29.6	27.3	58.1	84.9	17.3	37.7	38.2	41.7	21.8	16.5
Lane Group LOS	D	D	C	C	E	F	B	D	D	D	C	B
Approach Volume, veh/h		547			1262			1420			948	
Approach Delay, s/veh		36.8			65.4			35.3			26.2	
Approach LOS		D			E			D			C	

Timer

Assigned Phase	7	4	3	8	5	2	1	6
Phase Duration (G+Y+Rc), s	10.00	27.42	16.58	34.00	13.46	49.07	15.39	51.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	5.00	21.00	13.00	29.00	10.00	43.00	13.00	46.00
Max Q Clear Time (g_c+1), s	6.45	12.05	11.48	31.00	8.38	35.65	10.20	14.73
Green Extension Time (p_c)	0.00	4.82	0.09	0.00	0.08	5.90	0.19	17.39

Intersection Summary

HCM 2010 Control Delay: 42.5
HCM 2010 Level of Service: D

2013 PM Peak BUILD Conditions

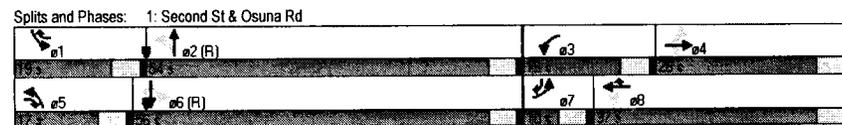
Existing Geometry
D:\ATOB\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2013PBX.syn

Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↖	↗	↘
Volume (vph)	79	326	79	231	465	616	178	1087	231	585	111
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	1	2	1	6	7
Permitted Phases	4		4	8			2		6		6
Detector Phase	7	4	5	3	8	8	1	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	28.0	17.0	19.0	37.0		17.0	54.0	19.0	56.0	10.0
Total Split (%)	8.3%	23.3%	14.2%	15.8%	30.8%		14.2%	45.0%	15.8%	46.7%	8.3%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effct Green (s)	28.3	23.3	39.4	42.0	32.0	51.0	60.0	49.0	65.9	52.0	62.0
Actuated g/C Ratio	0.24	0.19	0.33	0.35	0.27	0.42	0.50	0.41	0.55	0.43	0.52
v/c Ratio	0.73	0.59	0.17	0.75	0.99	0.92	0.48	0.96	0.97	0.43	0.14
Control Delay	62.0	48.2	4.9	46.1	83.5	49.6	17.2	51.1	83.2	23.5	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	48.2	4.9	46.1	83.5	49.6	17.2	51.1	83.2	23.5	3.1
LOS	E	D	A	D	F	D	B	D	F	C	A
Approach Delay	43.4				61.0			46.8		36.0	
Approach LOS	D				E			D		D	

Intersection Summary
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 48.2
 Intersection Capacity Utilization 92.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F



2023 PM Peak NOBUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (vph)	79	326	79	231	465	616	178	1087	138	231	585	111
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	148	684	435	348	493	599	447	1314	166	282	1548	758
Arriving On Green	0.04	0.20	0.20	0.11	0.27	0.27	0.08	0.41	0.11	0.44	0.44	0.44
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	3211.4	406.3	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	97.5	402.5	97.5	243.2	489.5	648.4	197.8	691.9	669.2	256.7	650.0	123.3
Grp Sat Flow(s), veh/h/m	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1773.0	1756.8	1752.4	1568.0
Q Serve(g_s), s	5.0	12.5	5.7	11.6	31.7	32.0	7.7	42.5	42.9	11.7	15.2	5.3
Cycle Q Clear(g_c), s	5.0	12.5	5.7	11.6	31.7	32.0	7.7	42.5	42.9	11.7	15.2	5.3
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.229	1.000		1.000
Lane Grp Cap(c), veh/h	148.4	684.3	435.1	347.9	492.9	599.1	447.2	754.8	725.4	282.0	1548.4	758.2
V/C Ratio(X)	0.657	0.588	0.224	0.699	0.993	1.082	0.442	0.917	0.922	0.910	0.420	0.163
Avail Cap(c_a), veh/h	148.4	684.3	435.1	353.5	492.9	599.1	478.8	754.8	725.4	285.6	1548.4	758.2
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.967	0.967	0.967
Uniform Delay (d), s/veh	40.3	43.8	33.3	28.2	43.8	37.0	18.2	33.4	33.6	33.7	22.9	17.3
Incr Delay (d2), s/veh	10.1	1.3	0.3	5.9	38.6	61.0	0.7	16.0	17.3	30.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	50.4	45.1	33.6	34.1	82.4	98.0	18.9	49.4	50.9	63.8	23.1	17.4
Lane Group LOS	D	D	C	C	F	F	B	D	D	E	C	B
Approach Volume, veh/h	598				1381			1559				1030
Approach Delay, s/veh	44.1				81.2			46.2				32.6
Approach LOS	D				F			D				C

Timer

Assigned Phase	7	4	3	8	5	2	1	6
Phase Duration (G+Y+Rc), s	10.00	28.38	18.62	37.00	14.85	54.00	18.76	57.91
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	5.00	23.00	14.00	32.00	12.00	49.00	14.00	51.00
Max Q Clear Time (g_c+H), s	7.00	14.50	13.59	34.00	9.73	44.90	13.73	17.22
Green Extension Time (p_c)	0.00	5.06	0.03	0.00	0.12	3.62	0.02	20.47

Intersection Summary
 HCM 2010 Control Delay 53.4
 HCM 2010 Level of Service D

2023 PM Peak NOBUILD Conditions

Existing Geometry
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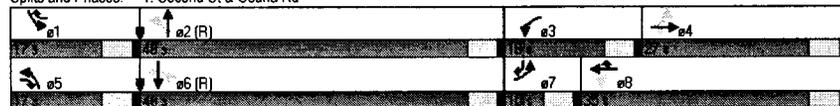
Timings
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↕	↔
Volume (vph)	81	326	79	231	465	621	178	1089	236	587	114
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8.1	5	2	1	6	7
Permitted Phases	4	4	4	8			2		6		6
Detector Phase	7	4	5	3	8	8.1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0		10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	27.0	17.0	18.0	35.0		17.0	48.0	17.0	48.0	10.0
Total Split (%)	9.1%	24.5%	15.5%	16.4%	31.8%		15.5%	43.6%	15.5%	43.6%	9.1%
Yellow Time (s)	4.0	4.0	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	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min		Min	C-Min	Min	C-Min	Min
Act Effect Green (s)	27.3	22.3	38.2	40.0	30.0	47.0	53.9	43.0	56.1	44.1	54.1
Actuated g/C Ratio	0.25	0.20	0.35	0.36	0.27	0.43	0.49	0.39	0.51	0.40	0.49
v/c Ratio	0.68	0.56	0.16	0.72	0.97	0.92	0.49	1.01	1.02	0.46	0.15
Control Delay	51.5	43.2	3.5	39.9	74.3	47.1	17.6	59.5	97.9	21.0	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	43.2	3.5	39.9	74.3	47.1	17.6	59.5	97.9	21.0	1.9
LOS	D	D	A	D	E	D	B	E	F	C	A
Approach Delay		38.1			55.4			54.2		38.1	
Approach LOS		D			E			D		D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 31 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Second St & Osuna Rd



2023 PM Peak BUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
1: Second St & Osuna Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↕	↔	↔
Volume (vph)	81	326	79	231	465	621	178	1089	138	236	587	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Capacity, veh/h	162	715	455	364	503	599	432	1256	159	265	1452	721
Arriving On Green	0.05	0.20	0.20	0.11	0.27	0.27	0.09	0.39	0.39	0.11	0.41	0.41
Sat Flow, veh/h	1756.8	1568.0	1568.0	1756.8	1568.0	1568.0	1756.8	3212.2	405.6	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	100.0	402.5	97.5	243.2	489.5	653.7	197.8	693.0	670.3	262.2	652.2	126.7
Grp Sat Flow(s), veh/h/ln	1756.8	1752.4	1568.0	1756.8	1844.7	1568.0	1756.8	1844.7	1773.1	1756.8	1752.4	1568.0
Q Serve(g_s), s	5.0	11.4	5.2	10.5	28.9	30.0	7.3	40.3	40.7	11.8	14.7	5.2
Cycle Q Clear(g_c), s	5.0	11.4	5.2	10.5	28.9	30.0	7.3	40.3	40.7	11.8	14.7	5.2
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		0.229	1.000		1.000
Lane Grp Cap(c), veh/h	161.6	715.3	454.6	363.6	503.1	598.7	431.8	721.1	693.1	265.2	1451.6	720.7
V/C Ratio(X)	0.619	0.563	0.215	0.669	0.973	1.092	0.458	0.961	0.967	0.989	0.449	0.176
Avail Cap(c_a), veh/h	161.6	715.3	454.6	370.8	503.1	598.7	472.7	721.1	693.1	265.2	1451.6	720.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.962	0.962	0.962
Uniform Delay (d), s/veh	35.0	39.4	29.6	25.3	39.6	34.0	17.9	32.7	32.8	32.5	23.2	17.5
Incr Delay (d2), s/veh	7.0	1.0	0.2	4.5	33.1	64.3	0.8	24.3	26.2	50.9	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	42.0	40.4	29.8	29.7	72.7	98.3	18.6	56.9	59.0	83.4	23.4	17.6
Lane Group LOS	D	D	C	C	E	F	B	E	E	F	C	D
Approach Volume, veh/h		600			1386			1561				1041
Approach Delay, s/veh		38.9			77.2			53.0				37.8
Approach LOS		D			E			D				D

Timer	
Assigned Phase	7 4 3 8 5 2 1 6
Phase Duration (G+Y+Rc), s	10.00 27.45 17.55 35.00 14.44 48.00 17.00 50.56
Change Period (Y+Rc), s	5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00
Max Green Setting (Gmax), s	5.00 22.00 13.00 30.00 12.00 43.00 12.00 43.00
Max Q Clear Time (g_c+1), s	6.98 13.36 12.51 32.00 9.30 42.73 13.78 16.73
Green Extension Time (p_c)	0.00 5.13 0.04 0.00 0.14 0.26 0.00 17.47

Intersection Summary	
HCM 2010 Control Delay	55.0
HCM 2010 Level of Service	E

2023 PM Peak BUILD Conditions

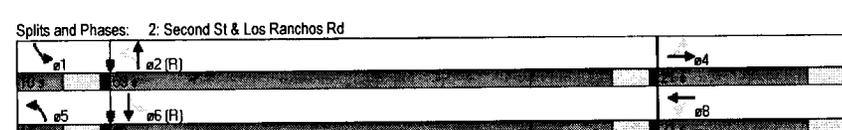
Existing Geometry
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Timings
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		⇕		⇕	↑	↑↑	↑	↑↑
Volume (vph)	28	25	15	16	30	565	62	1562
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%
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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0		5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	C-Min	None	C-Min
Act Effect Green (s)	10.0		10.0		65.7	61.0	65.3	59.2
Actuated g/C Ratio	0.11		0.11		0.73	0.68	0.73	0.66
v/c Ratio	0.55		0.30		0.17	0.28	0.12	0.78
Control Delay	36.3		31.2		5.4	2.4	1.1	4.1
Queue Delay	0.0		0.0		0.0	0.0	0.0	0.0
Total Delay	36.3		31.2		5.4	2.4	1.1	4.1
LOS	D		C		A	A	A	A
Approach Delay	36.3		31.2		2.6		4.0	
Approach LOS	D		C		A		A	

Intersection Summary
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 5.5
 Intersection Capacity Utilization 66.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service: C



2013 AM Peak NOBUILD Conditions Existing Geometry
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HCM 2010 Signalized Intersection Summary
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕		↑	↑↑		↑	↑↑	
Volume (vph)	28	25	36	15	16	13	30	565	22	62	1562	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	0	1	0	1	2	0	1	2
Capacity, veh/h	88	55	58	94	86	51	276	2342	91	619	2375	26
Arriving On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.66	0.66	0.05	0.65	0.65
Sat Flow, veh/h	425.0	338.5	546.4	552.5	424.6	478.8	1756.8	3527.8	137.3	1756.8	3642.7	39.6
Grp Volume(v), veh/h	111.3	0.0	0.0	55.7	0.0	0.0	34.1	335.5	331.5	70.5	897.6	896.7
Grp Sat Flow(s),veh/h/h	1350.8	0.0	0.0	1620.7	0.0	0.0	1756.8	1844.7	1820.4	1756.8	1844.7	1837.7
Q Serve(g_s), s	3.9	0.0	0.0	0.0	0.0	0.0	0.5	6.2	6.2	1.0	27.3	27.5
Cycle Q Clear(g_c), s	6.4	0.0	0.0	2.4	0.0	0.0	0.5	6.2	6.2	1.0	27.3	27.5
Proportion In Lane	0.315		0.404	0.341		0.295	1.000		0.075	1.000		0.022
Lane Grp Cap(c), veh/h	201.2	0.0	0.0	231.1	0.0	0.0	276.1	1224.6	1208.5	618.9	1202.6	1198.0
V/C Ratio(X)	0.553	0.000	0.000	0.241	0.000	0.000	0.123	0.274	0.274	0.114	0.746	0.748
Avail Cap(c_a), veh/h	305.5	0.0	0.0	332.1	0.0	0.0	276.1	1224.6	1208.5	639.9	1202.6	1198.0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.760	0.760	0.760	0.516	0.516	0.516
Uniform Delay (d), s/veh	35.5	0.0	0.0	34.1	0.0	0.0	8.8	5.7	5.7	4.1	9.8	9.8
Incr Delay (d2), s/veh	2.4	0.0	0.0	0.5	0.0	0.0	0.2	0.1	0.1	0.0	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	37.8	0.0	0.0	34.7	0.0	0.0	9.0	5.8	5.8	4.1	11.1	11.2
Lane Group LOS	D			C			A	A	A	A	B	B
Approach Volume, veh/h	111			56			701			1865		
Approach Delay, s/veh	37.8			34.7			6.0			10.9		
Approach LOS	D			C			A			B		

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	13.83		13.83		10.00	59.99
Change Period (Y+Rc), s	5.00		5.00		5.00	5.00
Max Green Setting (Gmax), s	16.00		16.00		5.00	54.00
Max Q Clear Time (g_c+1), s	8.35		4.43		2.45	8.20
Green Extension Time (p_c)	0.48		0.64		0.01	27.60

Intersection Summary
 HCM 2010 Control Delay 11.2
 HCM 2010 Level of Service B

2013 AM Peak NOBUILD Conditions Existing Geometry
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Timings
2: Second St & Los Ranchos Rd

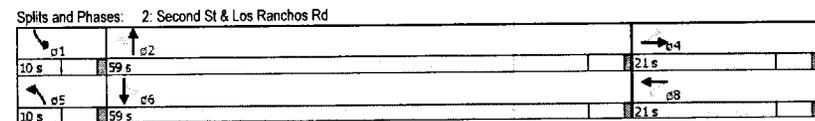
Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔		↔		↖	↗	↖	↗
Volume (vph)	29	28	21	18	30	569	62	1565
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4		8		5	2	1	6
Permitted Phases	4		8		2	6		
Detector Phase	4		8		5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%
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
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0		5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min							
Act Effct Green (s)	9.9	9.9	21.0	52.2	47.1	52.2	47.1	47.1
Actuated g/C Ratio	0.13	0.13	0.13	0.67	0.61	0.67	0.61	0.61
v/c Ratio	0.52	0.33	0.16	0.32	0.13	0.84		
Control Delay	34.0		30.8	5.0	7.8	3.8	17.2	
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	34.0		30.8	5.0	7.8	3.8	17.2	
LOS	C		C	A	A	A	B	
Approach Delay	34.0		30.8		7.7		16.7	
Approach LOS	C		C		A		B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 77.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 15.4
Intersection Capacity Utilization 66.1%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C



HCM 2010 Signalized Intersection Summary
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↖	↗	↖	↗	↖	↗	↖	↗
Volume (veh/h)	29	28	36	21	18	13	30	569	26	62	1565	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Cap. veh/h	102	62	64	114	79	40	280	2161	100	624	2249	25
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.07	0.63	0.63	0.07	0.63	0.63	0.63
Sat Flow, veh/h	386	613	633	459	776	395	1757	3411	158	1757	3550	40
Grp Volume(v), veh/h	116	0	0	66	0	0	34	332	345	70	876	922
Grp Sat Flow(s), veh/h/ln	1633	0	0	1631	0	0	1757	1752	1817	1752	1752	1838
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.4	6.5	6.5	0.9	27.7	27.8
Cycle Q Clear(g_c), s	5.1	0.0	0.0	2.7	0.0	0.0	0.4	6.5	6.5	0.9	27.7	27.8
Prop In Lane	0.31		0.39	0.41		0.24	1.00		0.09	1.00		0.02
Lane Grp Cap(c), veh/h	228	0	0	233	0	0	280	1110	1151	624	1110	1164
V/C Ratio(X)	0.51	0.00	0.00	0.28	0.00	0.00	0.12	0.30	0.30	0.11	0.79	0.79
Avail Cap(c_a), veh/h	401	0	0	401	0	0	280	1254	1300	624	1254	1315
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	0.0	0.0	31.7	0.0	0.0	9.4	6.3	6.3	3.8	10.1	10.2
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.7	0.0	0.0	0.2	0.1	0.1	0.1	3.1	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.2	0.0	0.0	1.2	0.0	0.0	0.2	2.2	2.2	0.3	10.2	10.7
Lane Grp Delay (d), s/veh	34.4	0.0	0.0	32.3	0.0	0.0	9.6	6.4	6.4	3.9	13.2	13.2
Lane Grp LOS	C			C			A	A	A	A	B	B
Approach Vol, veh/h	116				66		711		1868			
Approach Delay, s/veh	34.4				32.3		6.6		12.9			
Approach LOS	C				C		A		B			

Timer

Assigned Phs	4	8	5	2	1	6
Phs Duration (G+Y+Rc), s	12.7	12.7	10.0	52.8	10.0	52.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	16.0	16.0	5.0	54.0	5.0	54.0
Max Q Clear Time (g_c+I1), s	7.1	4.7	2.4	8.5	2.9	29.8
Green Ext Time (p_c), s	0.6	0.7	0.0	27.7	0.0	18.0

Intersection Summary

HCM 2010 Ctrl Delay 12.6
HCM 2010 LOS B

Notes

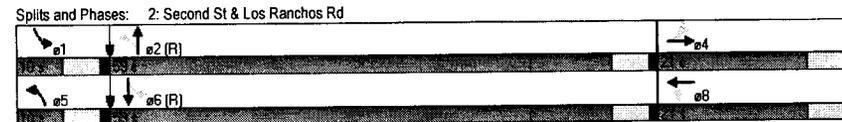
Timings

2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔	↕	↕	↕	↕
Volume (vph)	31	28	17	18	33	620	68	1717
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%
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
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	C-Min	None	C-Min
Act Eff Green (s)	10.7	10.7	10.7	10.7	65.0	60.4	64.6	58.6
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.72	0.67	0.72	0.65
v/c Ratio	0.58	0.33	0.20	0.31	0.14	0.14	0.87	0.87
Control Delay	37.2		31.2	6.3	2.4	1.0	5.6	
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.1	
Total Delay	37.2		31.2	6.3	2.4	1.0	5.7	
LOS	D		C	A	A	A	A	A
Approach Delay	37.2		31.2		2.6		5.5	
Approach LOS	D		C		A		A	

Intersection Summary
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 88 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 6.6
 Intersection Capacity Utilization 71.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C



HCM 2010 Signalized Intersection Summary
 2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕	↕	↕	↕	↕
Volume (vph)	31	28	40	17	18	14	33	620	24	68	1717	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Capacity, veh/h	91	59	63	99	93	54	242	2313	89	580	2351	26
Arriving On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.06	0.66	0.66	0.05	0.65	0.65
Sat Flow, veh/h	424.2	340.7	547.4	567.3	425.0	467.2	1756.8	3528.7	136.5	1756.8	3642.0	40.2
Grp Volume(v), veh/h	123.8	0.0	0.0	62.0	0.0	0.0	37.5	368.2	363.7	77.3	986.4	986.4
Grp Sat Flow(s),veh/h/ln	1354.9	0.0	0.0	1635.1	0.0	0.0	1756.8	1844.7	1820.6	1756.8	1844.7	1837.6
Q Serve(g_s), s	4.4	0.0	0.0	0.0	0.0	0.0	0.5	7.2	7.2	1.2	34.1	34.4
Cycle Q Clear(g_c), s	7.1	0.0	0.0	2.7	0.0	0.0	0.5	7.2	7.2	1.2	34.1	34.4
Proportion In Lane	0.313		0.404	0.347		0.286	1.000		0.075	1.000		0.022
Lane Grp Cap(c), veh/h	212.8	0.0	0.0	246.6	0.0	0.0	242.3	1209.2	1193.4	580.5	1190.9	1186.3
V/C Ratio(X)	0.582	0.000	0.000	0.252	0.000	0.000	0.155	0.304	0.305	0.133	0.828	0.831
Avail Cap(c_a), veh/h	304.3	0.0	0.0	334.4	0.0	0.0	242.3	1209.2	1193.4	597.9	1190.9	1186.3
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.645	0.645	0.645	0.353	0.353	0.353
Uniform Delay (d), s/veh	35.3	0.0	0.0	33.9	0.0	0.0	12.4	6.2	6.2	4.3	11.3	11.3
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.5	0.0	0.0	0.2	0.1	0.1	0.0	1.8	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	37.8	0.0	0.0	34.5	0.0	0.0	12.6	6.3	6.3	4.4	13.1	13.2
Lane Group LOS	D			C			B	A	A	A	B	B
Approach Volume, veh/h	124			62			769			2050		
Approach Delay, s/veh	37.8			34.5			6.6			12.9		
Approach LOS	D			C			A			B		

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	14.65		14.65	10.00	59.83	9.17
Change Period (Y+Rc), s	5.00		5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00		16.00	5.00	54.00	5.00
Max Q Clear Time (g_c+1), s	9.13		4.71	2.52	9.19	3.17
Green Extension Time (p_c)	0.52		0.73	0.01	31.44	0.02

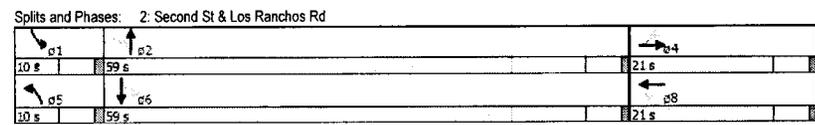
Intersection Summary
 HCM 2010 Control Delay 12.7
 HCM 2010 Level of Service B

Timings
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔		↔		↕		↕	
Volume (vph)	32	31	23	20	33	624	68	1720
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4		8		5		2	
Permitted Phases	4		8		2		6	
Detector Phase	4		8		5		2	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%
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
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	
Total Lost Time (s)	5.0		5.0		5.0		5.0	
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min							
Act Effct Green (s)	10.6	10.6	10.6	10.6	56.9	51.8	56.9	51.8
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.69	0.63	0.69	0.63
v/c Ratio	0.57	0.57	0.37	0.19	0.34	0.15	0.90	0.90
Control Delay	36.3		32.7		5.8		4.1	
Queue Delay	0.0		0.0		0.0		0.0	
Total Delay	36.3		32.7		5.8		4.1	
LOS	D		C		A		A	
Approach Delay	36.3		32.7		7.9		20.5	
Approach LOS	D		C		A		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 82.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 18.2	Intersection LOS: B
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	



HCM 2010 Signalized Intersection Summary
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↕			↕		
Volume (veh/h)	32	31	40	23	20	14	33	624	28	68	1720	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Cap, veh/h	101	66	68	110	81	43	243	2198	99	589	2283	27
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.08	0.64	0.64	0.06	0.64	0.64
Sat Flow, veh/h	391	611	635	434	756	397	1757	3416	154	1757	3548	42
Grp Volume(v), veh/h	129	0	0	72	0	0	38	364	377	77	964	1014
Grp Sat Flow(s),veh/h/ln	1637	0	0	1587	0	0	1757	1752	1817	1757	1752	1837
Q Serve(g_s), s	2.8	0.0	0.0	0.0	0.0	0.0	0.5	7.5	7.5	1.1	35.0	35.3
Cycle Q Clear(g_c), s	6.0	0.0	0.0	3.1	0.0	0.0	0.5	7.5	7.5	1.1	35.0	35.3
Prop In Lane	0.31		0.39	0.40		0.25	1.00	0.08	1.00		0.02	0.02
Lane Grp Cap(c), veh/h	235	0	0	233	0	0	243	1127	1169	589	1127	1182
V/C Ratio(X)	0.55	0.00	0.00	0.31	0.00	0.00	0.16	0.32	0.32	0.13	0.85	0.86
Avail Cap(c_a), veh/h	378	0	0	373	0	0	243	1179	1223	589	1179	1236
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	0.0	0.0	33.3	0.0	0.0	13.0	6.4	6.4	4.0	11.3	11.4
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.7	0.0	0.0	0.3	0.2	0.2	0.1	6.1	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.6	0.0	0.0	1.4	0.0	0.0	0.4	2.6	2.7	0.3	13.7	14.4
Lane Grp Delay (d), s/veh	36.6	0.0	0.0	34.1	0.0	0.0	13.2	6.6	6.6	4.1	17.5	17.4
Lane Grp LOS	D		C		B		A		A		B	
Approach Vol, veh/h	129		72		779		2055					
Approach Delay, s/veh	36.6		34.1		6.9		17.0					
Approach LOS	D		C		A		B					

Timer	
Assigned Phs	4 8 5 2 1 6
Phs Duration (G+Y+Rc), s	13.6 13.6 10.0 56.6 10.0 56.6
Change Period (Y+Rc), s	5.0 5.0 5.0 5.0 5.0 5.0
Max Green Setting (Gmax), s	16.0 16.0 5.0 54.0 5.0 54.0
Max Q Clear Time (g_c+1), s	8.0 5.1 2.5 9.5 3.1 37.3
Green Ext Time (p_c), s	0.6 0.8 0.0 31.5 0.0 14.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Notes

Timings
2: Second St & Los Ranchos Rd

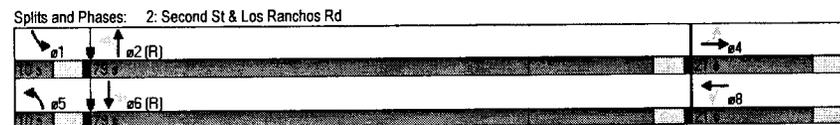
Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	15	24	22	32	58	1572	26	631
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	2	1	6
Permitted Phases	4	4	8	8	5	2	1	6
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	79.0	10.0	79.0
Total Split (%)	19.1%	19.1%	19.1%	19.1%	9.1%	71.8%	9.1%	71.8%
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
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	C-Min	None	C-Min	
Act Effect Green (s)		11.1		11.1	86.1	82.5	83.6	78.0
Actuated g/C Ratio		0.10		0.10	0.78	0.75	0.76	0.71
v/c Ratio		0.43		0.59	0.11	0.66	0.12	0.27
Control Delay		42.8		51.5	2.3	6.8	4.2	5.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		42.8		51.5	2.3	6.8	4.2	5.6
LOS		D		D	A	A	A	A
Approach Delay		42.8		51.5		6.6		5.5
Approach LOS		D		D		A		A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 9.1
Intersection Capacity Utilization: 62.6%
Analysis Period (min): 15

Intersection LOS: A
ICU Level of Service: B



2013 PM Peak NOBUILD Conditions Existing Geometry
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HCM 2010 Signalized Intersection Summary
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	15	24	17	22	32	27	58	1572	13	26	631	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Capacity, veh/h	70	77	44	70	63	44	650	2703	22	258	2589	49
Arriving On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.05	0.74	0.74	0.03	0.72	0.72
Sat Flow, veh/h	442.8	539.6	501.8	404.4	498.4	496.3	1756.8	3653.8	30.2	1756.8	3608.6	68.6
Grp Volume(v), veh/h	71.8	0.0	0.0	103.8	0.0	0.0	63.0	861.9	860.9	27.1	335.9	333.9
Grp Sat Flow(s),veh/h/n	1653.1	0.0	0.0	1489.0	0.0	0.0	1756.8	1844.7	1839.3	1756.8	1844.7	1832.6
Q Serve(g_s), s	0.0	0.0	0.0	2.7	0.0	0.0	0.8	23.5	23.6	0.4	6.5	6.5
Cycle Q Clear(g_c), s	4.0	0.0	0.0	6.6	0.0	0.0	0.8	23.5	23.6	0.4	6.5	6.5
Proportion In Lane	0.268		0.304	0.272		0.333	1.000		0.016	1.000		0.037
Lane Grp Cap(c), veh/h	190.7	0.0	0.0	176.3	0.0	0.0	650.4	1364.7	1360.8	257.9	1323.5	1314.9
V/C Ratio(X)	0.377	0.000	0.000	0.589	0.000	0.000	0.097	0.632	0.633	0.105	0.254	0.254
Avail Cap(c_a), veh/h	274.5	0.0	0.0	260.3	0.0	0.0	650.4	1364.7	1360.8	297.1	1323.5	1314.9
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.367	0.367	0.367	0.973	0.973	0.973
Uniform Delay (d), s/veh	44.7	0.0	0.0	45.0	0.0	0.0	2.8	6.6	6.6	5.9	5.0	5.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	3.1	0.0	0.0	0.0	0.3	0.4	0.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	45.9	0.0	0.0	48.1	0.0	0.0	2.8	6.9	6.9	6.1	5.1	5.1
Lane Group LOS	D			D			A	A	A	A	A	A
Approach Volume, veh/h		72			104			1786				697
Approach Delay, s/veh		45.9			48.1			6.8				5.2
Approach LOS		D			D			A				A

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	14.14	14.14	10.00	81.30	7.70	79.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00	16.00	5.00	74.00	5.00	74.00
Max Q Clear Time (g_c+1), s	5.97	8.64	2.81	25.61	2.41	8.49
Green Extension Time (p_c)	0.62	0.50	0.02	26.95	0.01	31.05

Intersection Summary

HCM 2010 Control Delay	9.0
HCM 2010 Level of Service	A

2013 PM Peak NOBUILD Conditions Existing Geometry
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Timings
2: Second St & Los Ranchos Rd

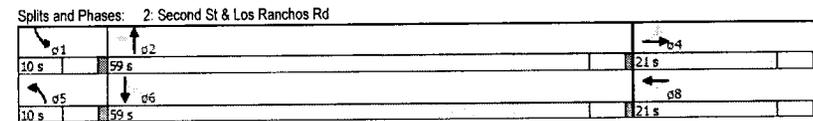
Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	17	28	35	36	58	1577	26	637
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	2	1	6
Permitted Phases	4	4	8	8	5	2	1	6
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%
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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min							
Act Effct Green (s)	10.8	10.8	10.8	10.8	50.6	45.5	50.6	45.5
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.66	0.59	0.66	0.59
v/c Ratio	0.33	0.33	0.53	0.12	0.84	0.13	0.33	0.33
Control Delay	30.0	30.0	36.9	4.1	17.4	4.9	8.4	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	30.0	36.9	4.1	17.4	4.9	8.4	8.4
LOS	C	C	D	A	B	A	A	A
Approach Delay	30.0	30.0	36.9	16.9	8.3			
Approach LOS	C	C	D	B	A			

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 76.9
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 16.0
 Intersection Capacity Utilization 64.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C



HCM 2010 Signalized Intersection Summary
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	
Volume (veh/h)	17	28	17	35	36	27	58	1577	18	26	637	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Cap, veh/h	94	100	50	116	78	49	617	2215	26	289	2188	49
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.07	0.62	0.62	0.07	0.62	0.62
Sat Flow, veh/h	301	928	466	471	722	459	1757	3548	41	1757	3504	79
Grp Volume(v), veh/h	80	0	0	126	0	0	63	845	889	27	332	347
Grp Sat Flow(s),veh/h/ln	1695	0	0	1652	0	0	1757	1752	1837	1757	1752	1831
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	0.9	26.1	26.2	0.4	6.5	6.5
Cycle Q Clear(g_c), s	3.2	0.0	0.0	5.3	0.0	0.0	0.9	26.1	26.2	0.4	6.5	6.5
Prop In Lane	0.27		0.27	0.36		0.28	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	244	0	0	243	0	0	617	1094	1147	289	1094	1143
V/C Ratio(X)	0.33	0.00	0.00	0.52	0.00	0.00	0.10	0.77	0.77	0.09	0.30	0.30
Avail Cap(c_a), veh/h	414	0	0	409	0	0	617	1270	1331	289	1270	1326
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	0.0	32.0	0.0	0.0	4.0	10.2	10.2	8.7	6.5	6.5
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.7	0.0	0.0	0.1	2.6	2.5	0.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.4	0.0	0.0	2.4	0.0	0.0	0.3	9.7	10.2	0.2	2.3	2.4
Lane Grp Delay (d), s/veh	31.9	0.0	0.0	33.7	0.0	0.0	4.1	12.8	12.7	8.9	6.6	6.6
Lane Grp LOS	C			C			A	B	B	A	A	A
Approach Vol, veh/h	80			126			1797			706		
Approach Delay, s/veh	31.9			33.7			12.4			6.7		
Approach LOS	C			C			B			A		

Timer

Assigned Phs	4	8	5	2	1	6
Phs Duration (G+Y+Rc), s	13.0	13.0	10.0	51.5	10.0	51.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	16.0	16.0	5.0	54.0	5.0	54.0
Max Q Clear Time (g_c+1t), s	5.2	7.3	2.9	28.2	2.4	8.5
Green Ext Time (p_c), s	0.8	0.7	0.0	18.3	0.0	26.4

Intersection Summary

HCM 2010 Ctrl Delay 12.5
 HCM 2010 LOS B

Notes

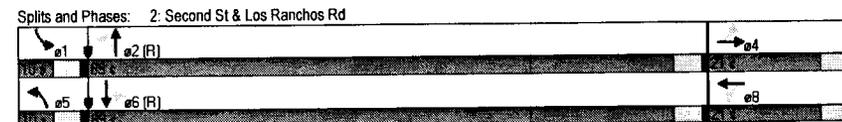
Timings

2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	+		+		↑		↑	
Volume (vph)	17	27	24	36	63	1727	29	694
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4		8		5		2	
Permitted Phases	4		8		5		2	
Detector Phase	4		8		5		2	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	89.0	10.0	89.0
Total Split (%)	17.5%	17.5%	17.5%	17.5%	8.3%	74.2%	8.3%	74.2%
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
Lost Time Adjust (s)	0.0		0.0		0.0		0.0	
Total Lost Time (s)	5.0		5.0		5.0		5.0	
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	C-Min	None	C-Min
Act Effct Green (s)	12.3	12.3	12.3	12.3	95.0	91.4	92.4	86.8
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.79	0.76	0.77	0.72
v/c Ratio	0.51	0.68	0.12	0.71	0.17	0.29		
Control Delay	51.6		63.1		2.2		7.5	
Queue Delay	0.0		0.0		0.0		0.0	
Total Delay	51.6		63.1		2.2		7.5	
LOS	D		E		A		A	
Approach Delay	51.6		63.1		7.3		5.2	
Approach LOS	D		E		A		A	

Intersection Summary
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 116 (97%), Referenced to phase 2-NBTL and 6-SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 10.2
 Intersection Capacity Utilization 67.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C



2023 PM Peak NOBUILD Conditions Existing Geometry
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HCM 2010 Signalized Intersection Summary
 2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	+		+		+		↑		↑		↑	
Volume (vph)	17	27	19	24	36	30	63	1727	14	29	694	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00											
Parking, Bus Adj	1.00											
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Capacity, veh/h	68	81	47	67	66	47	613	2738	22	224	2645	50
Arriving On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.75	0.75	0.03	0.73	0.73
Sat Flow, veh/h	452.5	536.8	505.8	402.4	505.9	503.0	1756.8	3654.5	29.6	1756.8	3609.8	67.6
Grp Volume(V), veh/h	80.8	0.0	0.0	115.4	0.0	0.0	68.5	946.3	946.1	30.2	369.4	367.1
Grp Sat Flow(s),veh/h/ln	1677.1	0.0	0.0	1508.9	0.0	0.0	1756.8	1844.7	1839.4	1756.8	1844.7	1832.7
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	1.0	30.3	30.4	0.5	7.7	7.7
Cycle Q Clear(g_c), s	4.9	0.0	0.0	8.2	0.0	0.0	1.0	30.3	30.4	0.5	7.7	7.7
Proportion In Lane	0.270		0.302	0.267		0.333	1.000		0.016	1.000		0.037
Lane Grp Cap(c), veh/h	195.8	0.0	0.0	180.1	0.0	0.0	612.9	1382.1	1378.2	224.3	1351.4	1342.6
V/C Ratio(X)	0.413	0.000	0.000	0.641	0.000	0.000	0.112	0.685	0.686	0.135	0.273	0.273
Avail Cap(c_a), veh/h	254.1	0.0	0.0	239.0	0.0	0.0	612.9	1382.1	1378.2	253.5	1351.4	1342.6
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.231	0.231	0.231	0.967	0.967	0.967
Uniform Delay (d), s/veh	49.4	0.0	0.0	50.6	0.0	0.0	3.0	7.4	7.4	7.4	5.1	5.1
Incr Delay (d2), s/veh	1.4	0.0	0.0	3.8	0.0	0.0	0.0	0.3	0.3	0.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	50.8	0.0	0.0	54.3	0.0	0.0	3.0	7.7	7.8	7.7	5.2	5.2
Lane Group LOS	D			D			A	A	A	A	A	A
Approach Volume, veh/h	81		115		1961		767					
Approach Delay, s/veh	50.8		54.3		7.6		5.3					
Approach LOS	D		D		A		A					

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	15.66	15.66	10.00	90.91	8.09	89.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00	16.00	5.00	84.00	5.00	84.00
Max Q Clear Time (g_c+1), s	6.94	10.18	2.96	32.45	2.48	9.68
Green Extension Time (p_c)	0.67	0.49	0.02	32.77	0.01	40.13

Intersection Summary
 HCM 2010 Control Delay 10.0
 HCM 2010 Level of Service B

2023 PM Peak NOBUILD Conditions Existing Geometry
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Timings
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔		↔		↑	↑	↑	↑
Volume (vph)	19	31	37	40	63	1732	29	700
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%
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
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0		5.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min							
Act Effct Green (s)	11.3	11.3	11.3	55.5	50.4	55.5	50.4	55.5
Actuated g/C Ratio	0.14	0.14	0.14	0.68	0.61	0.68	0.61	0.61
v/c Ratio	0.38	0.59	0.59	0.14	0.89	0.15	0.35	0.35
Control Delay	32.5		40.4	4.2	20.3	5.3	8.4	
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	32.5		40.4	4.2	20.3	5.3	8.4	
LOS	C		D	A	C	A	A	
Approach Delay	32.5		40.4		19.7		8.3	
Approach LOS	C		D		B		A	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 82	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Second St & Los Ranchos Rd

10 s	99 s	21 s
10 s	59 s	21 s

2023 PM Peak BUILD Conditions

Existing Geometry
D:\ATOBEP\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2023PBX.syn

HCM 2010 Signalized Intersection Summary
2: Second St & Los Ranchos Rd

Terry O. Brown, P.E.
1/25/2013 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↑	↑	↑	↑	↑	↑
Volume (veh/h)	19	31	19	37	40	30	63	1732	19	29	700	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Cap, veh/h	90	102	51	112	82	52	583	2261	25	254	2233	49
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.64	0.64	0.06	0.64	0.64
Sat Flow, veh/h	294	920	455	457	735	463	1757	3551	40	1757	3507	77
Grp Volume(v), veh/h	88	0	0	136	0	0	68	928	976	30	364	381
Grp Sat Flow(s), veh/h/ln	1669	0	0	1656	0	0	1757	1752	1838	1757	1752	1831
Q Serve(g_s), s	0.0	0.0	0.0	2.4	0.0	0.0	1.0	32.5	32.7	0.4	7.6	7.6
Cycle Q Clear(g_c), s	3.8	0.0	0.0	6.1	0.0	0.0	1.0	32.5	32.7	0.4	7.6	7.6
Prop In Lane	0.27		0.27	0.35		0.28	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	244	0	0	245	0	0	583	1116	1170	254	1116	1166
V/C Ratio(X)	0.36	0.00	0.00	0.55	0.00	0.00	0.12	0.83	0.83	0.12	0.33	0.33
Avail Cap(c_a), veh/h	386	0	0	385	0	0	583	1191	1249	254	1191	1245
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	0.0	0.0	34.0	0.0	0.0	4.1	11.1	11.2	11.4	6.6	6.6
Incr Delay (d2), s/veh	0.9	0.0	0.0	2.0	0.0	0.0	0.1	4.9	4.8	0.2	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.7	0.0	0.0	2.7	0.0	0.0	0.3	12.3	12.9	0.2	2.6	2.7
Lane Grp Delay (d), s/veh	33.9	0.0	0.0	36.0	0.0	0.0	4.2	16.0	16.0	11.6	6.8	6.8
Lane Grp LOS	C			D			A	B	B	B	A	A
Approach Vol, veh/h					136			1972				775
Approach Delay, s/veh					36.0			15.6				7.0
Approach LOS					C			D				A

Timer	
Assigned Phs	4 8 5 2 1 6
Phs Duration (G+Y+Rc), s	13.8 13.8 10.0 55.6 10.0 55.6
Change Period (Y+Rc), s	5.0 5.0 5.0 5.0 5.0 5.0
Max Green Setting (Gmax), s	16.0 16.0 5.0 54.0 5.0 54.0
Max Q Clear Time (g_c+1), s	5.8 8.1 3.0 34.7 2.4 9.6
Green Ext Time (p_c), s	0.8 0.7 0.0 15.9 0.0 30.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

2023 PM Peak BUILD Conditions

Existing Geometry
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Timings
3: Second St & Ranchitos Rd

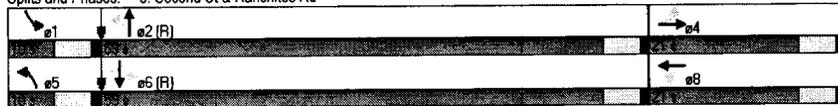
Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	25	38	6	21	61	519	40	1618	73
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		4		8	5	2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%	65.6%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)		12.2		12.2	63.0	57.3	62.7	57.2	57.2
Actuated g/C Ratio		0.14		0.14	0.70	0.64	0.70	0.64	0.64
v/c Ratio		0.74		0.20	0.38	0.28	0.07	0.79	0.08
Control Delay		38.0		30.7	21.3	6.8	4.0	16.2	1.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.0		30.7	21.3	6.8	4.0	16.2	1.8
LOS		D		C	C	A	A	B	A
Approach Delay		38.0		30.7		6.3		15.3	
Approach LOS		D		C		A		B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 83 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 15.5 Intersection LOS: B
 Intersection Capacity Utilization 71.5% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Second St & Ranchitos Rd



2013 AM Peak NOBUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔		↔	↔	↔
Volume (vph)	25	38	107	6	21	5	61	519	7	40	1618	73
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	69	68	153	76	213	45	239	2217	30	665	2140	957
Arriving On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.11	1.00	1.00	0.06	0.61	0.61
Sat Flow, veh/h	218.5	311.7	935.3	327.5	896.6	272.9	1756.8	3631.7	49.0	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	212.5	0.0	0.0	42.7	0.0	0.0	71.8	310.0	308.8	43.5	1758.7	79.3
Grp Sat Flow(s),veh/h/ln	1486.0	0.0	0.0	1746.8	0.0	0.0	1756.8	1844.7	1836.0	1756.8	1752.4	1568.0
Q Serve(g_s), s	7.2	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.7	34.7	1.8
Cycle Q Clear(g_c), s	12.2	0.0	0.0	1.8	0.0	0.0	1.2	0.0	0.0	0.7	34.7	1.8
Proportion In Lane	0.147		0.629	0.187			0.156	1.000		0.027	1.000	
Lane Grp Cap(c), veh/h	289.4	0.0	0.0	333.6	0.0	0.0	239.4	1126.3	1121.0	665.2	2139.9	957.3
V/C Ratio(X)	0.734	0.000	0.000	0.128	0.000	0.000	0.300	0.275	0.275	0.065	0.822	0.083
Avail Cap(c_a), veh/h	313.9	0.0	0.0	357.6	0.0	0.0	239.4	1126.3	1121.0	665.2	2139.9	957.3
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.969	0.969	0.969	1.000	1.000	1.000
Uniform Delay (d), s/veh	35.5	0.0	0.0	31.7	0.0	0.0	13.3	0.0	0.0	5.0	13.5	7.1
Incr Delay (d2), s/veh	8.0	0.0	0.0	0.2	0.0	0.0	0.7	0.1	0.1	0.0	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	43.5	0.0	0.0	31.9	0.0	0.0	14.0	0.1	0.1	5.1	16.2	7.1
Lane Group LOS	D			C			B	A	A	A	B	A
Approach Volume, veh/h		212			43		691				1882	
Approach Delay, s/veh		43.5			31.9		1.6				15.5	
Approach LOS		D			C		A				B	

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	19.44	19.44	10.00	59.00	10.00	59.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00	16.00	5.00	54.00	5.00	54.00
Max Q Clear Time (g_c+1), s	14.19	3.80	3.23	2.00	2.75	36.69
Green Extension Time (p_c)	0.26	1.16	0.02	33.91	0.01	14.57

Intersection Summary

HCM 2010 Control Delay	14.5
HCM 2010 Level of Service	B

2013 AM Peak NOBUILD Conditions

Existing Geometry
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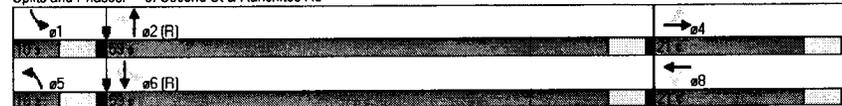
Timings
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		⇄	⇄	⇄	⇄	⇄	⇄	⇄	⇄
Volume (vph)	25	38	9	21	63	521	40	1621	73
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		4		8	5	2	1	6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%	65.6%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min
Act Effct Green (s)		12.2		12.2	62.9	57.3	62.6	57.1	57.1
Actuated g/C Ratio		0.14		0.14	0.70	0.84	0.70	0.63	0.63
v/c Ratio		0.75		0.24	0.39	0.28	0.08	0.79	0.08
Control Delay		38.0		32.0	21.3	7.6	4.0	16.2	1.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.0		32.0	21.3	7.6	4.0	16.2	1.8
LOS		D		C	C	A	A	B	A
Approach Delay		38.0		32.0		9.0		15.4	
Approach LOS		D		C		A		B	

Intersection Summary	
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	76 (84%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	15.8
Intersection Capacity Utilization:	72.3%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	C

Splits and Phases: 3: Second St & Ranchitos Rd



2013 AM Peak BUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇄		⇄	⇄		⇄	⇄		⇄	⇄	⇄
Volume (vph)	25	38	109	9	21	5	63	521	9	40	1621	73
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	68	68	155	98	199	41	238	2204	38	662	2136	956
Arriving On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.11	1.00	1.00	0.06	0.61	0.61
Sat Flow, veh/h	216.1	308.3	942.0	447.0	753.6	248.3	1756.8	3615.9	62.4	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	215.0	0.0	0.0	46.7	0.0	0.0	74.1	312.6	311.0	43.5	1762.0	79.3
Grp Sat Flow(s),veh/h/n	1486.5	0.0	0.0	1738.2	0.0	0.0	1756.8	1844.7	1833.6	1756.8	1752.4	1568.0
Q Serve(g, s), s	7.3	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.8	35.0	1.8
Cycle Q Clear(g_c), s	12.4	0.0	0.0	2.0	0.0	0.0	1.3	0.0	0.0	0.8	35.0	1.8
Proportion in Lane	0.145		0.634	0.257		0.143	1.000		0.034	1.000		1.000
Lane Grp Cap(c), veh/h	291.4	0.0	0.0	337.5	0.0	0.0	237.9	1124.3	1117.6	662.0	2136.2	955.7
V/C Ratio(X)	0.738	0.000	0.000	0.138	0.000	0.000	0.311	0.278	0.278	0.066	0.825	0.083
Avail Cap(c_a), veh/h	313.5	0.0	0.0	357.4	0.0	0.0	237.9	1124.3	1117.6	662.0	2136.2	955.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	35.5	0.0	0.0	31.7	0.0	0.0	13.6	0.0	0.0	5.1	13.6	7.1
Incr Delay (d2), s/veh	8.2	0.0	0.0	0.2	0.0	0.0	0.7	0.1	0.1	0.0	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	43.8	0.0	0.0	31.9	0.0	0.0	14.4	0.1	0.1	5.1	16.4	7.2
Lane Group LOS	D			C			B	A	A	A	B	A
Approach Volume, veh/h		215			47		698				1885	
Approach Delay, s/veh		43.8			31.9		1.6				15.7	
Approach LOS		D			C		A				B	

Timer	
Assigned Phase	4 8 5 2 1 6
Phase Duration (G+Y+Rc), s	19.60 19.60 10.00 59.00 10.00 59.00
Change Period (Y+Rc), s	5.00 5.00 5.00 5.00 5.00 5.00
Max Green Setting (Gmax), s	16.00 16.00 5.00 54.00 5.00 54.00
Max Q Clear Time (g_c+1), s	14.35 3.97 3.28 2.00 2.75 36.98
Green Extension Time (p_c)	0.24 1.19 0.02 34.05 0.01 14.38

Intersection Summary	
HCM 2010 Control Delay	14.7
HCM 2010 Level of Service	B

2013 AM Peak BUILD Conditions

Existing Geometry
D:\ATOB\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2013ABX.syn

Timings
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

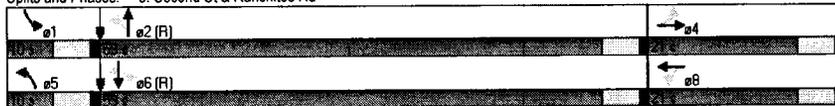
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	28	42	7	23	68	581	44	1778	80
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		4		8	5	2	1	6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%	65.6%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min
Act Effct Green (s)		13.0		13.0	62.2	56.5	61.9	56.4	56.4
Actuated g/C Ratio		0.14		0.14	0.69	0.63	0.69	0.63	0.63
v/c Ratio		0.78		0.21	0.42	0.32	0.09	0.88	0.09
Control Delay		42.0		30.4	22.4	7.9	4.2	21.0	2.0
Queue Delay		0.1		0.0	0.0	0.0	0.0	0.5	0.0
Total Delay		42.0		30.4	22.4	7.9	4.2	21.5	2.0
LOS		D		C	C	A	A	C	A
Approach Delay		42.0		30.4		9.4		20.3	
Approach LOS		D		C		A		C	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 76 (84%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 19.4
Intersection Capacity Utilization 78.5%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service D

Splits and Phases: 3: Second St & Ranchitos Rd



HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔		↔	↔	↔
Volume (vph)	28	42	118	7	23	6	68	581	8	44	1778	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	71	73	164	82	225	52	203	2182	30	623	2106	942
Arriving On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.11	1.00	1.00	0.06	0.60	0.60
Sat Flow, veh/h	220.3	310.7	928.5	341.9	859.1	293.0	1756.8	3630.5	50.0	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	235.0	0.0	0.0	48.0	0.0	0.0	80.0	347.2	345.7	47.8	1932.6	87.0
Grp Sat Flow(s),veh/h/ln	1479.2	0.0	0.0	1758.1	0.0	0.0	1756.8	1844.7	1835.8	1756.8	1752.4	1568.0
Q Serve(g_s), s	9.6	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.9	44.1	2.1
Cycle Q Clear(g_c), s	13.8	0.0	0.0	2.0	0.0	0.0	1.5	0.0	0.0	0.9	44.1	2.1
Proportion In Lane	0.149		0.628	0.194		0.167	1.000		0.027	1.000		1.000
Lane Grp Cap(c), veh/h	307.1	0.0	0.0	358.2	0.0	0.0	202.9	1108.5	1103.2	623.0	2106.2	942.2
V/C Ratio(X)	0.765	0.000	0.000	0.134	0.000	0.000	0.394	0.313	0.313	0.077	0.918	0.092
Avail Cap(c_a), veh/h	309.3	0.0	0.0	360.3	0.0	0.0	202.9	1108.5	1103.2	623.0	2106.2	942.2
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.960	0.960	0.960	1.000	1.000	1.000
Uniform Delay (d), s/veh	35.3	0.0	0.0	31.3	0.0	0.0	18.9	0.0	0.0	5.4	16.0	7.6
Incr Delay (d2), s/veh	10.8	0.0	0.0	0.2	0.0	0.0	1.2	0.2	0.2	0.1	7.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	46.1	0.0	0.0	31.5	0.0	0.0	20.1	0.2	0.2	5.5	22.9	7.6
Lane Group LOS	D			C			C	A	A	A	C	A
Approach Volume, veh/h		235			48		773				2067	
Approach Delay, s/veh		46.1			31.5		2.2				21.9	
Approach LOS		D			C		A				C	

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	20.86		20.86	10.00	59.00	10.00
Change Period (Y+Rc), s	5.00		5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00		16.00	5.00	54.00	5.00
Max Q Clear Time (g_c+1), s	15.83		4.04	3.46	2.00	2.86
Green Extension Time (p_c)	0.03		1.31	0.02	38.47	0.01

Intersection Summary

HCM 2010 Control Delay: 19.0
HCM 2010 Level of Service: B

2023 AM Peak NOBUILD Conditions

Existing Geometry
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2023 AM Peak NOBUILD Conditions

Existing Geometry
D:\ATOB\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2023\ANX.syn

Timings

3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	28	42	10	23	70	583	44	1781	80
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		4		8	5	2	1	6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	59.0	10.0	59.0	59.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	11.1%	65.6%	11.1%	65.6%	65.6%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min
Act Effct Green (s)		13.0		13.0	62.1	56.5	61.8	56.3	56.3
Actuated g/C Ratio		0.14		0.14	0.69	0.63	0.69	0.63	0.63
v/c Ratio		0.79		0.25	0.43	0.32	0.09	0.88	0.09
Control Delay		42.1		31.6	22.6	7.9	4.2	21.2	2.0
Queue Delay		0.1		0.0	0.0	0.0	0.0	0.5	0.0
Total Delay		42.1		31.6	22.6	7.9	4.2	21.7	2.0
LOS		D		C	C	A	A	C	A
Approach Delay		42.1		31.6		9.5		20.5	
Approach LOS		D		C		A		C	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 80 (89%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 19.6 Intersection LOS: B
 Intersection Capacity Utilization 78.8% ICU Level of Service D
 Analysis Period (min) 15



HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔	↔
Volume (vph)	28	42	120	10	23	6	70	583	10	44	1781	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	70	72	166	103	211	48	202	2170	37	620	2103	941
Arriving On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.11	1.00	1.00	0.06	0.60	0.60
Sat Flow, veh/h	218.0	307.6	934.5	449.8	735.2	269.9	1756.8	3616.4	62.0	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	237.5	0.0	0.0	52.0	0.0	0.0	82.4	349.8	347.9	47.8	1935.9	87.0
Grp Sat Flow(s),veh/h/ln	1479.6	0.0	0.0	1754.2	0.0	0.0	1756.8	1844.7	1833.7	1756.8	1752.4	1568.0
Q Serve(g, s), s	8.8	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.9	44.4	2.1
Cycle Q Clear(g_c), s	14.0	0.0	0.0	2.2	0.0	0.0	1.5	0.0	0.0	0.9	44.4	2.1
Proportion in Lane	0.147		0.632	0.256		0.154	1.000		0.034	1.000		1.000
Lane Grp Cap(c), veh/h	308.9	0.0	0.0	362.1	0.0	0.0	201.7	1106.8	1100.2	620.1	2102.9	940.8
V/C Ratio(X)	0.769	0.000	0.000	0.144	0.000	0.000	0.408	0.316	0.316	0.077	0.921	0.092
Avail Cap(c_a), veh/h	308.9	0.0	0.0	362.1	0.0	0.0	201.7	1106.8	1100.2	620.1	2102.9	940.8
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	35.3	0.0	0.0	31.3	0.0	0.0	19.1	0.0	0.0	5.5	16.1	7.6
Incr Delay (d2), s/veh	11.2	0.0	0.0	0.2	0.0	0.0	1.3	0.2	0.2	0.1	7.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	46.5	0.0	0.0	31.5	0.0	0.0	20.4	0.2	0.2	5.5	23.3	7.7
Lane Group LOS	D			C			C	A	A	A	C	A
Approach Volume, veh/h		238			52		780			2071		
Approach Delay, s/veh		46.5			31.5		2.3			22.2		
Approach LOS		D			C		A			C		

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	21.00	21.00	10.00	59.00	10.00	59.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00	16.00	5.00	54.00	5.00	54.00
Max Q Clear Time (g_c+1), s	16.01	4.21	3.51	2.00	2.87	46.42
Green Extension Time (p_c)	0.00	1.34	0.02	38.59	0.01	7.11

Intersection Summary

HCM 2010 Control Delay: 19.3
 HCM 2010 Level of Service: B

2023 AM Peak BUILD Conditions

Existing Geometry
D:\AT0BE\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2023ABX.syn

Timings
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

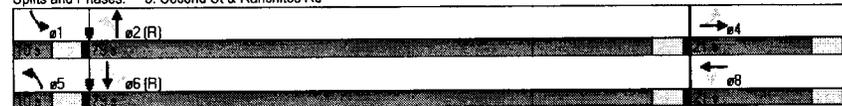
	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		↕		↕	↕	↕	↕	↕	↕
Volume (vph)	17	13	8	27	63	1520	14	613	30
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		4		8	5	2	1	6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	79.0	10.0	79.0	79.0
Total Split (%)	19.1%	19.1%	19.1%	19.1%	9.1%	71.8%	9.1%	71.8%	71.8%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0		5.0		5.0		5.0
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min
Act Effct Green (s)	9.2		9.2		86.4	80.1	85.1	79.4	79.4
Actuated g/C Ratio	0.08		0.08		0.79	0.73	0.77	0.72	0.72
v/c Ratio	0.55		0.52		0.12	0.70	0.08	0.27	0.03
Control Delay	37.5		42.2		0.9	4.3	3.1	5.9	0.2
Queue Delay	0.0		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	37.5		42.2		0.9	4.3	3.1	5.9	0.2
LOS	D		D		A	A	A	A	A
Approach Delay	37.5		42.2		4.2		5.6		
Approach LOS	D		D		A		A		

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 6.8
 Intersection Capacity Utilization 65.9%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 3: Second St & Ranchitos Rd



HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	17	13	37	8	27	29	63	1520	9	14	613	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	66	31	66	49	59	56	653	2668	16	349	2552	1142
Arriving On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.10	1.00	1.00	0.05	0.73	0.73
Sat Flow, veh/h	400.9	241.9	872.5	207.2	613.2	750.9	1756.8	3663.8	21.7	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	89.3	0.0	0.0	85.3	0.0	0.0	73.3	889.2	888.7	15.6	681.1	33.3
Grp Sat Flow(s),veh/h/ln	1579.9	0.0	0.0	1657.2	0.0	0.0	1756.8	1844.7	1840.8	1756.8	1752.4	1568.0
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.2	6.7	0.6
Cycle Q Clear(g_c), s	5.1	0.0	0.0	4.8	0.0	0.0	1.0	0.0	0.0	0.2	6.7	0.6
Proportion In Lane	0.254		0.552	0.125		0.453	1.000		0.012	1.000		1.000
Lane Grp Cap(c), veh/h	163.1	0.0	0.0	164.3	0.0	0.0	653.4	1343.1	1340.3	349.3	2551.9	1141.6
V/C Ratio(X)	0.548	0.000	0.000	0.519	0.000	0.000	0.112	0.662	0.663	0.045	0.267	0.029
Avail Cap(c_a), veh/h	265.7	0.0	0.0	284.0	0.0	0.0	653.4	1343.1	1340.3	349.3	2551.9	1141.6
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.706	0.706	0.706	1.000	1.000	1.000
Uniform Delay (d), s/veh	45.8	0.0	0.0	45.7	0.0	0.0	2.7	0.0	0.0	2.5	4.7	3.8
Incr Delay (d2), s/veh	2.8	0.0	0.0	2.5	0.0	0.0	0.1	0.9	0.9	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	48.6	0.0	0.0	48.3	0.0	0.0	2.8	0.9	0.9	2.6	4.7	3.8
Lane Group LOS	D		D		D		A	A	A	A	A	A
Approach Volume, veh/h	89		85		1851		730		730		730	
Approach Delay, s/veh	48.6		48.3		0.9		4.6		4.6		4.6	
Approach LOS	D		D		A		A		A		A	

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	12.64		12.64		10.00	79.00
Change Period (Y+Rc), s	5.00		5.00		5.00	5.00
Max Green Setting (Gmax), s	16.00		16.00		5.00	74.00
Max Q Clear Time (g_c+1), s	7.06		6.80		2.98	2.00
Green Extension Time (p_c)	0.58		0.59		0.02	42.20

Intersection Summary

HCM 2010 Control Delay: 4.9
 HCM 2010 Level of Service: A

2013 PM Peak NOBUILD Conditions

Existing Geometry
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2013 PM Peak NOBUILD Conditions

Existing Geometry
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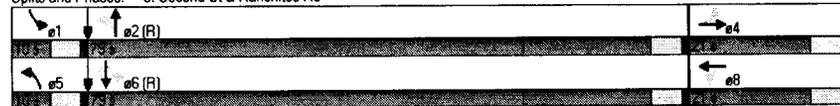
Timings
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	17	13	13	27	66	1525	14	618	30
Turn Type	Perm	NA	Perm	NA	pm-pt	NA	pm-pt	NA	Perm
Protected Phases	4	4	8	8	5	2	1	6	6
Permitted Phases	4	4	8	8	5	2	1	6	6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	79.0	10.0	79.0	79.0
Total Split (%)	19.1%	19.1%	19.1%	19.1%	9.1%	71.8%	9.1%	71.8%	71.8%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min	
Act Effect Green (s)		9.8		9.8	85.8	79.5	84.6	78.9	78.9
Actuated g/C Ratio		0.09		0.09	0.78	0.72	0.77	0.72	0.72
v/c Ratio		0.54		0.56	0.13	0.71	0.08	0.27	0.03
Control Delay		35.2		46.2	1.1	4.4	3.3	6.1	0.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		35.2		46.2	1.1	4.4	3.3	6.1	0.2
LOS		D		D	A	A	A	A	A
Approach Delay		35.2		46.2		4.3		5.8	
Approach LOS		D		D		A		A	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Second St & Ranchitos Rd



2013 PM Peak BUILD Conditions

Existing Geometry
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HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	17	13	40	13	27	29	66	1525	14	14	618	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	0	1	0	1	2	0	1	2
Capacity, veh/h	65	31	70	58	58	53	648	2651	24	346	2546	1139
Arriving On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.10	1.00	1.00	0.05	0.73	0.73
Sat Flow, veh/h	386.9	233.2	910.3	309.2	530.6	689.8	1756.8	3649.9	33.5	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	93.3	0.0	0.0	92.0	0.0	0.0	76.7	895.2	894.3	15.6	686.7	33.3
Grp Sat Flow(s), veh/h/in	1593.1	0.0	0.0	1641.1	0.0	0.0	1756.8	1844.7	1838.8	1756.8	1752.4	1568.0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.2	6.8	0.6
Cycle Q Clear(g_c), s	5.3	0.0	0.0	5.1	0.0	0.0	1.0	0.0	0.0	0.2	6.8	0.6
Proportion In Lane	0.243		0.571	0.188		0.420	1.000		0.018	1.000		1.000
Lane Grp Cap(c), veh/h	167.1	0.0	0.0	168.9	0.0	0.0	648.4	1339.9	1335.6	346.3	2545.8	1138.9
V/C Ratio(X)	0.559	0.000	0.000	0.545	0.000	0.000	0.118	0.668	0.670	0.045	0.270	0.029
Avail Cap(c_a), veh/h	267.2	0.0	0.0	277.0	0.0	0.0	648.4	1339.9	1335.6	346.3	2545.8	1138.9
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	45.8	0.0	0.0	45.8	0.0	0.0	2.8	0.0	0.0	2.6	4.7	3.9
Incr Delay (d2), s/veh	2.9	0.0	0.0	2.7	0.0	0.0	0.1	1.3	1.3	0.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	48.7	0.0	0.0	48.5	0.0	0.0	2.9	1.3	1.3	2.6	4.8	3.9
Lane Group LOS	D			D			A	A	A	A	A	A
Approach Volume, veh/h		93			92			1866				736
Approach Delay, s/veh		48.7			48.5			1.4				4.7
Approach LOS		D			D			A				A

Timer	
Assigned Phase	4 8 5 2 1 6
Phase Duration (G+Y+Rc), s	12.88 12.88 10.00 79.00 10.00 79.00
Change Period (Y+Rc), s	5.00 5.00 5.00 5.00 5.00 5.00
Max Green Setting (Gmax), s	16.00 16.00 5.00 74.00 5.00 74.00
Max Q Clear Time (g_c+1), s	7.26 7.12 3.04 2.00 2.20 8.79
Green Extension Time (p_c)	0.62 0.62 0.02 42.75 0.00 40.38

Intersection Summary	
HCM 2010 Control Delay	5.4
HCM 2010 Level of Service	A

2013 PM Peak BUILD Conditions

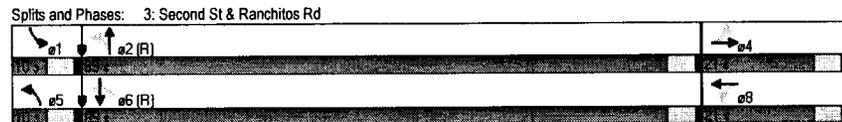
Existing Geometry
D:\ATOBEP\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2013PBX.syn

Timings
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		↕		↕	↗	↗	↖	↖	↖
Volume (vph)	19	14	9	30	70	1700	16	674	33
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	8	8	5	2	1	6	6
Permitted Phases	4	4	8	8	5	2	1	6	6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	89.0	10.0	89.0	89.0
Total Split (%)	17.5%	17.5%	17.5%	17.5%	8.3%	74.2%	8.3%	74.2%	74.2%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min
Act Effct Green (s)	10.3	10.3	10.3	95.2	89.1	94.2	88.6	88.6	88.6
Actuated g/C Ratio	0.09	0.09	0.09	0.79	0.74	0.78	0.74	0.74	0.74
v/c Ratio	0.64	0.58	0.14	0.77	0.11	0.29	0.03	0.03	0.03
Control Delay	49.4	50.2	1.4	5.4	3.8	5.9	0.5	0.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	50.2	1.4	5.4	3.8	5.9	0.5	0.5	0.5
LOS	D	D	A	A	A	A	A	A	A
Approach Delay	49.4	50.2	5.2	5.6	A	A	A	A	A
Approach LOS	D	D	A	A	A	A	A	A	A

Intersection Summary
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 119 (99%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 8.1
 Intersection Capacity Utilization 71.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C



HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↗	↗	↖	↖	↖
Volume (vph)	19	14	41	9	30	32	70	1700	10	16	674	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	64	32	69	46	62	59	617	2729	16	302	2610	1168
Arriving On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.09	1.00	1.00	0.04	0.74	0.74
Sat Flow, veh/h	412.2	234.5	889.4	212.1	612.2	754.0	1756.8	3664.0	21.5	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	98.7	0.0	0.0	94.7	0.0	0.0	81.4	994.2	994.2	17.8	748.9	36.7
Grp Sat Flow(s),veh/h/m	1605.3	0.0	0.0	1672.9	0.0	0.0	1756.8	1844.7	1840.9	1756.8	1752.4	1568.0
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.2	7.8	0.7
Cycle Q Clear(g_c), s	6.2	0.0	0.0	5.9	0.0	0.0	1.2	0.0	0.0	0.2	7.8	0.7
Proportion In Lane	0.257		0.554	0.127		0.451	1.000		0.012	1.000		1.000
Lane Grp Cap(c), veh/h	165.1	0.0	0.0	166.2	0.0	0.0	616.7	1373.9	1371.1	301.7	2610.4	1167.8
V/C Ratio(X)	0.598	0.000	0.000	0.570	0.000	0.000	0.132	0.724	0.725	0.059	0.287	0.031
Avail Cap(c_a), veh/h	244.4	0.0	0.0	259.0	0.0	0.0	616.7	1373.9	1371.1	301.7	2610.4	1167.8
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	0.637	0.637	0.637	1.000	1.000	1.000
Uniform Delay (d), s/veh	50.8	0.0	0.0	50.7	0.0	0.0	2.8	0.0	0.0	2.5	4.7	3.8
Incr Delay (d2), s/veh	3.4	0.0	0.0	3.0	0.0	0.0	0.1	1.2	1.2	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	54.2	0.0	0.0	53.8	0.0	0.0	2.9	1.2	1.2	2.6	4.7	3.8
Lane Group LOS	D			D			A	A	A	A	A	A
Approach Volume, veh/h		99			95			2070				803
Approach Delay, s/veh		54.2			53.8			1.3				4.6
Approach LOS		D			D			A				A

Timing

Assigned Phase	4		8		5	2		1	6
Phase Duration (G+Y+Rc), s	13.78		13.78		10.00	89.00		10.00	89.00
Change Period (Y+Rc), s	5.00		5.00		5.00	5.00		5.00	5.00
Max Green Setting (Gmax), s	16.00		16.00		5.00	84.00		5.00	84.00
Max Q Clear Time (g_c+I1), s	8.18		7.90		3.16	2.00		2.24	9.82
Green Extension Time (p_c)	0.60		0.62		0.02	55.57		0.00	51.96

Intersection Summary
 HCM 2010 Control Delay 5.5
 HCM 2010 Level of Service A

Timings
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

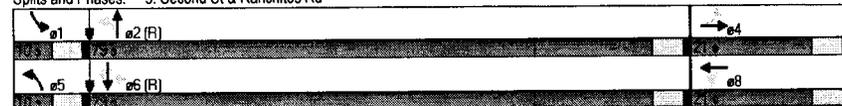
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↕	↔	↕	↕
Volume (vph)	19	14	14	30	73	1705	16	679	33
Turn Type	Perm	NA	Perm	NA	pm-pt	NA	pm-pt	NA	Perm
Protected Phases	4	4	8	8	5	2	1	6	6
Permitted Phases	4	4	8	8	5	2	1	6	6
Detector Phase	4	4	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	10.0	79.0	10.0	79.0	79.0
Total Split (%)	19.1%	19.1%	19.1%	19.1%	9.1%	71.8%	9.1%	71.8%	71.8%
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min	C-Min
Act Effect Green (s)	10.4	10.4	10.4	10.4	85.1	78.9	84.1	78.4	78.4
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.77	0.72	0.76	0.71	0.71
v/c Ratio	0.58	0.60	0.15	0.80	0.11	0.30	0.03		
Control Delay	38.3	48.5	1.9	7.4	4.2	6.5	0.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	38.3	48.5	1.9	7.4	4.2	6.5	0.5		
LOS	D	D	A	A	A	A	A		
Approach Delay	38.3	48.5	7.2	6.2					
Approach LOS	D	D	A	A					

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 71.0%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 3: Second St & Ranchitos Rd



2023 PM Peak BUILD Conditions

Existing Geometry
 D:\ATOB\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2023PBX.syn

HCM 2010 Signalized Intersection Summary
3: Second St & Ranchitos Rd

Terry O. Brown, P.E.
11/1/2012 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕		↕	↕	↕
Volume (vph)	19	14	44	14	30	32	73	1705	15	16	679	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	0	1	0	0	1	0	1	2	0	1	2	1
Capacity, veh/h	68	33	76	58	62	57	608	2637	23	309	2531	1132
Arriving On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.10	1.00	1.00	0.05	0.72	0.72
Sat Flow, veh/h	395.5	226.8	915.9	304.0	536.6	694.8	1756.8	3651.6	32.1	1756.8	1568.0	1568.0
Grp Volume(v), veh/h	102.7	0.0	0.0	101.3	0.0	0.0	84.9	1000.0	1000.0	17.8	754.4	36.7
Grp Sat Flow(s), veh/h/in	1602.8	0.0	0.0	1650.2	0.0	0.0	1756.8	1844.7	1839.0	1756.8	1752.4	1568.0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.2	7.8	0.7
Cycle Q Clear(g_c), s	5.8	0.0	0.0	5.7	0.0	0.0	1.2	0.0	0.0	0.2	7.8	0.7
Proportion In Lane	0.247		0.571	0.184		0.421	1.000		0.017	1.000		1.000
Lane Grp Cap(c), veh/h	176.3	0.0	0.0	178.0	0.0	0.0	607.8	1332.1	1328.0	309.3	2531.1	1132.3
V/C Ratio(X)	0.582	0.000	0.000	0.569	0.000	0.000	0.140	0.751	0.753	0.057	0.298	0.032
Avail Cap(c_a), veh/h	268.0	0.0	0.0	277.9	0.0	0.0	607.8	1332.1	1328.0	309.3	2531.1	1132.3
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	45.8	0.0	0.0	45.8	0.0	0.0	3.0	0.0	0.0	2.7	5.0	4.0
Incr Delay (d2), s/veh	3.0	0.0	0.0	2.8	0.0	0.0	0.1	2.4	2.5	0.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	48.8	0.0	0.0	48.6	0.0	0.0	3.1	2.4	2.5	2.8	5.1	4.1
Lane Group LOS	D			D			A	A	A	A	A	A
Approach Volume, veh/h	103			101			2085			809		
Approach Delay, s/veh	48.8			48.6			2.5			5.0		
Approach LOS	D			D			A			A		

Timer

Assigned Phase	4	8	5	2	1	6
Phase Duration (G+Y+Rc), s	13.47	13.47	10.00	79.00	10.00	79.00
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00
Max Green Setting (Gmax), s	16.00	16.00	5.00	74.00	5.00	74.00
Max Q Clear Time (g_c+I), s	7.80	7.67	3.19	2.00	2.24	9.81
Green Extension Time (p_c)	0.67	0.68	0.03	51.41	0.00	47.36

Intersection Summary

HCM 2010 Control Delay	6.2
HCM 2010 Level of Service	A

2023 PM Peak BUILD Conditions

Existing Geometry
 D:\ATOB\PROJECTS_2012\Family_Dollar_Store_Albuquerque\Synchro\2023PBX.syn

Intersection	
Intersection Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	7	614	7	13	1637
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		115	400	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	8	698	8	15	1860
Number of Lanes	1	0	2	1	1	2

Major/Minor	Major 1		Major 2			
Conflicting Flow All	1658	349	0	0	698	0
Stage 1	698	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Follow-up Headway	3.53	3.33	-	-	2.23	-
Pot Capacity-1 Maneuver	88	644	-	-	888	-
Stage 1	452	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	87	644	-	-	888	-
Mov Capacity-2 Maneuver	87	-	-	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	324	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.1
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	644	888	-
HCM Control Delay, s	-	-	10.7	9.123	-
HCM Lane V/C Ratio	-	-	0.01	0.02	-
HCM Lane LOS	-	-	B	A	-
HCM 95th-tile Q, veh	-	-	0.0	0.1	-

Notes
 - : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	18	1606	12	15	668
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		115	400	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	21	1673	13	16	696
Number of Lanes	1	0	2	1	1	2

Major/Minor			Major 1		Major 2	
Conflicting Flow All	2052	836	0	0	1673	0
Stage 1	1673	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Follow-up Headway	3.53	3.33	-	-	2.23	-
Pot Capacity-1 Maneuver	47	308	-	-	375	-
Stage 1	136	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	45	308	-	-	375	-
Mov Capacity-2 Maneuver	45	-	-	-	-	-
Stage 1	136	-	-	-	-	-
Stage 2	631	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.3
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	308	375	-
HCM Control Delay, s	-	-	17.6	15.017	-
HCM Lane V/C Ratio	-	-	0.07	0.04	-
HCM Lane LOS	-	-	C	C	-
HCM 95th-tile Q, veh	-	-	0.2	0.1	-

Notes
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	7	675	7	13	1800
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		115	400	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	8	767	8	15	2045
Number of Lanes	1	0	2	1	1	2

Major/Minor			Major 1		Major 2	
Conflicting Flow All	1819	384	0	0	767	0
Stage 1	767	-	-	-	-	-
Stage 2	1052	-	-	-	-	-
Follow-up Headway	3.53	3.33	-	-	2.23	-
Pot Capacity-1 Maneuver	68	611	-	-	836	-
Stage 1	416	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	67	611	-	-	836	-
Mov Capacity-2 Maneuver	67	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.1
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	611	836	-
HCM Control Delay, s	-	-	11	9.384	-
HCM Lane V/C Ratio	-	-	0.01	0.02	-
HCM Lane LOS	-	-	B	A	-
HCM 95th-tile Q, veh	-	-	0.0	0.1	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	18	1765	12	15	734
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		115	400	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	21	1839	13	16	765
Number of Lanes	1	0	2	1	1	2

Major/Minor			Major 1		Major 2	
Conflicting Flow All	2253	919	0	0	1839	0
Stage 1	1839	-	-	-	-	-
Stage 2	414	-	-	-	-	-
Follow-up Headway	3.53	3.33	-	-	2.23	-
Pot Capacity-1 Maneuver	35	272	-	-	323	-
Stage 1	110	-	-	-	-	-
Stage 2	632	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	33	272	-	-	323	-
Mov Capacity-2 Maneuver	33	-	-	-	-	-
Stage 1	110	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.4	0	0.3
HCM LOS	C	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	272	323	-
HCM Control Delay, s	-	-	19.4	16.711	-
HCM Lane V/C Ratio	-	-	0.08	0.05	-
HCM Lane LOS	-	-	C	C	-
HCM 95th-tile Q, veh	-	-	0.3	0.2	-

Notes
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	109	44	1	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	138	56	1	1	13
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	57	0	-	0	212	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	156	-
Follow-up Headway	2.227	-	-	-	3.527	3.327
Pot Capacity-1 Maneuver	1541	-	-	-	774	1008
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	870	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1541	-	-	-	769	1008
Mov Capacity-2 Maneuver	-	-	-	-	769	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	865	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.7
HCM LOS	-	-	A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1541	-	-	-	983
HCM Control Delay, s	7.35	0	-	-	8.7
HCM Lane V/C Ratio	0.01	-	-	-	0.01
HCM Lane LOS	A	A	-	-	A
HCM 95th-tile Q, veh	0.0	-	-	-	0.0

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	9	64	82	1	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	82	105	1	1	22
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1	Major 2				
Conflicting Flow All	106	0	-	0	211	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	105	-
Follow-up Headway	2.227	-	-	-	3.527	3.327
Pot Capacity-1 Maneuver	1479	-	-	-	775	946
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	917	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1479	-	-	-	768	946
Mov Capacity-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9
HCM LOS	-	-	A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1479	-	-	-	935
HCM Control Delay, s	7.453	0	-	-	9
HCM Lane V/C Ratio	0.01	-	-	-	0.03
HCM Lane LOS	A	A	-	-	A
HCM 95th-tile Q, veh	0.0	-	-	-	0.1

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	7	120	49	1	1	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	152	62	1	1	13
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	63	0	-	0	233	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	170	-
Follow-up Headway	2.227	-	-	-	3.527	3.327
Pot Capacity-1 Maneuver	1533	-	-	-	753	999
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	857	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1533	-	-	-	748	999
Mov Capacity-2 Maneuver	-	-	-	-	748	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	8.8
HCM LOS	-	-	A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1533	-	-	-	972
HCM Control Delay, s	7.362	0	-	-	8.8
HCM Lane V/C Ratio	0.01	-	-	-	0.01
HCM Lane LOS	A	A	-	-	A
HCM 95th-tile Q, veh	0.0	-	-	-	0.0

Notes
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	9	70	90	1	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.85	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	90	115	1	1	22
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	117	0	-	0	229	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	113	-
Follow-up Headway	2.227	-	-	-	3.527	3.327
Pot Capacity-1 Maneuver	1465	-	-	-	757	934
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	909	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1465	-	-	-	750	934
Mov Capacity-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9
HCM LOS	-	-	A

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1465	-	-	-	923
HCM Control Delay, s	7.477	0	-	-	9
HCM Lane V/C Ratio	0.01	-	-	-	0.03
HCM Lane LOS	A	A	-	-	A
HCM 95th-tile Q, veh	0.0	-	-	-	0.1

Notes
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Data Entry Sheet
Determination of Warrants for Deceleration Lanes
NM DOT State Access Management Manual Criteria
Driveway "A" / Second St

Project Information:

Project Name: Family Dollar Store (Los Ranchos / Second St)
 Project Location: Los Ranchos / Second St
 Implementation Year: 2013
 Project Environment: Urban Multi-Lane

Street Information:

Major Street Name: Second St
 Minor Street Name: Driveway "A"

Intersection Information:

	Orientation	Prevailing Speed	No. Lanes Each Direction
Driveway "A"	Westbound	25	N/A
Second St	North-South	45	2

Determine Case:

Case

- 1 Urban Two-Lane Highway - Use Table 17.B.1
- 2 Urban Multi-Lane Highway - Use Table 17.B-2
- 3 Rural Two Lane Highway - Use Table 17.B-3 and 17.B-5
- 4 Rural Multi-Lane Highway - Use Table 17.B-4 and 17.B-6

Second St is Case 2
 Speed Category 45 to 55

NB Right Turn Volumes

2013 AM Pk. Hr. NO BUILD	0
2013 AM Pk. Hr. BUILD	7
2013 PM Pk. Hr. NO BUILD	0
2013 PM Pk. Hr. BUILD	12

NB Thru Volumes

616
614
1611
1606

SB Left Turn Volumes

2013 AM Pk. Hr. NO BUILD	0
2013 AM Pk. Hr. BUILD	13
2013 PM Pk. Hr. NO BUILD	0
2013 PM Pk. Hr. BUILD	15

SB Thru Volumes

1641
1637
670
668

Determination of Warrants for Auxiliary Lanes

Project Name: **Family Dollar Store (Los Ranchos / Second St)**
 Name of Highway: **Second St**
 Name of Cross Street: **Driveway "A"**

Determination of Warrants for: Westbound Driveway

Implementation Year Volumes - 2013 Posted Speed Limit: 45

Right Turn Deceleration Lane - Implementation Year Volumes

Condition	Year	Projected Right Turn Volume	Warrant Volume in thru Lane	Projected Volume in thru Lane	✓ if Met	Lane Length (Deceleration)*	Adjustment Factor for Grade**	Lane Length (Storage)***	Total Lane Length	Taper Ratio
AM Peak Hour NO BUILD	2013	-	-	308		N/A		-	N/A	N/A
AM Peak Hour BUILD	2013	7	398	307		N/A		-	N/A	N/A
PM Peak Hour NO BUILD	2013	-	-	806		N/A		-	N/A	N/A
PM Peak Hour BUILD	2013	12	288	803	✓	400	1.00	-	400	12.5:1

Based on Table 17.B-2 (Criteria for Deceleration Lanes on Urban Multi-Lane Highways)

Left Turn Deceleration Lane - Implementation Year Volumes

Condition	Year	Projected Left Turn Volume	Warrant Volume in thru Lane	Projected Volume in thru Lane	✓ if Met	Lane Length (Deceleration)*	Adjustment Factor for Grade**	Lane Length (Storage)***	Total Lane Length	Taper Ratio
AM Peak Hour NO BUILD	2013	-	-	821		N/A		N/A	N/A	N/A
AM Peak Hour BUILD	2013	13	252	819	✓	400	1.00	25	425	12.5:1
PM Peak Hour NO BUILD	2013	-	-	335		N/A		N/A	N/A	N/A
PM Peak Hour BUILD	2013	15	220	334	✓	400	1.00	25	425	12.5:1

Based on Table 17.B-2 (Criteria for Deceleration Lanes on Urban Multi-Lane Highways)

* Lane Length Requirements based on Table 18.K-1 (Deceleration and Acceleration Lengths)

** Enter Grade Adjustment Factor from Table 18.K-2 or other criteria.

*** Lane Storage Length is Based on a calculated 3-minute queue based on average arrival rate per minute.

= Volume/Hr. divided by 60 times three (rounded) times 25 feet per vehicle.

Lane Storage Length for right turn decel lanes is zero unless there is a stop condition.

Notes and Comments:

1. This warrant sheet is for the westbound Driveway "A" at 100% Development of the Project

**Table 17.B-2
Criteria For Deceleration Lanes On
URBAN MULTI-LANE HIGHWAYS**

Turning Volume ¹ (vph)	LEFT-TURN DECELERATION LANE			RIGHT-TURN DECELERATION LANE		
	Minimum Volume in Adjacent Through Lane (vphpl) ²			Minimum Volume in Adjacent Through Lane (vphpl) ²		
	≤30 mph	35 to 40 mph	45 to 55 mph	≤30 mph	35 to 40 mph	45 to 55 mph
<5	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
5	Not Required	490	420	1,200	730	450
10	420	370	300	820	490	320
15	360	290	220	600	350	240
20	310	230	160	460	260	180
25	270	190	130	360	230	150
30	240	160	110	290	200	130
35	210	130	100	260	180	120
40	180	120	Required	240	170	110
45	160	110	Required	220	160	Required
50	140	Required	Required	200	Required	Required
55	120	Required	Required	190	Required	Required
≥56	Required	Required	Required	Required	Required	Required
<p><i>Left-turn Deceleration Lanes are Required on Urban Multi-lane Highways for the following Left-turn Volumes:</i></p> <ul style="list-style-type: none"> • ≤30 mph : 56 vph or more • 35 to 40 mph : 46 vph or more • 45 to 55 mph : 36 vph or more 			<p><i>Right-turn Deceleration Lanes are Required on Urban Multi-lane Highways for the following Right-turn Volumes:</i></p> <ul style="list-style-type: none"> • ≤30 mph : 56 vph or more • 35 to 40 mph : 46 vph or more • 45 to 55 mph : 41 vph or more 			
<p><i>Notes:</i></p> <ol style="list-style-type: none"> 1. Use linear interpolation for turning volumes between 5 and 55 vph. 2. The volume in the adjacent through lane includes through vehicles and turning vehicles. 						

**Table 18.K-1
Deceleration and Acceleration Lengths (feet)**

Speed Change Lane Condition	Posted Speed (mph)									
	25	30	35	40	45	50	55	60	65	70
Deceleration Distance										
Stop Condition	150	200	250	325	400	475	550	650	725	850
Slow to 15 MPH	130	175	230	300	370	450	525	620	700	820
Deceleration Taper										
Length for 12-foot Lane	50	75	100	125	150	175	200	225	250	250
Straight Line Ratios (L:W)	4:1	6:1	8:1	10.5:1	12.5:1	14.5:1	16.5:1	18.5:1	21:1	21:1
Acceleration Lane Length	N/A	190	270	380	550	760	960	1,170	1,380	1,590
Acceleration Taper										
Length of 12-foot Lane	N/A	100	120	150	170	180	230	270	300	300
Straight Line Ratios (L:W)	N/A	8:1	10:1	12.5:1	14:1	15:1	19:1	22.5:1	25:1	25:1

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **Osuna Rd**
N-S Street: **Second St**

Speed Limit (Osuna Rd)= **45** MPH

Speed Limit (Second St)= **45** MPH

SIGNALIZED

Date of Count: **10/9/12**

Begin Time	End Time	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
7:00 AM	7:15 AM	18	87	20	24	31	24	3	70	41	145	221	20	0	0	0	0
7:15 AM	7:30 AM	26	93	16	16	31	40	5	100	34	161	310	8	1	0	0	0
7:30 AM	7:45 AM	24	118	37	30	64	61	16	110	38	102	282	11	0	0	0	0
7:45 AM	8:00 AM	28	122	18	30	70	55	19	92	42	138	306	14	0	0	0	0
8:00 AM	8:15 AM	20	113	15	31	74	52	18	95	54	122	251	16	0	0	0	0
8:15 AM	8:30 AM	13	94	15	23	44	56	16	106	52	135	245	9	0	0	0	0
8:30 AM	8:45 AM	12	53	19	30	40	41	6	95	17	142	207	17	0	0	0	0
8:45 AM	9:00 AM	0	0	0	21	35	37	0	0	0	101	195	10	0	0	0	0
AM Peak Hour Volumes		98	446	86	107	239	208	58	397	168	523	1149	49	1	0	0	0
% of Total Traffic		2.8%	12.6%	2.4%	3.0%	6.8%	5.9%	1.6%	11.3%	4.8%	14.8%	32.6%	1.4%	0.0%	0.0%	0.0%	0.0%
% Directional			17.9%			15.7%			17.7%			48.8%					
AM Peak Hour Factor			0.88			0.88			0.93			0.90					

Begin Time	End Time	Eastbound (Osuna Rd)			Westbound (Osuna Rd)			Northbound (Second St)			Southbound (Second St)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
4:00 PM	4:15 PM	20	70	20	47	89	87	42	220	33	37	136	19	3	0	0	0
4:15 PM	4:30 PM	18	61	15	42	107	88	34	233	40	42	145	26	1	1	0	0
4:30 PM	4:45 PM	24	88	22	58	103	136	30	215	27	50	126	23	1	0	0	0
4:45 PM	5:00 PM	17	83	13	44	104	121	40	238	33	61	146	25	0	0	0	0
5:00 PM	5:15 PM	18	65	19	64	95	146	46	266	38	46	136	22	2	0	0	0
5:15 PM	5:30 PM	12	58	17	42	117	152	44	260	26	51	119	30	0	0	0	0
5:30 PM	5:45 PM	20	73	8	42	82	95	35	205	28	56	114	29	2	0	0	0
5:45 PM	6:00 PM	22	54	9	34	105	77	26	191	31	41	81	25	0	1	0	0
PM Peak Hour Volumes		71	294	71	208	419	555	160	979	124	208	527	100	3	0	0	0
% of Total Traffic		1.9%	7.9%	1.9%	5.6%	11.3%	14.9%	4.3%	26.3%	3.3%	5.6%	14.2%	2.7%	0.1%	0.0%	0.0%	0.0%
% Directional			11.7%			31.8%			34.0%			22.5%					
PM Peak Hour Factor			0.81			0.95			0.90			0.90					

Traffic Count Data Sheet

Year Counts Taken: **2012** E-W Street Los Ranchos Rd Speed Limit (Los Ranchos Rd)= **30** MPH
 N-S Street: **Second St** Speed Limit (Second St)= **45** MPH
SIGNALIZED Date of Count: **10/9/12**

Begin Time	End Time	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
7:00 AM	7:15 AM	2	4	3	2	2	2	6	93	1	6	354	5	0	0	0	0
7:15 AM	7:30 AM	3	4	4	4	4	4	9	92	5	12	357	5	0	0	0	0
7:30 AM	7:45 AM	8	8	8	4	7	3	15	149	9	24	435	5	2	1	0	0
7:45 AM	8:00 AM	7	10	10	2	8	4	8	139	3	20	377	3	0	0	0	0
8:00 AM	8:15 AM	6	6	12	6	0	4	2	137	7	10	395	6	0	0	0	0
8:15 AM	8:30 AM	7	1	6	3	1	2	5	134	3	7	340	3	0	1	0	0
8:30 AM	8:45 AM	3	0	3	4	0	0	6	133	1	1	289	1	0	0	0	0
8:45 AM	9:00 AM	3	0	2	4	0	4	3	79	1	4	215	1	1	0	0	0
AM Peak Hour Volumes		28	25	36	15	16	13	30	559	22	61	1547	17	2	2	0	0
% of Total Traffic		1.2%	1.1%	1.5%	0.6%	0.7%	0.5%	1.3%	23.6%	0.9%	2.6%	65.3%	0.7%	0.1%	0.1%	0.0%	0.0%
% Directional			3.8%			1.9%			25.8%			68.6%					
AM Peak Hour Factor			0.82			0.79			0.88			0.88					

Begin Time	End Time	Eastbound (Los Ranchos Rd)			Westbound (Los Ranchos Rd)			Northbound (Second St)			Southbound (Second St)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
4:00 PM	4:15 PM	3	4	11	6	4	6	11	294	3	7	175	1	0	1	0	0
4:15 PM	4:30 PM	7	4	4	5	4	5	8	314	6	4	181	1	0	1	0	0
4:30 PM	4:45 PM	4	5	4	5	7	2	15	335	2	6	161	5	0	2	0	0
4:45 PM	5:00 PM	3	4	6	4	6	7	9	387	1	2	153	1	0	0	0	0
5:00 PM	5:15 PM	6	7	3	8	8	8	13	423	6	11	157	2	0	0	0	0
5:15 PM	5:30 PM	2	8	4	5	11	10	20	411	4	7	154	4	0	0	0	0
5:30 PM	5:45 PM	4	6	6	5	7	6	10	313	7	1	135	10	0	0	0	0
5:45 PM	6:00 PM	6	4	3	4	5	7	8	278	4	4	126	1	0	0	0	0
PM Peak Hour Volumes		15	24	17	22	32	27	57	1556	13	26	625	12	0	2	0	0
% of Total Traffic		0.6%	1.0%	0.7%	0.9%	1.3%	1.1%	2.3%	64.1%	0.5%	1.1%	25.8%	0.5%	0.0%	0.1%	0.0%	0.0%
% Directional			2.3%			3.3%			67.0%			27.3%					
PM Peak Hour Factor			0.88			0.78			0.92			0.96					

Traffic Count Data Sheet

Year Counts Taken: **2012** E-W Street Ranchitos Rd Speed Limit (Ranchitos Rd)= **30** MPH
 N-S Street: **Second St** Speed Limit (Second St)= **45** MPH
 SIGNALIZED Date of Count: **10/9/12**

Begin Time	End Time	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
7:00 AM	7:15 AM	4	4	9	2	4	2	8	94	2	7	307	10	0	0	0	0
7:15 AM	7:30 AM	4	4	24	4	2	2	5	84	3	7	389	6	0	0	0	0
7:30 AM	7:45 AM	3	8	24	2	2	1	8	102	3	12	441	13	1	0	0	0
7:45 AM	8:00 AM	6	7	26	3	11	3	21	150	0	7	422	29	0	1	0	0
8:00 AM	8:15 AM	10	12	31	1	6	1	16	131	3	12	403	21	0	0	0	0
8:15 AM	8:30 AM	6	11	25	0	2	0	15	130	1	9	336	9	0	0	0	0
8:30 AM	8:45 AM	5	2	14	2	1	2	7	136	4	6	330	10	0	0	0	0
8:45 AM	9:00 AM	4	2	8	0	3	3	4	125	0	4	282	4	0	0	0	0
AM Peak Hour Volumes		25	38	106	6	21	5	60	513	7	40	1602	72	1	1	0	0
% of Total Traffic		1.0%	1.5%	4.2%	0.2%	0.8%	0.2%	2.4%	20.6%	0.3%	1.6%	64.2%	2.9%	0.0%	0.0%	0.0%	0.0%
% Directional			6.8%			1.3%			23.2%			68.7%					
AM Peak Hour Factor			0.80			0.47			0.85			0.92					

Begin Time	End Time	Eastbound (Ranchitos Rd)			Westbound (Ranchitos Rd)			Northbound (Second St)			Southbound (Second St)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
4:00 PM	4:15 PM	6	7	16	4	10	4	16	296	2	3	169	9	0	1	0	0
4:15 PM	4:30 PM	10	2	11	4	6	3	8	300	4	5	181	7	0	1	0	0
4:30 PM	4:45 PM	3	7	10	0	5	8	10	319	2	7	159	10	0	1	0	0
4:45 PM	5:00 PM	2	2	5	3	3	5	15	336	3	3	141	7	0	2	0	2
5:00 PM	5:15 PM	7	4	15	1	6	4	13	382	3	2	167	5	1	0	0	0
5:15 PM	5:30 PM	5	5	10	1	8	8	17	439	1	2	137	7	0	0	0	0
5:30 PM	5:45 PM	3	2	7	3	10	12	17	345	2	7	162	11	0	0	0	0
5:45 PM	6:00 PM	3	3	6	0	3	3	6	293	9	6	196	24	0	0	0	0
PM Peak Hour Volumes		17	13	37	8	27	29	62	1502	9	14	607	30	1	2	0	2
% of Total Traffic		0.7%	0.6%	1.6%	0.3%	1.1%	1.2%	2.6%	63.8%	0.4%	0.6%	25.8%	1.3%	0.0%	0.1%	0.0%	0.1%
% Directional			2.8%			2.7%			66.8%			27.6%					
PM Peak Hour Factor			0.64			0.64			0.86			0.90					