Terry O. Brown P.E.

Candelaria / University Project

(Candelaria Rd. / University Blvd.)

Traffic Impact Study / Access Study

May 20, 2012

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Presented to:

New Mexico Department of Transportation, Dist. 3
&
City of Albuquerque, Transp. Development Section

Prepared for:

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Terry O. Brown P.E.
Civil / Transportation Engineering

Wednesday, May 23, 2012

Kristal Metro, P.E., Traffic Engineer
City of Albuquerque Transportation Development Section
600 2nd St. NW
Albuquerque, NM 87102

Re: Candelaria / University Blvd. Project

Dear Kristal:

Attached is a copy of the DRAFT Traffic Impact Study Update for the referenced proposed project for your review and comment. This is an update to a previous study.

Please call me if you have questions.

Best Regards,

Terry O. Brown, P.E.

attachments as noted

cc: Antonio Jaramillo, NM DOT Dist. 3 w/1 copy of report
Ronald R. Bohannan, Tierra West, LLC w/2 copies of report

RECEIVED
MAY 31 2012
BY:

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Terry O. Brown P.E.
Civil / Transportation Engineering

Wednesday, May 23, 2012

Antonio Jaramillo, P.E., Traffic Engineer
New Mexico Department of Transportation District 3
7500 Pan American Freeway NE
P. O. Box 91750
Albuquerque, NM 87199-1750

Re: Candelaria / University Blvd. Project

Dear Antonio:

Attached is a copy of the DRAFT Traffic Impact Study Update for the referenced proposed project for your review and comment. This is an update to a previous study.

Please call me if you have questions.

Best Regards,

Terry O. Brown, P.E.

attachments as noted

cc: Kristal Metro, P.E., City of Albuquerque Transp.Dev. Section w/1 copy of report
Ronald R. Bohannan, Tierra West, LLC w/2 copies of report

Terry O. Brown • tobe@swcp.com • P.O. Box 92051 • Albuquerque, NM 87199 • 505 · 883 · 8807

Traffic Impact Study Update
Candelaria / University Project – (Candelaria Rd. / University Blvd.)

Contents

Traffic Impact Study Update
Candelaria / University Project – (Candelaria Rd. / University Blvd.)

STUDY PURPOSE

The purpose of this study is to identify the development's impact on the adjacent transportation system. The study is being conducted in conjunction with a request for approval of a proposed plan for a commercial development located along the I-25 East Frontage Rd. between Candelaria Rd. and Menaul Blvd. in Albuquerque, New Mexico. This study is presented to satisfy the requirements of the New Mexico Department of Transportation, District 3 as well as the City of Albuquerque. This study is an update to the January 30, 2009 traffic Impact Study (Drafted in November 2007) since it has expired.

GENERAL

The proposed development is located along the east side of the I-25 East Frontage Road between Candelaria Rd. and Menaul Blvd. (see Appendix Page A-2 - Vicinity Map). The existing intersections of Candelaria Rd. / University Blvd., Candelaria Rd. / I-25 Southbound Frontage Rd., Menaul Blvd. / University Blvd., and Menaul Blvd. / I-25 Northbound Frontage Rd. are currently signalized intersections. The intersection of Claremont Ave / University Blvd. is unsignalized and will be analyzed in this study.

Currently, properties in the area are commercial/office in nature.

PROPOSED DEVELOPMENT

The proposed plan for this site consists of a 6,500 SF restaurant and two motels. The phasing of construction is unknown at this time. This study will analyze only the full development of the project.

The anticipated implementation year for this site is the year 2015.

STUDY PROCEDURES

A scoping meeting was held with City of Albuquerque Transportation Development staff (Tony Loyd and Steele Nowak in 2007) to discuss scope and methodology to be utilized within the report. Specific items included format, intersections to be studied, intersection analysis procedures, existing traffic counts, trip distribution methodology, and implementation year definition. This study uses the same scope with updated information.

The basic procedure followed for this traffic impact study is outlined as follows:

- Calculate the generated trips for this proposed commercial / office development as defined on Page A-4 of the Appendix of this report and more specifically defined in the

Trip Generation Table on Page A-7 of the Appendix of this report. The trips generated for the implementation year analyses (2015) will assume that 100% of the development has occurred.

- Calculate trip distribution for the newly generated trips by this development. The new trips will be distributed based on a two-mile radius distribution of population, Appendix Pages A-11 thru A-18.
- Determine Trip Assignments for the newly generated trips based on the results of the Trip Distribution Analysis and logical routing to and from the new site, Appendix Pages A-19 thru A-20.
- Obtain AM Peak Hour and PM Peak Hour Turning Movement Volumes Traffic Counts for the intersections of Candelaria Rd. / University Blvd., Candelaria Rd. / I-25 Southbound Frontage Rd., Menaul Blvd. / University Blvd., Menaul Blvd. / I-25 Northbound Frontage Rd., and Claremont Ave / University Blvd, Appendix Pages A-71 thru A-76.
- Determine Historic Growth Rates for background traffic volumes based on an analysis of the growth trend of recent AWDT Volumes obtained from 2001 thru 2010 MRCOG Traffic Flow Maps, Appendix Pages A-21 thru A-28.
- Determine the 2015 NO BUILD Volumes for each intersection to be analyzed by growing the background traffic growth from the year of the counts to 2015, Appendix Pages A-29 thru A-44.
- Add data from Trip Assignments Maps and Tables to the 2015 NO BUILD Volumes to obtain the 2015 BUILD Volumes for this project, Appendix Pages A-29 thru A-44.
- Provide signalized and unsignalized intersection analyses for the following intersections:

INTERSECTION	TYPE CONTROL	NO BUILD ANALYSIS	BUILD ANALYSIS
Candelaria Rd. / University Blvd.	Traffic Signal	2015	2015
Candelaria Rd. / I-25 SB Frntg. Rd.	Traffic Signal	2015	2015
Menaul Blvd. / University Blvd.	Traffic Signal	2015	2015
Menaul Blvd. / I-25 NB Frntg. Rd.	Traffic Signal	2015	2015
Claremont Ave / University Blvd.	Stop Sign	2015	2015
Candelaria Rd. / Driveway ' A'	Stop Sign	N/A	2015
Candelaria Rd. / Driveway ' B'	Stop Sign	N/A	2015

TRIP GENERATION WORKSHEET

Projected trips were calculated from the ITE trip generation data for motel and high turnover (sit-down) restaurant. Trips for the development were determined based on land use defined on the Conceptual Site Development Plan on Page A-4 in the Appendix of this report. The following table summarized the trip generation rate for the project:

Candelaria / University Commercial Development
Trip Generation Data

USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
DESCRIPTION		*GROSS*	*ENTER*	*EXIT*	*ENTER*	*EXIT*
Summary Sheet	Units					
Motel (320)	70.00	621	16	29	23	20
Motel (320)	70.00	621	16	29	23	20
High Turnover (Sit-Down) Restaurant (932)	6.50	826	39	36	43	28
Subtotal		**2,068**	**71**	**94**	**89**	**68**

See Appendix Page A-7 thru A-10 for the Trip Generation Summary Table and Worksheets for this project.

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 2001 through 2010 Traffic Flow maps prepared by the Mid-Region Council of Governments. 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 annual growth rate for each approach if that calculated rate appeared feasible. However, there were some instances where the rate indicated a negative growth trend or appeared to be unreasonably high or low. In those cases, an appropriate growth rate from an adjacent segment of the same roadway was used, a shorter time span was used to determine the growth rate, or the growth rate was considered to be 0.5% or a generic 3% if appropriate. Due to the limited potential for growth in the area, it was believed that a 3% growth rate was inappropriate for this study. Therefore, a growth rate of 0.5% was used if the linear regression analysis showed the growth rate to be negative. 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-21 through A-27. Additionally, the growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (Appendix Pages A-31 through A-44).

PROJECTED PEAK HOUR TURNING MOVEMENTS FOR 2015 BUILDOUT

The calculated growth rates were applied to the most recent peak hour traffic counts to derive the 2015 AM and PM Peak Hour NO BUILD Volumes. To these volumes, the generated trips based on implementation of the proposed Site Development Plan (100% development) were added to obtain BUILD volumes for the intersection analyses. See Appendix Pages A-29 thru A-44 for further information regarding the turning movement volumes.

TRIP DISTRIBUTION

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 2035 Socioeconomic Forecasts by Data Analysis Subzones for the MRCOG Region provided by the Mid-Region Council of Governments (MRCOG). Population data from the years 2015 and 2025 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 subareas and data analysis subzones is shown on Appendix Pages A-11 thru A-17.

RESULTS OF SIGNALIZED INTERSECTION CAPACITY ANALYSES

#1 – Candelaria Rd. / University Blvd. - Pages A-45 thru A-48

The results of the implementation year analysis of the signalized intersection of Candelaria Rd. / University Blvd. are summarized in the following table:

Intersection: 1 - Candelaria Rd. / University Blvd.

		2015 AM Peak Hour BUILD (EXIST. GEOM.)					2015 PM Peak Hour BUILD (EXIST. GEOM.)				
		NO BUILD		BUILD			NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay		Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	1	B - 15.1	1	B - 15.2	L	1	D - 52.5	1	D - 49.8	L
	T	2	C - 22.3	2	C - 23.2	T	2	D - 42.4	2	D - 41.7	T
	R	1	A - 5.5	1	A - 6.8	R	1	A - 5.3	1	A - 6.5	R
WB	L	1	C - 30.6	1	C - 30.5	L	1	C - 30.5	1	C - 30.5	L
	T	3	D - 38.8	3	D - 38.6	T	3	D - 43.0	3	D - 43.0	T
	R	1	C - 31.1	1	C - 30.9	R	1	C - 31.4	1	C - 31.4	R
NB	L	1	A - 6.2	1	A - 7.1	L	1	A - 5.6	1	A - 6.2	L
	T	2	A - 9.1	2	B - 10.7	T	2	A - 8.8	2	B - 10.1	T
	R	>	A - 9.1	>	B - 10.7	R	>	A - 8.8	>	B - 10.1	R
SB	L	2	B - 11.8	2	B - 12.3	L	2	B - 13.5	2	B - 13.9	L
	T	2	B - 15.1	2	B - 15.7	T	2	B - 17.0	2	B - 17.4	T
	R	>	B - 15.1	>	B - 15.7	R	>	B - 17.0	>	B - 17.4	R
Intersection:		***C - 21.4***		***C - 21.8***			***C - 28.2***		***C - 28.3***		

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

The implementation year analysis of the intersection of Candelaria Rd. / University Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. The implementation year analysis shows that the proposed development increases the delays at the intersection by only 0.1 – 0.4 seconds. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Candelaria Rd. / University Blvd.

The following table summarizes the results of the 95th percentile queueing analysis based on Poisson's arrival equations for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Candelaria / University Project

Intersection: **Candelaria Blvd / University Blvd**

2015

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*99*	*290*	*2*	*454*	*Cont*	*1*	*161*	*290*
AM NO BUILD Queue	1	100	150	2	461	325	1	163	225
AM BUILD Queue	**1**	**112**	**175**	**2**	**468**	**325**	**1**	**163**	**225**
Existing Lane Length	*1*	*120*	*290*	*2*	*488*	*Cont*	*1*	*135*	*290*
PM NO BUILD Queue	1	122	**175**	2	495	325	1	137	200
PM BUILD Queue	**1**	**131**	**200**	**2**	**500**	**325**	**1**	**137**	**200**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*79*	*160*	*3*	*338*	*Cont*	*1*	*120*	*440*
AM NO BUILD Queue	1	80	125	3	343	200	1	122	175
AM BUILD Queue	**1**	**91**	**150**	**3**	**343**	**200**	**1**	**122**	**175**
Existing Lane Length	*1*	*87*	*160*	*3*	*610*	*Cont*	*1*	*192*	*440*
PM NO BUILD Queue	1	88	150	3	619	300	1	195	250
PM BUILD Queue	**1**	**102**	**150**	**3**	**619**	**300**	**1**	**195**	**250**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*80*	*115*	*2*	*224*	*Cont*	*0*	*73*	*0*
AM NO BUILD Queue	1	81	125	2	227	175	0	74	125
AM BUILD Queue	**1**	**91**	**150**	**2**	**239**	**200**	**0**	**81**	**125**
Existing Lane Length	*1*	*120*	*115*	*2*	*426*	*Cont*	*0*	*96*	*0*
PM NO BUILD Queue	1	122	175	2	432	300	0	97	150
PM BUILD Queue	**1**	**129**	**175**	**2**	**441**	**300**	**0**	**102**	**150**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*2*	*18*	*225*	*2*	*3*	*Cont*	*0*	*13*	*0*
AM NO BUILD Queue	2	18	25	2	3	0	0	13	50
AM BUILD Queue	**2**	**18**	**25**	**2**	**4**	**0**	**0**	**13**	**50**
Existing Lane Length	*2*	*36*	*225*	*2*	*6*	*Cont*	*0*	*18*	*0*
PM NO BUILD Queue	2	37	50	2	6	0	0	18	50
PM BUILD Queue	**2**	**37**	**50**	**2**	**7**	**25**	**0**	**18**	**50**

	AM	PM
Cycle Length:	110	110

NOTE: Queue lengths are in feet.

The recommendations based on the queueing analysis for the auxiliary lanes at the 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:	290	175	200	No Recommendation
Eastbound Right Turn:*	290	110	110	No Recommendation
Westbound Left Turn:	160	150	150	No Recommendation
Westbound Right Turn:*	440	130	130	No Recommendation
Northbound Left Turn:	115	175	175	No Recommendation
Northbound Right Turn:*	0	80	80	No Recommendation
Southbound Left Turn:	225	50	50	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 concludes that no recommendations are made for the auxiliary lanes at the intersection of Candelaria Rd. / University Blvd.

#2 – Candelaria Rd. / I-25 SB Frntg. Rd. - Pages A-49 thru A-52

The results of the implementation year analysis of the signalized intersection of Candelaria Rd. / I-25 Southbound Frontage Rd. are summarized in the following table:

Intersection: 2 - Candelaria Rd. / I-25 SB Frntg Rd

		2015 AM Peak Hour BUILD (EXIST. GEOM.)					2015 PM Peak Hour BUILD (EXIST. GEOM.)				
		NO BUILD		BUILD			NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay		Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	T	2	C - 32.9	2	C - 33.1	T	2	D - 40.9	2	D - 40.9	
	R	1	C - 23.3	1	C - 23.2	R	1	C - 32.1	1	C - 31.9	
WB	L	2	C - 21.9	2	C - 24.5	L	2	C - 23.1	2	C - 25.3	
	T	3	B - 13.2	3	B - 15.9	T	3	B - 15.0	3	B - 16.4	
SB	L	>	B - 18.0	>	B - 19.1	L	>	B - 10.6	>	B - 10.8	
	T	2	B - 18.3	2	B - 18.7	T	2	B - 10.4	2	B - 10.6	
	R	1	B - 16.7	1	B - 16.8	R	1	B - 10.1	1	B - 10.2	
Intersection:		*C - 22.7*		*C - 23.6*			*C - 22.0*		*C - 22.5*		

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

The implementation year analysis of the intersection of Candelaria Rd. / I-25 Southbound Frontage Rd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. The implementation year analysis shows that the proposed development increases the delays at the intersection by only 0.5 to 0.9 seconds. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Candelaria Rd. / I-25 Southbound Frontage Rd.

The following table summarizes the results of the 95th percentile queueing analysis based on Poisson's arrival equations for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Candelaria / University Project

Intersection: **Candelaria Blvd / I-25 SB ramp**

2015

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*0*	*0*	*0*	*2*	*747*	*Cont*	*1*	*132*	*200*
AM NO BUILD Queue	0	0	0	2	758	475	1	134	200
AM BUILD Queue	**0**	**0**	**0**	**2**	**765**	**475**	**1**	**134**	**200**
Existing Lane Length	*0*	*0*	*0*	*2*	*571*	*Cont*	*1*	*91*	*200*
PM NO BUILD Queue	0	0	0	2	580	375	1	92	150
PM BUILD Queue	**0**	**0**	**0**	**2**	**589**	**375**	**1**	**92**	**150**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*2*	*75*	*150*	*3*	*510*	*Cont*	*0*	*0*	*0*
AM NO BUILD Queue	2	76	75	3	518	250	0	0	0
AM BUILD Queue	**2**	**76**	**75**	**3**	**528**	**275**	**0**	**0**	**0**
Existing Lane Length	*2*	*73*	*150*	*3*	*653*	*Cont*	*0*	*0*	*0*
PM NO BUILD Queue	2	74	75	3	663	325	0	0	0
PM BUILD Queue	**2**	**74**	**75**	**3**	**670**	**325**	**0**	**0**	**0**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*0*	*0*	*0*	*0*	*0*	*Cont*	*0*	*0*	*0*
AM NO BUILD Queue	0	0	0	0	0	0	0	0	0
AM BUILD Queue	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Existing Lane Length	*0*	*0*	*0*	*0*	*0*	*Cont*	*0*	*0*	*0*
PM NO BUILD Queue	0	0	0	0	0	0	0	0	0
PM BUILD Queue	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*2*	*203*	*290*	*2*	*409*	*Cont*	*1*	*157*	*290*
AM NO BUILD Queue	2	206	175	2	415	300	1	159	225
AM BUILD Queue	**2**	**224**	**175**	**2**	**415**	**300**	**1**	**159**	**225**
Existing Lane Length	*2*	*166*	*290*	*2*	*276*	*Cont*	*1*	*156*	*290*
PM NO BUILD Queue	2	168	150	2	280	225	1	158	225
PM BUILD Queue	**2**	**191**	**150**	**2**	**280**	**225**	**1**	**158**	**225**

	AM	PM
Cycle Length:	110	110

NOTE: Queue lengths are in feet.

The recommendations based on the queueing analysis for the auxiliary lanes at the 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	0	0	No Recommendation
Eastbound Right Turn:*	200	100	100	No Recommendation
Westbound Left Turn:	150	75	75	No Recommendation
Westbound Right Turn:*	0	0	0	No Recommendation
Northbound Left Turn:	0	0	0	No Recommendation
Northbound Right Turn:*	0	0	0	No Recommendation
Southbound Left Turn:	290	175	175	No Recommendation
Southbound Right Turn:*	290	110	110	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 concludes that no recommendations are made for the auxiliary lanes at the intersection of Candelaria Rd. / I-25 Southbound Frontage Rd.

#3 - Menaul Blvd. / I-25 NB Frntg. Rd. - Pages A-53 thru A-56

The results of the implementation year analysis of the signalized intersection of Menaul Blvd. / I-25 Northbound Frontage Rd. are summarized in the following table:

Intersection: 3 - Menaul Blvd / I-25 NB Frntg Rd

		2015 AM Peak Hour BUILD (EXIST. GEOM.)				2015 PM Peak Hour BUILD (EXIST. GEOM.)			
		NO BUILD		BUILD		NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	D - 41.7	1	D - 41.2	1	D - 39.3	1	D - 39.3
	T	3	C - 25.0	3	C - 24.3	3	B - 18.0	3	B - 17.5
WB	T	3	C - 24.9	3	C - 24.7	3	B - 19.7	3	B - 19.1
	R	>	C - 24.9	>	C - 24.7	>	B - 19.7	>	B - 19.1
NB	L	1	B - 13.1	1	B - 13.6	1	B - 18.6	1	B - 19.1
	T	2	B - 13.2	2	B - 13.8	2	C - 24.2	2	C - 24.8
	R	1	B - 13.1	1	B - 13.9	1	B - 19.4	1	C - 20.3
Intersection:		***C - 23.2***		***C - 22.9***		***C - 21.4***		***C - 21.3***	

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

The implementation year analysis of the intersection of Menaul Blvd. / I-25 Northbound Frontage Rd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. The implementation year analysis shows that the proposed development decreases the delays at the intersection by 0.1 to 0.3 seconds. The reason the average delays decreased from the

NO BUILD to the BUILD condition is because the average intersection delay is a weighted average considering all of the delays and volumes of the various turning movements at the intersection. If the BUILD condition adds turning movements to those already with low delays, then the weighted average delay of the intersection will be reduced. In this case, the BUILD condition adds more volume to those movements with minimal delay, thus reducing the weighted average delay at the intersection. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Menaul Blvd. / I-25 Northbound Frontage Rd.

The following table summarizes the results of the 95th percentile queueing analysis based on Poisson's arrival equations for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Candelaria / University Project

Intersection: **Menaul Blvd / I-25 NB ramp**

2015

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*118*	*175*	*3*	*799*	*Cont*	*0*	*0*	*0*
AM NO BUILD Queue	1	122	175	3	828	375	0	0	0
AM BUILD Queue	**1**	**122**	**175**	**3**	**831**	**375**	**0**	**0**	**0**
Existing Lane Length	*1*	*195*	*175*	*3*	*923*	*Cont*	*0*	*0*	*0*
PM NO BUILD Queue	1	202	275	3	956	425	0	0	0
PM BUILD Queue	**1**	**203**	**275**	**3**	**960**	**425**	**0**	**0**	**0**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*0*	*0*	*0*	*3*	*828*	*Cont*	*0*	*74*	*0*
AM NO BUILD Queue	0	0	0	3	840	375	0	75	125
AM BUILD Queue	**0**	**0**	**0**	**3**	**866**	**400**	**0**	**75**	**125**
Existing Lane Length	*0*	*0*	*0*	*3*	*807*	*Cont*	*0*	*74*	*0*
PM NO BUILD Queue	0	0	0	3	819	375	0	75	125
PM BUILD Queue	**0**	**0**	**0**	**3**	**838**	**375**	**0**	**75**	**125**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*88*	*400*	*2*	*223*	*Cont*	*1*	*128*	*250*
AM NO BUILD Queue	1	89	150	2	226	175	1	130	175
AM BUILD Queue	**1**	**89**	**150**	**2**	**227**	**175**	**1**	**146**	**200**
Existing Lane Length	*1*	*68*	*400*	*2*	*735*	*Cont*	*1*	*145*	*250*
PM NO BUILD Queue	1	69	125	2	746	475	1	147	200
PM BUILD Queue	**1**	**69**	**125**	**2**	**747**	**475**	**1**	**167**	**225**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*0*	*0*	*0*	*0*	*0*	*Cont*	*0*	*0*	*0*
AM NO BUILD Queue	0	0	0	0	0	0	0	0	0
AM BUILD Queue	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Existing Lane Length	*0*	*0*	*0*	*0*	*0*	*Cont*	*0*	*0*	*0*
PM NO BUILD Queue	0	0	0	0	0	0	0	0	0
PM BUILD Queue	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	AM	PM
Cycle Length:	110	110

NOTE: Queue lengths are in feet.

The recommendations based on the queueing analysis for the auxiliary lanes at the 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:	175	275	275	**275' plus transition.**
Eastbound Right Turn:*	0	0	0	No Recommendation
Westbound Left Turn:	0	0	0	No Recommendation
Westbound Right Turn:*	0	60	60	No Recommendation
Northbound Left Turn:	400	150	150	No Recommendation
Northbound Right Turn:*	250	100	110	No Recommendation
Southbound Left Turn:	0	0	0	No Recommendation
Southbound Right Turn:*	0	0	0	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 recommends that the eastbound left turn lane be lengthened to 275 feet plus transition. According to aerial photographs, it does not look like the eastbound left turn lane can be lengthened due to the close distance to the next intersection to the west (Menaul Blvd. / I-25 Southbound Frontage Rd.). Therefore, no recommendation is made for the auxiliary lanes at the intersection of Menaul Blvd. / I-25 Northbound Frontage Rd.

#4 – Menaul Blvd. / University Blvd.- Pages A-57 thru A-60

The results of the implementation year analysis of the signalized intersection of Menaul Blvd. / University Blvd. are summarized in the following table:

Intersection: 4 - Menaul Blvd / University Blvd

		2015 AM Peak Hour BUILD					2015 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	B - 17.4	1	B - 19.2	L	1	C - 28.2	1	C - 35.0	
	T	3	C - 22.3	3	C - 24.5	T	3	C - 32.6	3	C - 34.1	
	R	>	C - 22.3	>	C - 24.5	R	>	C - 32.6	>	C - 34.1	
WB	L	1	C - 29.9	1	C - 29.6	L	1	C - 31.7	1	C - 31.7	
	T	3	C - 29.8	3	C - 30.4	T	3	C - 30.9	3	C - 32.8	
	R	>	C - 29.8	>	C - 30.4	R	>	C - 30.9	>	C - 32.8	
NB	L	1	B - 17.0	1	B - 17.1	L	1	B - 16.9	1	B - 16.7	
	T	2	C - 26.5	2	C - 26.8	T	2	C - 32.0	2	C - 32.1	
	R	>	C - 26.5	>	C - 26.8	R	>	C - 32.0	>	C - 32.1	
SB	L	1	B - 13.3	1	B - 14.1	L	1	B - 15.7	1	B - 18.0	
	T	3	B - 17.3	3	B - 17.8	T	3	B - 14.3	3	B - 15.1	
	R	>	B - 17.3	>	B - 17.8	R	>	B - 14.3	>	B - 15.1	
Intersection:		***C - 24.3***		***C - 25.1***			***C - 29.7***		***C - 30.7***		

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

The implementation year analysis of the intersection of Menaul Blvd. / University Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. The implementation year analysis shows that the proposed development increases the delays at the intersection by only 0.8 to 1 second. Therefore, this study concludes that the development of the proposed development presents no significant impact to the calculated delays at the intersection of Menaul Blvd. / University Blvd.

The following table summarizes the results of the 95th percentile queueing analysis based on Poisson's arrival equations for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Candelaria / University Project

Intersection: **Menaul Blvd / University Blvd**

2015

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*74*	*90*	*3*	*626*	*Cont*	*0*	*216*	*0*
AM NO BUILD Queue	1	75	125	3	635	300	0	219	275
AM BUILD Queue	**1**	**94**	**150**	**3**	**635**	**300**	**0**	**219**	**275**
Existing Lane Length	*1*	*65*	*90*	*3*	*825*	*Cont*	*0*	*170*	*0*
PM NO BUILD Queue	1	66	**125**	3	837	375	0	173	225
PM BUILD Queue	**1**	**89**	**150**	**3**	**837**	**375**	**0**	**173**	**225**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*225*	*90*	*3*	*607*	*Cont*	*0*	*63*	*0*
AM NO BUILD Queue	1	228	300	3	616	300	0	64	100
AM BUILD Queue	**1**	**228**	**300**	**3**	**616**	**300**	**0**	**77**	**125**
Existing Lane Length	*1*	*197*	*90*	*3*	*854*	*Cont*	*0*	*92*	*0*
PM NO BUILD Queue	1	200	250	3	867	400	0	93	**150**
PM BUILD Queue	**1**	**200**	**250**	**3**	**867**	**400**	**0**	**109**	**175**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*151*	*100*	*2*	*281*	*Cont*	*0*	*126*	*0*
AM NO BUILD Queue	1	152	200	2	284	225	0	127	175
AM BUILD Queue	**1**	**152**	**200**	**2**	**287**	**225**	**0**	**127**	**175**
Existing Lane Length	*1*	*176*	*100*	*2*	*698*	*Cont*	*0*	*264*	*0*
PM NO BUILD Queue	1	178	250	2	704	450	0	266	325
PM BUILD Queue	**1**	**178**	**250**	**2**	**707**	**450**	**0**	**266**	**325**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*49*	*180*	*3*	*238*	*Cont*	*0*	*27*	*0*
AM NO BUILD Queue	1	50	100	3	242	150	0	27	75
AM BUILD Queue	**1**	**67**	**125**	**3**	**245**	**150**	**0**	**53**	**100**
Existing Lane Length	*1*	*62*	*180*	*3*	*203*	*Cont*	*0*	*33*	*0*
PM NO BUILD Queue	1	63	**100**	3	206	125	0	33	**75**
PM BUILD Queue	**1**	**75**	**125**	**3**	**209**	**125**	**0**	**52**	**100**

	AM	PM
Cycle Length:	110	110

NOTE: Queue lengths are in feet.

The recommendations based on the queuing analysis for the auxiliary lanes at the 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:	90	125	150	**150' plus transition.**
Eastbound Right Turn:*	0	140	140	No Recommendation
Westbound Left Turn:	90	300	300	**300' plus transition.**
Westbound Right Turn:*	0	80	90	No Recommendation
Northbound Left Turn:	100	250	250	**250' plus transition.**
Northbound Right Turn:*	0	160	160	No Recommendation
Southbound Left Turn:	180	100	125	No Recommendation
Southbound Right Turn:*	0	40	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 recommends that the eastbound left turn lane be lengthened to 150 feet plus transition, the westbound left turn lane be lengthened to 300 feet plus transition, and the northbound left turn lane be lengthened to 250 feet plus transition. According to aerial photographs, it does look like the eastbound left turn lane can be lengthened to the recommended length, however that would only allow for two additional vehicles and is therefore not cost effective. According to aerial photographs, it does look like the westbound left turn lane can be lengthened to 300 feet plus transition without any adverse effect, however; according to the Synchro 7 Queueing Analysis the AM Peak Hour BUILD condition queue length will actually be 177 feet and the PM Peak Hour BUILD condition queue length will be 174 feet. (See Appendix Pages A-60a thru A-60b.) Lengthening the westbound left turn lane to 175 feet plus transition would only allow for three additional vehicles and would destroy new median landscaping and is therefore not cost effective. According to aerial photographs, it does not look like the northbound left turn lane can be lengthened to 250 feet plus transition due to the inadequate amount of right-of-way and also because it would adversely affect the intersection to the south (Menaul Rd. / University Blvd.). Therefore, no recommendation is made for the auxiliary lanes at the intersection of Menaul Blvd. / University Blvd.

RESULTS OF UNSIGNALIZED INTERSECTION CAPACITY ANALYSES

#5 – N. Super 8 Drive (Driveway 'A') / University Blvd. - Pages A-61 thru A-64

The results of the analysis of the unsignalized intersection of N. Super 8 Drive (Driveway 'A') / University Blvd. are summarized in the following table:

Intersection: **5 - N. Super 8 Drive / University Blvd**

		2015 AM Peak Hour BUILD					2015 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	>	LOS- N/A	>	A - 9.9	L	>	LOS- N/A	>	A - 9.7	L
	T	1	LOS- N/A	1	A - 9.9	T	1	LOS- N/A	1	A - 9.7	T
	R	>	LOS- N/A	>	A - 9.9	R	>	LOS- N/A	>	A - 9.7	R
WB	L	1	B - 11.4	1	B - 12.6	L	1	B - 12.1	1	B - 13.6	L
	T	>	LOS- N/A	>	B - 12.6	T	>	LOS- N/A	>	B - 13.6	T
	R	1	A - 9.3	1	A - 9.4	R	1	A - 9.2	1	A - 9.2	R
NB	L	1	LOS- N/A	1	A - 8.1	L	1	LOS- N/A	1	A - 7.9	L
SB	L	1	A - 8.3	1	A - 8.4	L	1	A - 8.8	1	A - 9.0	L
Intersection:		*u - N/A*		*u - N/A*			*u - N/A*		*u - N/A*		

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

This intersection is currently a tee intersection and is proposed to be a four-legged intersection. The projected levels-of-service for the implementation year (2015) for the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions are all acceptable. Thus, this analysis finds that the operation of N. Super 8 Drive (Driveway 'A') / University Blvd. intersection is acceptable.

A Determination of Warrants for Deceleration Lanes demonstrates that no deceleration lanes are required along University Blvd. at the intersection of N. Super 8 Drive (Driveway 'A') / University Blvd. See Appendix Pages A-77 thru A-82.

#6 – Claremont Ave. (Driveway 'B') / University Blvd. - Pages A-65 thru A-68

The results of the analysis of the unsignalized intersection of Claremont Ave. (Driveway 'B') / University Blvd. are summarized in the following table:

Intersection: **6 - Claremont Ave / University Blvd**

2015 AM Peak Hour BUILD **2015 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	>	LOS - N/A	>	B - 12.0	L	>	LOS - N/A	>	B - 12.5
	T	1	LOS - N/A	1	B - 12.0	T	1	LOS - N/A	1	B - 12.5
	R	>	LOS - N/A	>	B - 12.0	R	>	LOS - N/A	>	B - 12.5
WB	L	1	B - 11.9	1	B - 13.8	L	1	C - 15.7	1	C - 19.9
	T	>	LOS - N/A	>	B - 13.8	T	>	LOS - N/A	>	C - 19.9
	R	1	A - 9.9	1	A - 9.9	R	1	B - 11.8	1	B - 11.8
NB	L	1	LOS - N/A	>	A - 8.2	L	1	LOS - N/A	>	A - 7.9
SB	L	1	A - 8.5	>	A - 8.5	L	1	A - 9.8	>	A - 9.8
Intersection:		*u - N/A*			*u - N/A*			*u - N/A*		*u - N/A*

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

This intersection is currently a tee intersection and is proposed to be a four-legged intersection. The projected levels-of-service for the implementation year (2015) for the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions are all acceptable. Thus, this analysis finds that the operation of Claremont Ave. (Driveway 'B') / University Blvd. intersection is acceptable.

A Determination of Warrants for Deceleration Lanes demonstrates that a left turn deceleration lane of 300 feet plus an 8:1 taper is required along University Blvd. at the intersection of Claremont Ave. (Driveway 'B') / University Blvd. See Appendix Pages A-79 thru A-82. There is already an existing two-way left turn lane (TWLTL) at this location, therefore no additional deceleration lane is needed.

#7 – Candelaria Rd. / Driveway 'C' – Pages A-69 thru A-70

The results of the analysis of the unsignalized intersection of Candelaria Rd. / Driveway 'C' are summarized in the following table:

Intersection: **7 - Candelaria Rd / Drive C**

2015 Peak Hour BUILD

		(EXIST. GEOM.) AM BUILD		(EXIST. GEOM.) PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
NB	R	1	A - 9.2	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.

This intersection is proposed to be a right-in, right-out only driveway. This analysis indicates that the driveway will operate at acceptable levels-of-service in the implementation year (2015) for the AM Peak Hour and PM Peak Hour BUILD condition. Thus, this analysis finds that the operation of Candelaria Rd. / Driveway 'C' is acceptable.

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

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Average Delay (secs)	Level-of-Service
≤ 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

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

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

CONCLUSIONS

Utilizing projected traffic volumes resulting from the development of this site into a commercial facility such as the one shown on Page A-4 in the Appendix in conjunction with projected 2015 traffic volumes this report concludes that development of the subject site will have no significant adverse impact on the adjacent transportation system, provided that the following recommendations are followed:

RECOMMENDATIONS

- Design of the site should maintain adequate sight distances for traffic approaching, entering, and exiting the site from the proposed driveways.
- All driveways should be constructed utilizing 25 feet minimum radius curb returns or larger if needed to accommodate delivery trucks. The new development should be implemented utilizing three driveways for access. Driveway 'A' (at the N. Super 8 Drive from University Blvd.) should be a full access, Driveway 'B' (at Claremont Ave. from University Blvd.) should be a full access, and Driveway 'C' (from Candelaria Rd.) should be a right-in, right-out only access. The driveways should be unsignalized and should be constructed with one entering lane and one exiting lane.

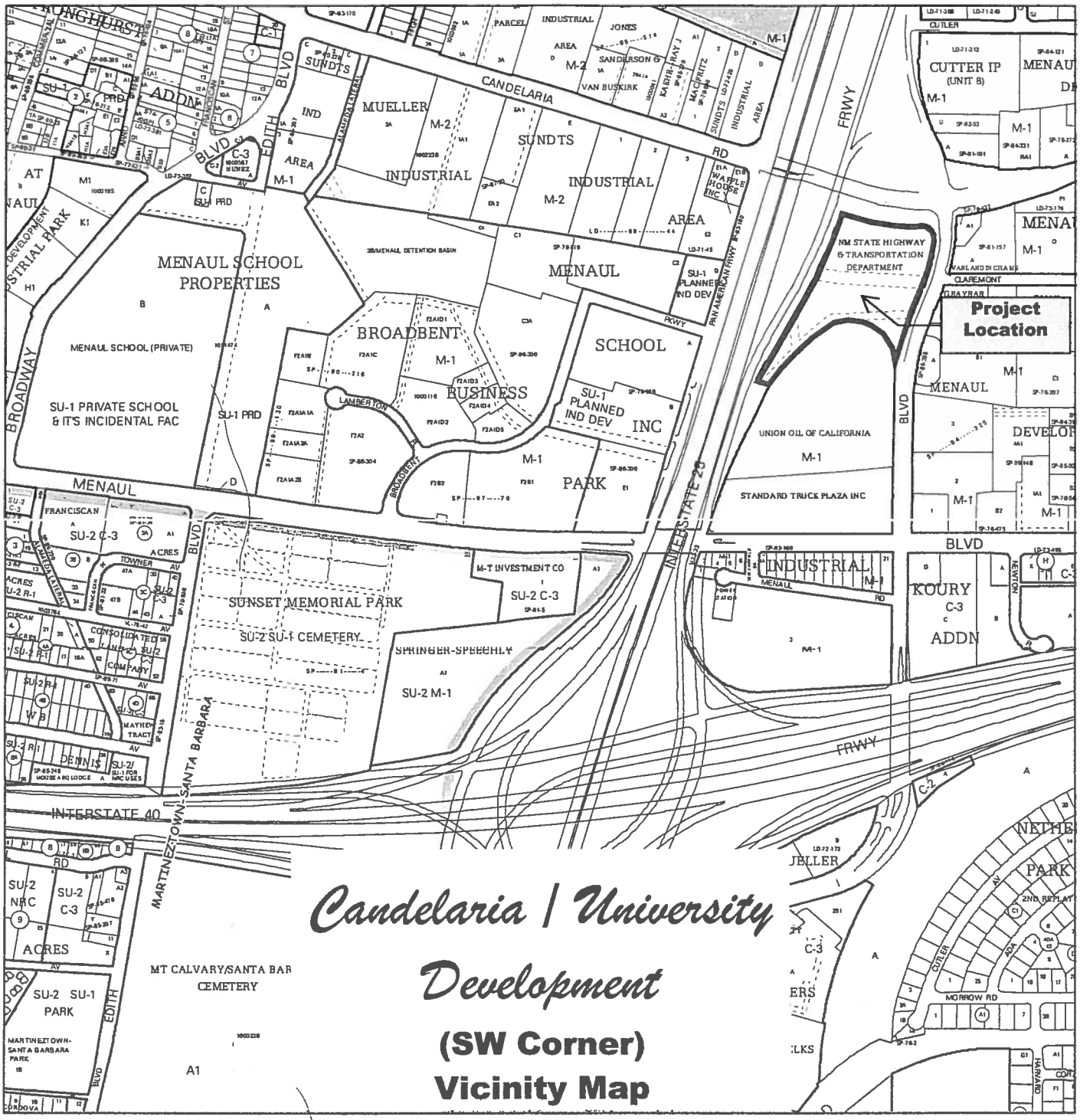
Appendix

APPENDIX

Candelaria / University Development

(SW Corner)

Aerial Photo Map



For more current information and more details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 9/5/2006

Note: Grey Shading Represents Area Outside of the City Limits

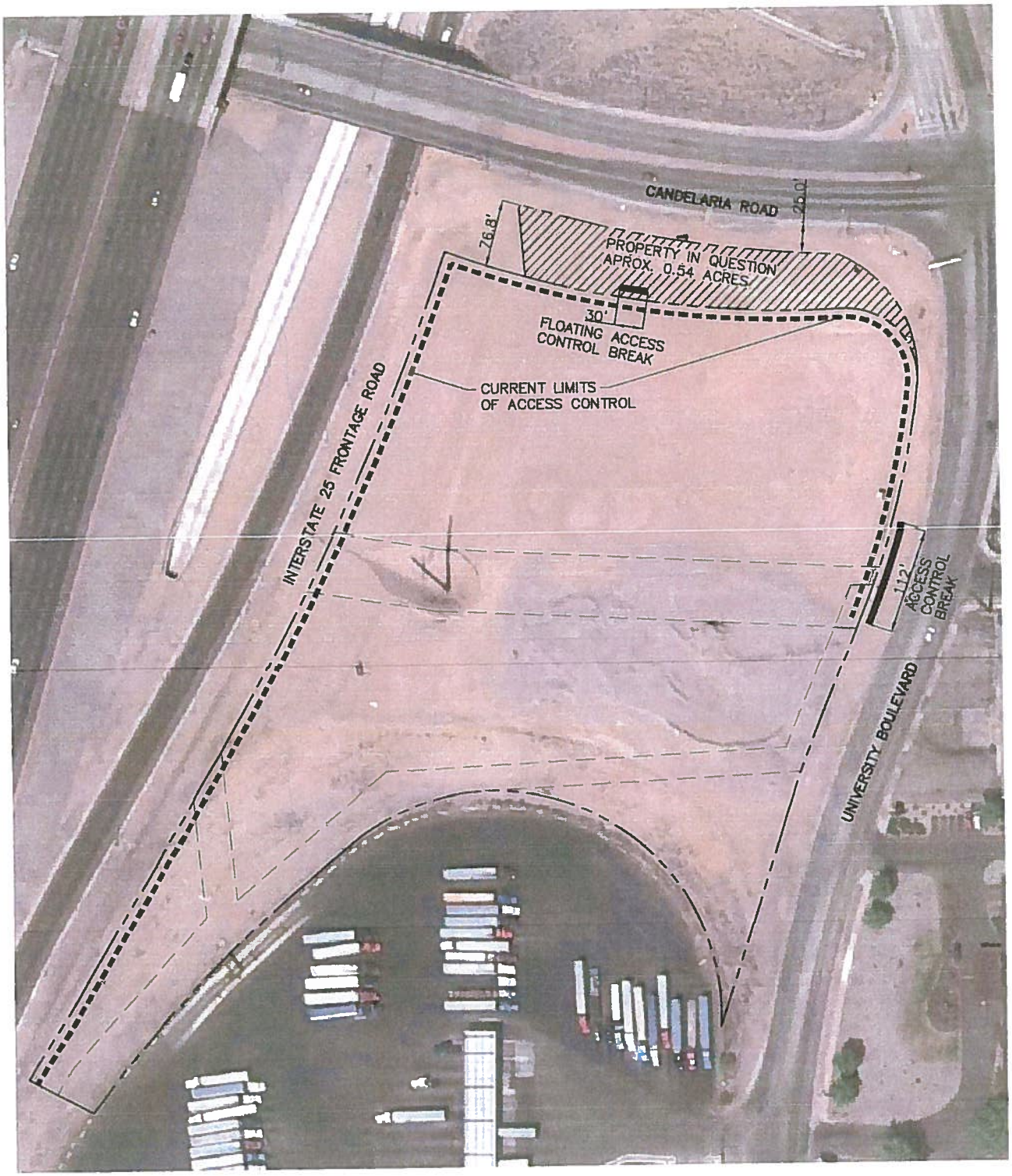
Zone Atlas Page:

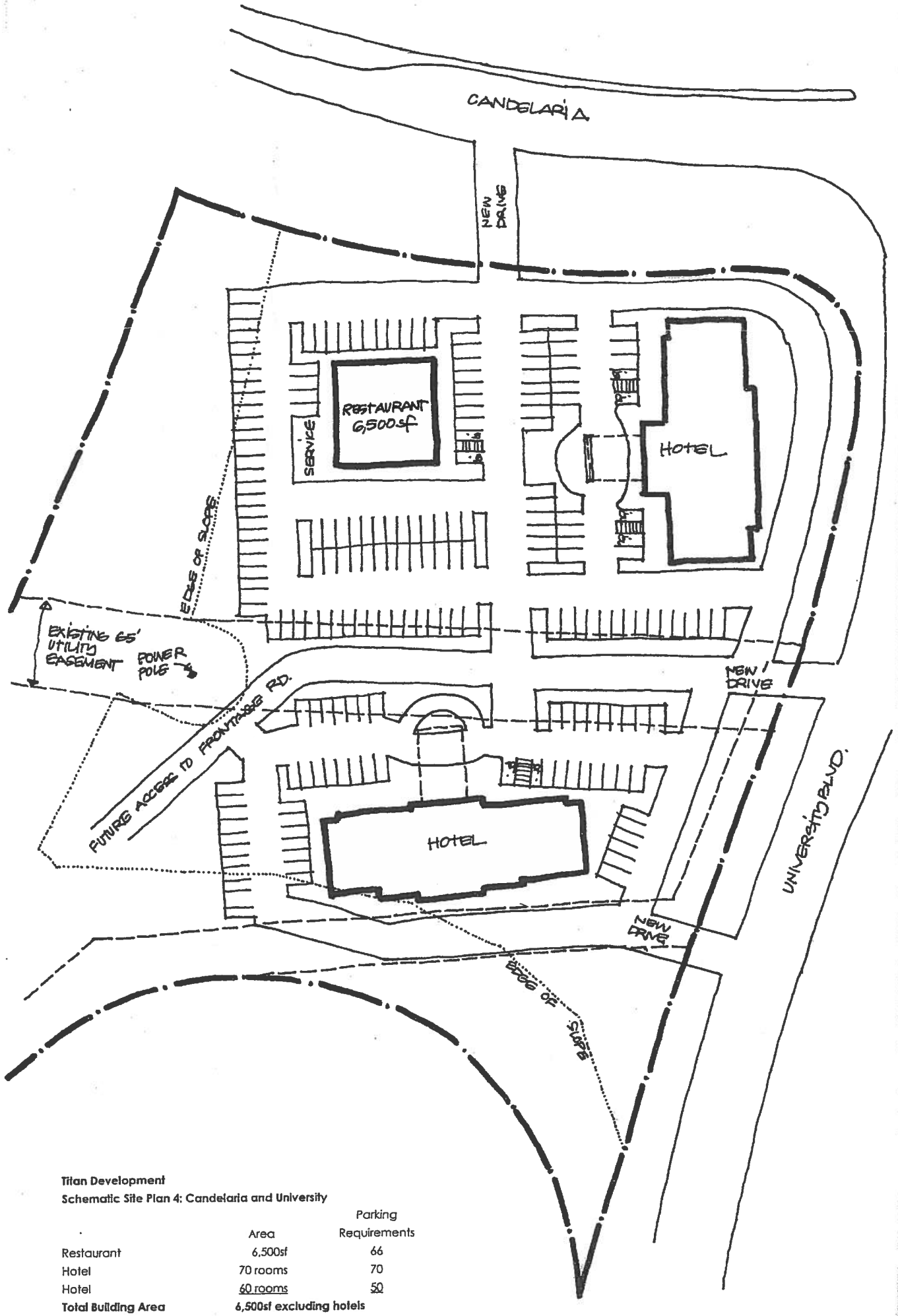
H-15-Z

Selected Symbols

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

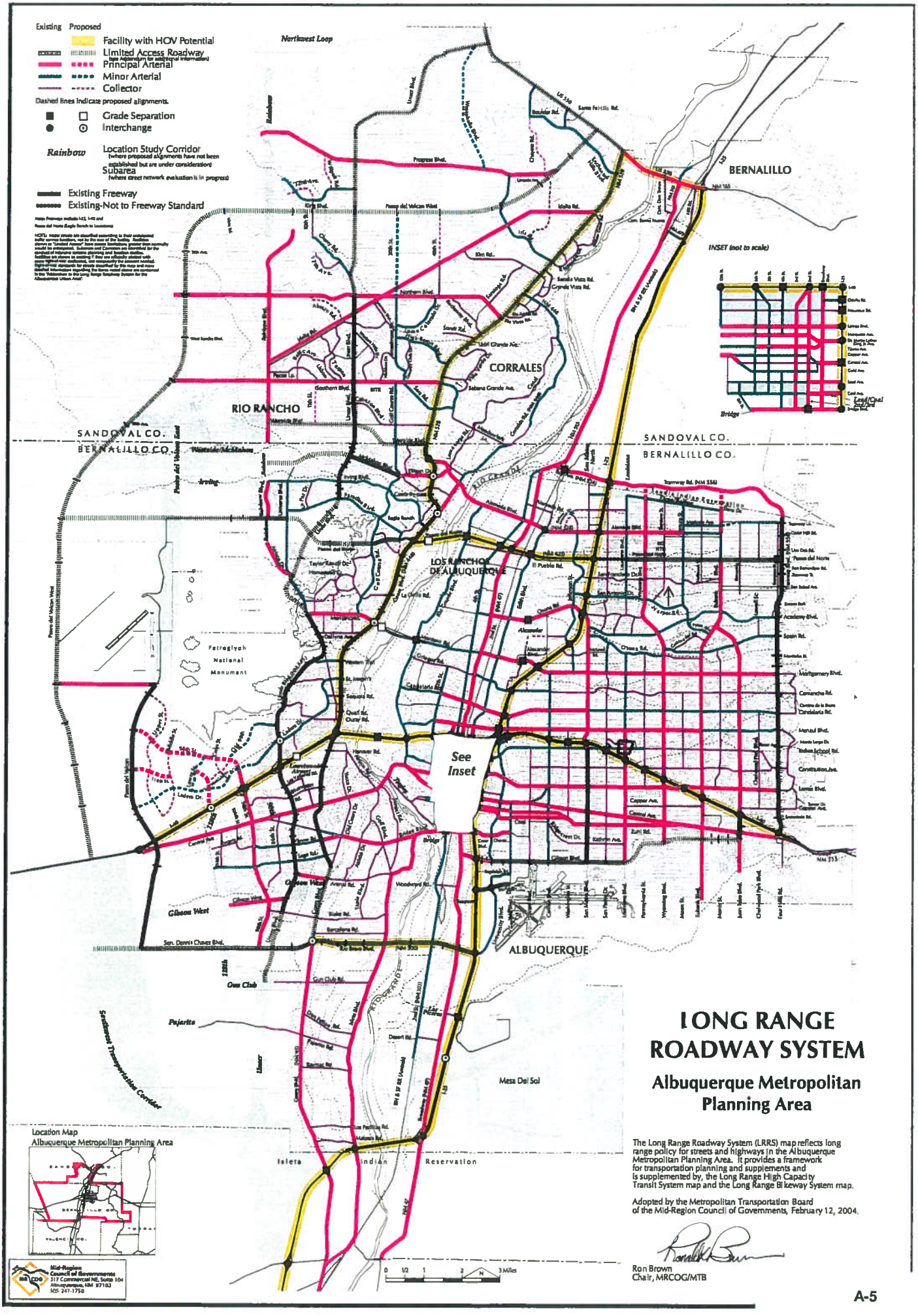
0 750 1,500 Feet





Titan Development
Schematic Site Plan 4: Candelaria and University

	Area	Parking Requirements
Restaurant	6,500sf	66
Hotel	70 rooms	70
Hotel	60 rooms	50
Total Building Area	**6,500sf excluding hotels**	
Parking Required		**186**
Parking Provided		**198**



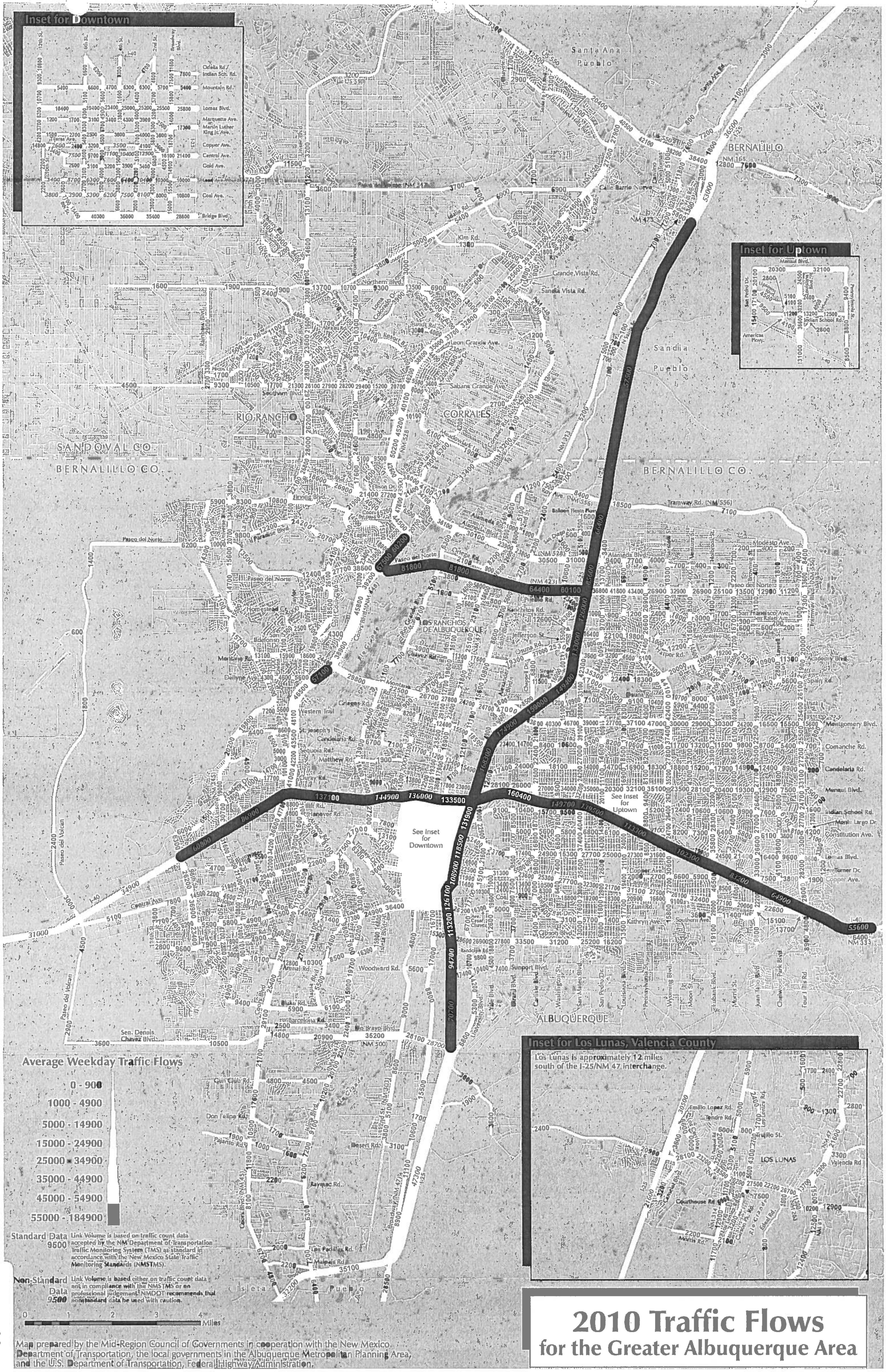
LONG RANGE ROADWAY SYSTEM

Albuquerque Metropolitan Planning Area

The Long Range Roadway System (LRRS) map reflects long range policy for streets and highways in the Albuquerque Metropolitan Planning Area. It provides a framework for transportation planning and supplements and is supplemented by, the Long Range High Capacity Transit System map and the Long Range Bikeway System map.

Adopted by the Metropolitan Transportation Board of the Mid-Region Council of Governments, February 12, 2004.

Ron Brown
Chair, MRCOG/MTB



2010 Traffic Flows
for the Greater Albuquerque Area

Average Weekday Traffic Flows

- 0 - 900
- 1000 - 4900
- 5000 - 14900
- 15000 - 24900
- 25000 - 34900
- 35000 - 44900
- 45000 - 54900
- 55000 - 184900

Standard Data 9600 Link Volume is based on traffic count data accepted by the NM Department of Transportation Traffic Monitoring System (TMS) as standard in accordance with the New Mexico State Traffic Monitoring Standards (NMSTMS).

Non-Standard Data *9500* Link Volume is based either on traffic count data not in compliance with the NMSTMS or on professional judgement. NMDOT recommends that nonstandard data be used with caution.

0 1 2 3 4 Miles

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

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

Candelaria / University Development

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					
Motel (320)	70.00	615	16	29	23	20
Motel (320)	70.00	615	16	29	23	20
High Turnover (Sit-Down) Restaurant (932)	6.50	826	39	36	43	30
Subtotal		**2,056**	**71**	**94**	**89**	**70**

Candelaria / University Development
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	EXIT
	Units					
Motel (320)	*70.00*	615	16	29	23	20
	Occupied Rooms					

ITE Trip Generation Equations:

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

Ln(T) = *0.97* Ln(X) + *2.3*
50% Enter, *50%* Exit

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

Ln(T) = *0.9* Ln(X) + *-0.01*
36% Enter, *64%* Exit

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

T = *0.53* (X) + *5.95*
53% Enter, *47%* Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Candelaria / University Development
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	EXIT
	Units					
Motel (320)	*70.00*	615	16	29	23	20
	Occupied Rooms					

ITE Trip Generation Equations:

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

Ln(T) = ***0.97*** **Ln(X) +** ***2.3***
50% Enter, ***50%*** Exit

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

Ln(T) = ***0.9*** **Ln(X) +** ***-0.01***
36% Enter, ***64%*** Exit

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

T = ***0.53*** **(X) +** ***5.95***
53% Enter, ***47%*** Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Candelaria / University Development
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	EXIT
	Units					
High Turnover (Sit-Down) Restaurant (932)	*6.50* 1,000 S.F.	826	39	36	43	30

ITE Trip Generation Equations:

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

T = *127.15* (X) + *0*

50% Enter, *50%* Exit

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

T = *11.52* (X) + *0*

52% Enter, *48%* Exit

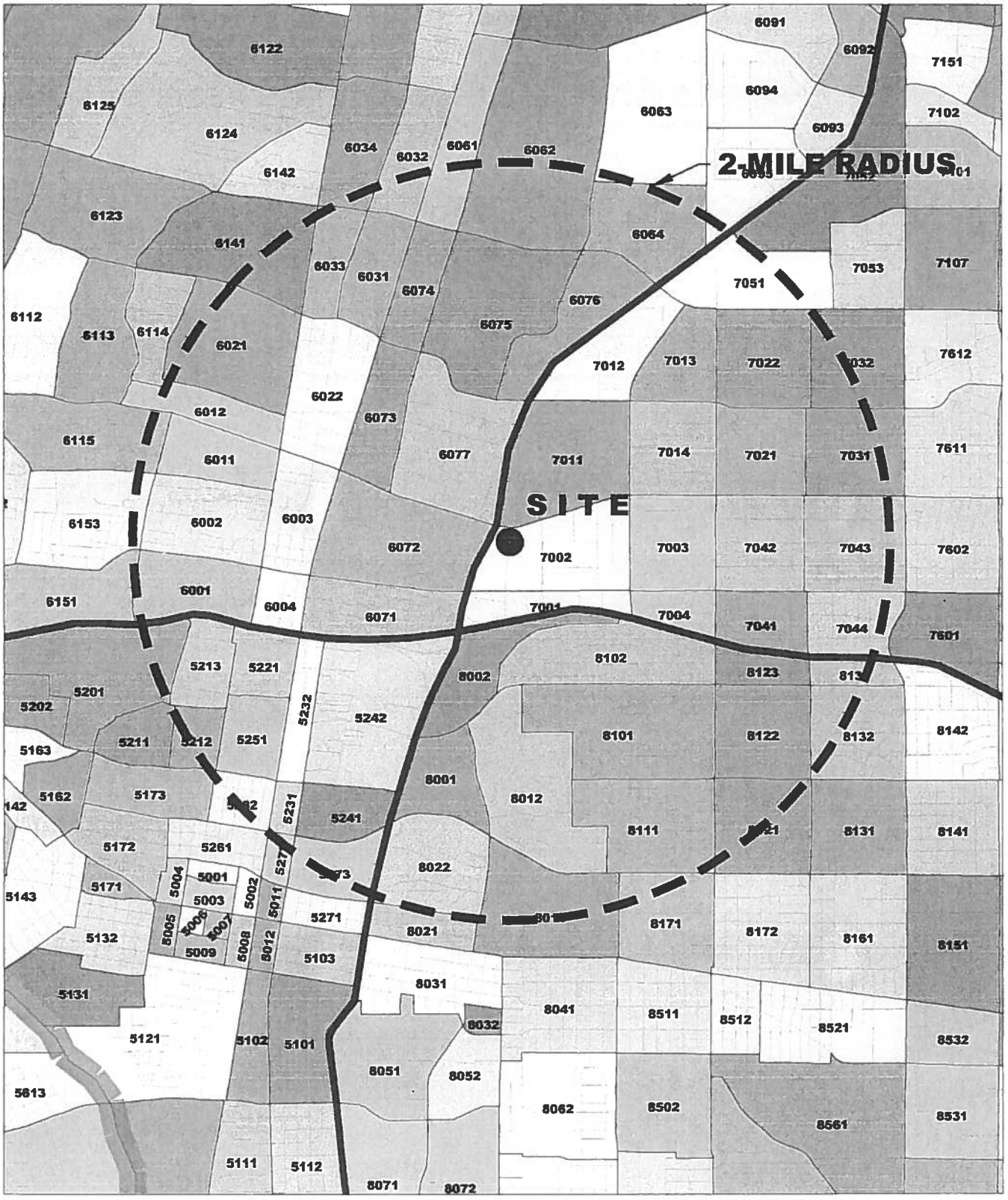
Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

T = *11.15* (X) + *0*

59% Enter, *41%* Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP

Candelaria / University Project (Candelaria Rd. / University Blvd.)

Trip Distribution Table
Candelaria / University Project

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

							(CW) Candelaria Rd. W			(25N) I-25 SB Frntg. Rd. N.			(CE) Candelaria Rd E.		
DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year	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															
5201	10%	925	1143	925	93	0.24%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5212	60%	601	691	601	361	0.94%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5213	100%	273	266	273	273	0.71%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5221	100%	3	3	3	3	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5231	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5232	100%	13	13	13	13	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5241	100%	531	532	531	531	1.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5242	100%	1251	1212	1,251	1,251	3.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5251	100%	176	199	176	176	0.46%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5262	50%	92	102	92	46	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5272	10%	203	192	203	20	0.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5273	60%	412	420	412	247	0.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6001	100%	553	598	553	553	1.44%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6002	100%	1364	1380	1,364	1,364	3.54%	50%	1.77%	682	0%	0.00%	0	0%	0.00%	0
6003	100%	692	739	692	692	1.80%	45%	0.81%	311	0%	0.00%	0	0%	0.00%	0
6004	100%	44	44	44	44	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6011	100%	542	608	542	542	1.41%	90%	1.27%	488	0%	0.00%	0	0%	0.00%	0
6012	90%	954	942	954	859	2.23%	100%	2.23%	859	0%	0.00%	0	0%	0.00%	0
6021	90%	2238	2252	2,238	2,014	5.23%	50%	2.62%	1,007	50%	2.62%	1,007	0%	0.00%	0
6022	100%	1073	1217	1,073	1,073	2.79%	0%	0.00%	0	100%	2.79%	1,073	0%	0.00%	0
6031	100%	260	254	260	260	0.68%	0%	0.00%	0	100%	0.68%	260	0%	0.00%	0
6032	10%	651	629	651	65	0.17%	0%	0.00%	0	100%	0.17%	65	0%	0.00%	0
6033	100%	561	579	561	561	1.46%	0%	0.00%	0	100%	1.46%	561	0%	0.00%	0
6034	5%	449	479	449	22	0.06%	0%	0.00%	0	100%	0.06%	22	0%	0.00%	0
6061	20%	399	386	399	80	0.21%	0%	0.00%	0	100%	0.21%	80	0%	0.00%	0
6062	40%	1318	1275	1,318	527	1.37%	0%	0.00%	0	100%	1.37%	527	0%	0.00%	0
6064	100%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
6071	100%	402	392	402	402	1.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6072	100%	635	614	635	635	1.65%	40%	0.66%	254	0%	0.00%	0	0%	0.00%	0
6073	100%	41	36	41	41	0.11%	0%	0.00%	0	100%	0.11%	41	0%	0.00%	0
6074	100%	50	46	50	50	0.13%	0%	0.00%	0	100%	0.13%	50	0%	0.00%	0
6075	100%	86	82	86	86	0.22%	0%	0.00%	0	100%	0.22%	86	0%	0.00%	0
6076	100%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
6077	100%	339	460	339	339	0.88%	10%	0.09%	34	90%	0.79%	305	0%	0.00%	0

Trip Distribution Table
Candelaria / University Project

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

							(CW) Candelaria Rd. W.			(25N) I-25 SB Frntg. Rd. N.			(CE) Candelaria Rd. E.		
DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year	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															
6115	5%	1400	1358	1,400	70	0.18%	75%	0.14%	53	25%	0.05%	18	0%	0.00%	0
6141	30%	2181	2179	2,181	654	1.70%	50%	0.85%	327	50%	0.85%	327	0%	0.00%	0
6153	5%	1640	1589	1,640	82	0.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7001	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7002	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	30%	0.00%	0
7003	100%	85	80	85	85	0.22%	0%	0.00%	0	0%	0.00%	0	50%	0.11%	43
7004	100%	2	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7011	100%	12	12	12	12	0.03%	0%	0.00%	0	10%	0.00%	1	90%	0.03%	11
7012	100%	505	512	505	505	1.31%	0%	0.00%	0	100%	1.31%	505	0%	0.00%	0
7013	100%	1078	1077	1,078	1,078	2.80%	0%	0.00%	0	100%	2.80%	1,078	0%	0.00%	0
7014	100%	1773	1730	1,773	1,773	4.61%	0%	0.00%	0	10%	0.46%	177	90%	4.15%	1,596
7021	100%	1278	1238	1,278	1,278	3.32%	0%	0.00%	0	50%	1.66%	639	50%	1.66%	639
7022	100%	1672	1619	1,672	1,672	4.34%	0%	0.00%	0	50%	2.17%	836	50%	2.17%	836
7031	80%	1917	1858	1,917	1,534	3.99%	0%	0.00%	0	0%	0.00%	0	100%	3.99%	1,534
7032	40%	1684	1628	1,684	674	1.75%	0%	0.00%	0	100%	1.75%	674	0%	0.00%	0
7041	100%	165	159	165	165	0.43%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7042	100%	1094	1061	1,094	1,094	2.84%	0%	0.00%	0	0%	0.00%	0	50%	1.42%	547
7043	90%	1452	1407	1,452	1,307	3.40%	0%	0.00%	0	0%	0.00%	0	50%	1.70%	654
7044	90%	11	11	11	10	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7051	50%	2853	2755	2,853	1,427	3.71%	0%	0.00%	0	100%	3.71%	1,427	0%	0.00%	0
8001	100%	16	278	16	16	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8002	100%	488	539	488	488	1.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8011	60%	2675	3894	2,675	1,605	4.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8012	100%	455	590	455	455	1.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8022	100%	929	1166	929	929	2.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8101	100%	2301	2223	2,301	2,301	5.98%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8102	100%	1476	1429	1,476	1,476	3.84%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8111	100%	1752	1696	1,752	1,752	4.55%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8121	50%	1210	1170	1,210	605	1.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8122	100%	1244	1207	1,244	1,244	3.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8123	100%	463	446	463	463	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8132	30%	1149	1112	1,149	345	0.90%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8133	70%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8171	15%	1057	1113	1,057	159	0.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
				53,148	38,483	100.00%			4,015			9,759			5,859
									10.43%			25.36%			15.22%

Trip Distribution Table
Candelaria / University Project

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

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2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(CLE) Claremont E.			(ME) Menaul Blvd. E.			(US) University Blvd. S.		
DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year	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															
5201	10%	925	1143	925	93	0.24%	0%	0.00%	0	0%	0.00%	0	10%	0.02%	9
5212	60%	601	691	601	361	0.94%	0%	0.00%	0	0%	0.00%	0	10%	0.09%	36
5213	100%	273	266	273	273	0.71%	0%	0.00%	0	0%	0.00%	0	10%	0.07%	27
5221	100%	3	3	3	3	0.01%	0%	0.00%	0	0%	0.00%	0	10%	0.00%	0
5231	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5232	100%	13	13	13	13	0.03%	0%	0.00%	0	0%	0.00%	0	80%	0.03%	10
5241	100%	531	532	531	531	1.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5242	100%	1251	1212	1,251	1,251	3.25%	0%	0.00%	0	0%	0.00%	0	50%	1.63%	626
5251	100%	176	199	176	176	0.46%	0%	0.00%	0	0%	0.00%	0	85%	0.39%	150
5262	50%	92	102	92	46	0.12%	0%	0.00%	0	0%	0.00%	0	10%	0.01%	5
5272	10%	203	192	203	20	0.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5273	60%	412	420	412	247	0.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6001	100%	553	598	553	553	1.44%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6002	100%	1364	1380	1,364	1,364	3.54%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6003	100%	692	739	692	692	1.80%	0%	0.00%	0	0%	0.00%	0	10%	0.18%	69
6004	100%	44	44	44	44	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6011	100%	542	608	542	542	1.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6012	90%	954	942	954	859	2.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6021	90%	2238	2252	2,238	2,014	5.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6022	100%	1073	1217	1,073	1,073	2.79%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6031	100%	260	254	260	260	0.68%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6032	10%	651	629	651	65	0.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6033	100%	561	579	561	561	1.46%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6034	5%	449	479	449	22	0.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6061	20%	399	386	399	80	0.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6062	40%	1318	1275	1,318	527	1.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6064	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6071	100%	402	392	402	402	1.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6072	100%	635	614	635	635	1.65%	0%	0.00%	0	0%	0.00%	0	10%	0.17%	64
6073	100%	41	36	41	41	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6074	100%	50	46	50	50	0.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6075	100%	86	82	86	86	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6076	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6077	100%	339	460	339	339	0.88%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table
Candelaria / University Project

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DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year	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															
6115	5%	1400	1358	1,400	70	0.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6141	30%	2181	2179	2,181	654	1.70%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6153	5%	1640	1589	1,640	82	0.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7001	100%	0	0	0	0	0.00%	0%	0.00%	0	25%	0.00%	0	25%	0.00%	0
7002	100%	0	0	0	0	0.00%	10%	0.00%	0	30%	0.00%	0	30%	0.00%	0
7003	100%	85	80	85	85	0.22%	0%	0.00%	0	50%	0.11%	43	0%	0.00%	0
7004	100%	2	0	2	2	0.01%	0%	0.00%	0	50%	0.00%	1	50%	0.00%	1
7011	100%	12	12	12	12	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7012	100%	505	512	505	505	1.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7013	100%	1078	1077	1,078	1,078	2.80%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7014	100%	1773	1730	1,773	1,773	4.61%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7021	100%	1278	1238	1,278	1,278	3.32%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7022	100%	1672	1619	1,672	1,672	4.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7031	80%	1917	1858	1,917	1,534	3.99%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7032	40%	1684	1628	1,684	674	1.75%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7041	100%	165	159	165	165	0.43%	0%	0.00%	0	20%	0.09%	33	20%	0.09%	33
7042	100%	1094	1061	1,094	1,094	2.84%	0%	0.00%	0	50%	1.42%	547	0%	0.00%	0
7043	90%	1452	1407	1,452	1,307	3.40%	0%	0.00%	0	50%	1.70%	654	0%	0.00%	0
7044	90%	11	11	11	10	0.03%	0%	0.00%	0	20%	0.01%	2	20%	0.01%	2
7051	50%	2853	2755	2,853	1,427	3.71%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8001	100%	16	278	16	16	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8002	100%	488	539	488	488	1.27%	0%	0.00%	0	0%	0.00%	0	50%	0.63%	244
8011	60%	2675	3894	2,675	1,605	4.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8012	100%	455	590	455	455	1.18%	0%	0.00%	0	0%	0.00%	0	30%	0.35%	137
8022	100%	929	1166	929	929	2.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8101	100%	2301	2223	2,301	2,301	5.98%	0%	0.00%	0	50%	2.99%	1,151	0%	0.00%	0
8102	100%	1476	1429	1,476	1,476	3.84%	0%	0.00%	0	50%	1.92%	738	0%	0.00%	0
8111	100%	1752	1696	1,752	1,752	4.55%	0%	0.00%	0	50%	2.28%	876	0%	0.00%	0
8121	50%	1210	1170	1,210	605	1.57%	0%	0.00%	0	100%	1.57%	605	0%	0.00%	0
8122	100%	1244	1207	1,244	1,244	3.23%	0%	0.00%	0	100%	3.23%	1,244	0%	0.00%	0
8123	100%	463	446	463	463	1.20%	0%	0.00%	0	100%	1.20%	463	0%	0.00%	0
8132	30%	1149	1112	1,149	345	0.90%	0%	0.00%	0	100%	0.90%	345	0%	0.00%	0
8133	70%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
8171	15%	1057	1113	1,057	159	0.41%	0%	0.00%	0	50%	0.21%	80	0%	0.00%	0
				53,148	38,483	100.00%			-			6,780			1,412
									0.00%			17.62%			3.67%

Trip Distribution Table
Candelaria / University Project

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

							(25S) I-25 NB Frntg. Rd. S.			(MW) Menaul Blvd. W.		
DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2015	2025	2015								
Boundary Specified on DASZ Map												
5201	10%	925	1143	925	93	0.24%	90%	0.22%	84	0%	0.00%	0
5212	60%	601	691	601	361	0.94%	90%	0.84%	325	0%	0.00%	0
5213	100%	273	266	273	273	0.71%	90%	0.64%	246	0%	0.00%	0
5221	100%	3	3	3	3	0.01%	90%	0.01%	3	0%	0.00%	0
5231	100%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0
5232	100%	13	13	13	13	0.03%	20%	0.01%	3	0%	0.00%	0
5241	100%	531	532	531	531	1.38%	100%	1.38%	531	0%	0.00%	0
5242	100%	1251	1212	1,251	1,251	3.25%	50%	1.63%	626	0%	0.00%	0
5251	100%	176	199	176	176	0.46%	15%	0.07%	26	0%	0.00%	0
5262	50%	92	102	92	46	0.12%	90%	0.11%	41	0%	0.00%	0
5272	10%	203	192	203	20	0.05%	100%	0.05%	20	0%	0.00%	0
5273	60%	412	420	412	247	0.64%	100%	0.64%	247	0%	0.00%	0
6001	100%	553	598	553	553	1.44%	50%	0.72%	277	50%	0.72%	277
6002	100%	1364	1380	1,364	1,364	3.54%	0%	0.00%	0	50%	1.77%	682
6003	100%	692	739	692	692	1.80%	0%	0.00%	0	45%	0.81%	311
6004	100%	44	44	44	44	0.11%	50%	0.06%	22	50%	0.06%	22
6011	100%	542	608	542	542	1.41%	0%	0.00%	0	10%	0.14%	54
6012	90%	954	942	954	859	2.23%	0%	0.00%	0	0%	0.00%	0
6021	90%	2238	2252	2,238	2,014	5.23%	0%	0.00%	0	0%	0.00%	0
6022	100%	1073	1217	1,073	1,073	2.79%	0%	0.00%	0	0%	0.00%	0
6031	100%	260	254	260	260	0.68%	0%	0.00%	0	0%	0.00%	0
6032	10%	651	629	651	65	0.17%	0%	0.00%	0	0%	0.00%	0
6033	100%	561	579	561	561	1.46%	0%	0.00%	0	0%	0.00%	0
6034	5%	449	479	449	22	0.06%	0%	0.00%	0	0%	0.00%	0
6061	20%	399	386	399	80	0.21%	0%	0.00%	0	0%	0.00%	0
6062	40%	1318	1275	1,318	527	1.37%	0%	0.00%	0	0%	0.00%	0
6064	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
6071	100%	402	392	402	402	1.04%	50%	0.52%	201	50%	0.52%	201
6072	100%	635	614	635	635	1.65%	10%	0.17%	64	40%	0.66%	254
6073	100%	41	36	41	41	0.11%	0%	0.00%	0	0%	0.00%	0
6074	100%	50	46	50	50	0.13%	0%	0.00%	0	0%	0.00%	0
6075	100%	86	82	86	86	0.22%	0%	0.00%	0	0%	0.00%	0
6076	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
6077	100%	339	460	339	339	0.88%	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table
Candelaria / University Project

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

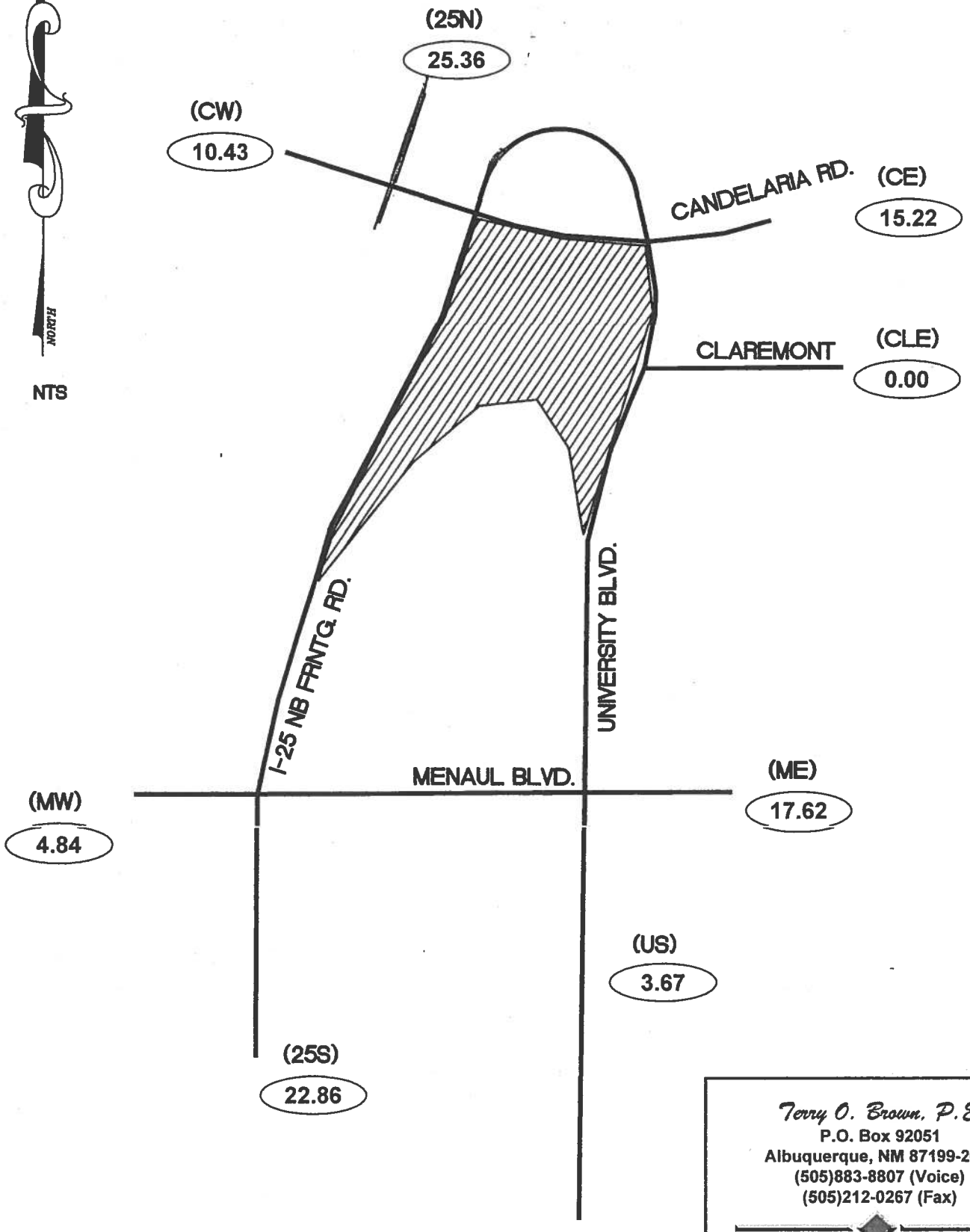
2015 and 2025 Data Taken from Mid-Region Council of Governments'
2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(25S) I-25 NB Frntg. Rd. S.			(MW) Menaul Blvd. W.		
DASZ #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2015	2025	2015								
Boundary Specified on DASZ Map												
6115	5%	1400	1358	1,400	70	0.18%	0%	0.00%	0	0%	0.00%	0
6141	30%	2181	2179	2,181	654	1.70%	0%	0.00%	0	0%	0.00%	0
6153	5%	1640	1589	1,640	82	0.21%	25%	0.05%	21	75%	0.16%	62
7001	100%	0	0	0	0	0.00%	50%	0.00%	0	0%	0.00%	0
7002	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
7003	100%	85	80	85	85	0.22%	0%	0.00%	0	0%	0.00%	0
7004	100%	2	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0
7011	100%	12	12	12	12	0.03%	0%	0.00%	0	0%	0.00%	0
7012	100%	505	512	505	505	1.31%	0%	0.00%	0	0%	0.00%	0
7013	100%	1078	1077	1,078	1,078	2.80%	0%	0.00%	0	0%	0.00%	0
7014	100%	1773	1730	1,773	1,773	4.61%	0%	0.00%	0	0%	0.00%	0
7021	100%	1278	1238	1,278	1,278	3.32%	0%	0.00%	0	0%	0.00%	0
7022	100%	1672	1619	1,672	1,672	4.34%	0%	0.00%	0	0%	0.00%	0
7031	80%	1917	1858	1,917	1,534	3.99%	0%	0.00%	0	0%	0.00%	0
7032	40%	1684	1628	1,684	674	1.75%	0%	0.00%	0	0%	0.00%	0
7041	100%	165	159	165	165	0.43%	60%	0.26%	99	0%	0.00%	0
7042	100%	1094	1061	1,094	1,094	2.84%	0%	0.00%	0	0%	0.00%	0
7043	90%	1452	1407	1,452	1,307	3.40%	0%	0.00%	0	0%	0.00%	0
7044	90%	11	11	11	10	0.03%	60%	0.02%	6	0%	0.00%	0
7051	50%	2853	2755	2,853	1,427	3.71%	0%	0.00%	0	0%	0.00%	0
8001	100%	16	278	16	16	0.04%	100%	0.04%	16	0%	0.00%	0
8002	100%	488	539	488	488	1.27%	50%	0.63%	244	0%	0.00%	0
8011	60%	2675	3894	2,675	1,605	4.17%	100%	4.17%	1,605	0%	0.00%	0
8012	100%	455	590	455	455	1.18%	70%	0.83%	319	0%	0.00%	0
8022	100%	929	1166	929	929	2.41%	100%	2.41%	929	0%	0.00%	0
8101	100%	2301	2223	2,301	2,301	5.98%	50%	2.99%	1,151	0%	0.00%	0
8102	100%	1476	1429	1,476	1,476	3.84%	50%	1.92%	738	0%	0.00%	0
8111	100%	1752	1696	1,752	1,752	4.55%	50%	2.28%	876	0%	0.00%	0
8121	50%	1210	1170	1,210	605	1.57%	0%	0.00%	0	0%	0.00%	0
8122	100%	1244	1207	1,244	1,244	3.23%	0%	0.00%	0	0%	0.00%	0
8123	100%	463	446	463	463	1.20%	0%	0.00%	0	0%	0.00%	0
8132	30%	1149	1112	1,149	345	0.90%	0%	0.00%	0	0%	0.00%	0
8133	70%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
8171	15%	1057	1113	1,057	159	0.41%	50%	0.21%	80	0%	0.00%	0
				53,148	38,483	100.00%			8,796			1,863
									22.86%			4.84%

Candelaria / University Project

(Candelaria Rd. / University Blvd.)

Trip Distribution Map (%)



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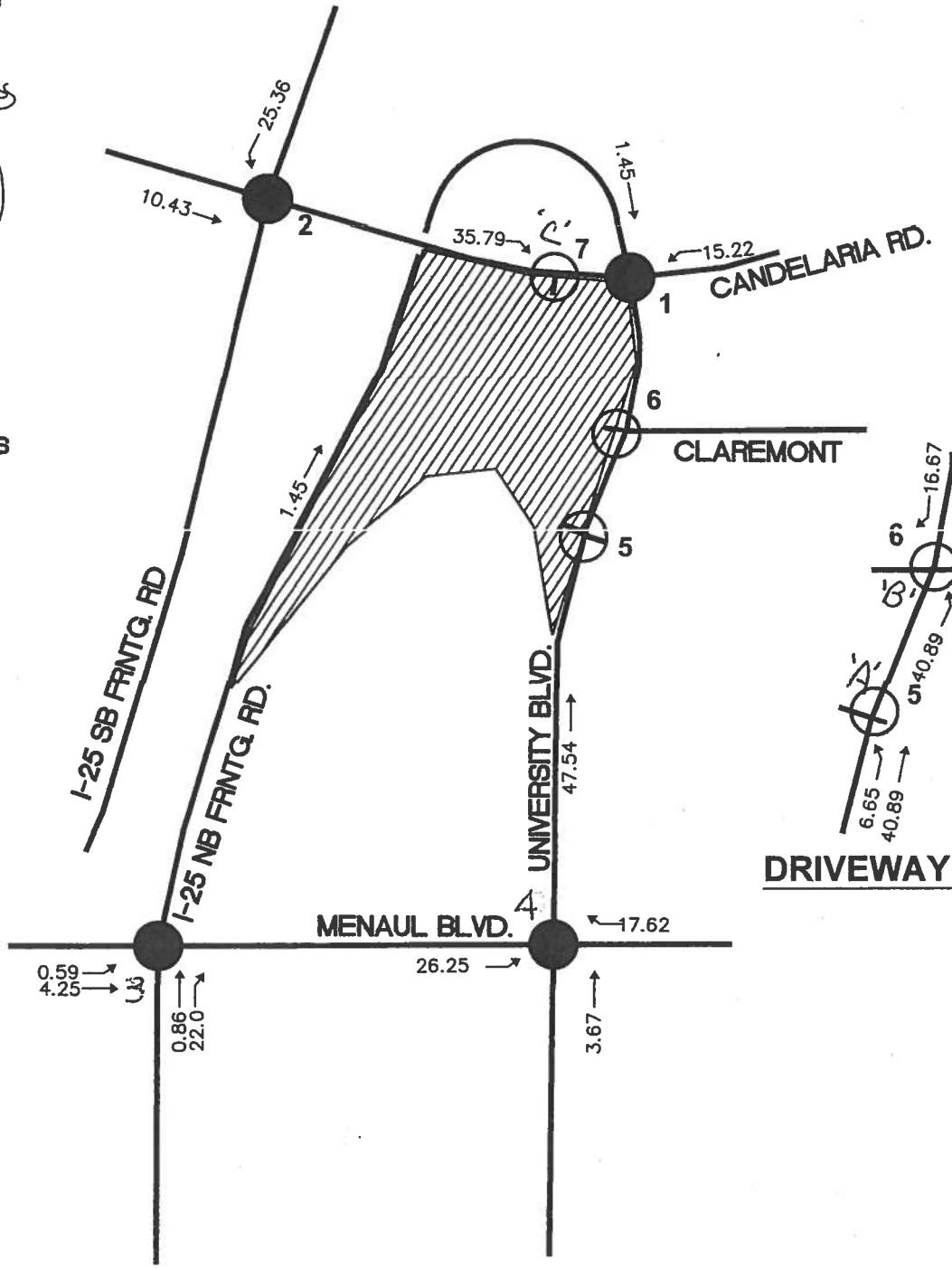
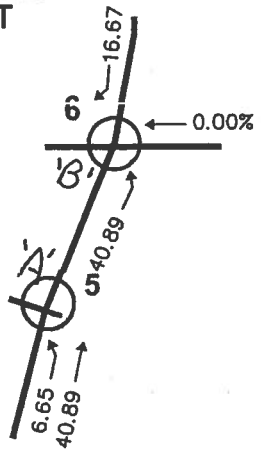
Candelaria / University Project

(Candelaria Rd. / University Blvd.)

Trip Assignments (% Entering)

NTS





DRIVEWAY DETAIL

SIGNALIZED INTERSECTION

UNSIGNALIZED INTERSECTION

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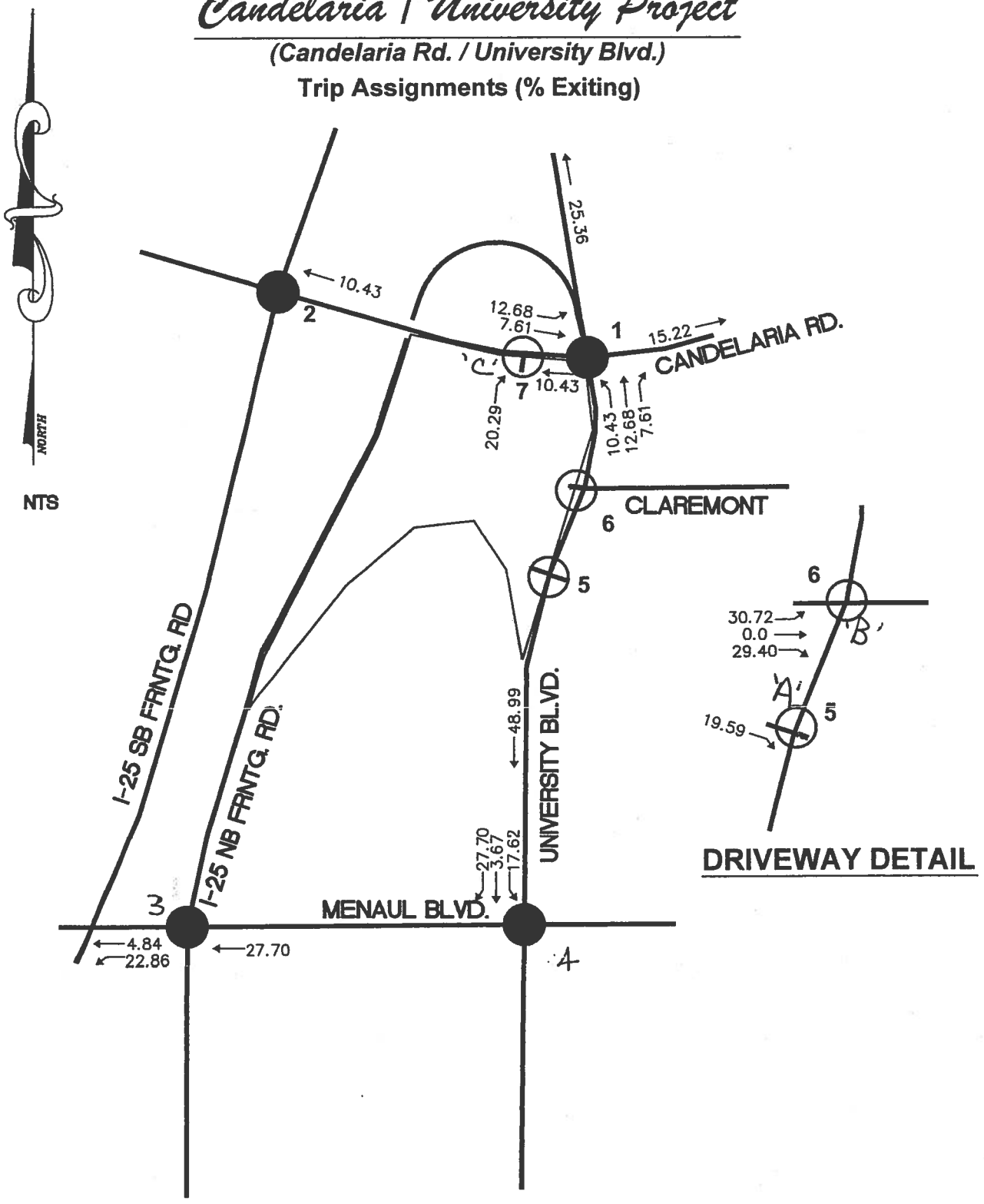
Candelaria / University Project

(Candelaria Rd. / University Blvd.)

Trip Assignments (% Exiting)



SIGNALIZED INTERSECTION

UNSIGNALIZED INTERSECTION

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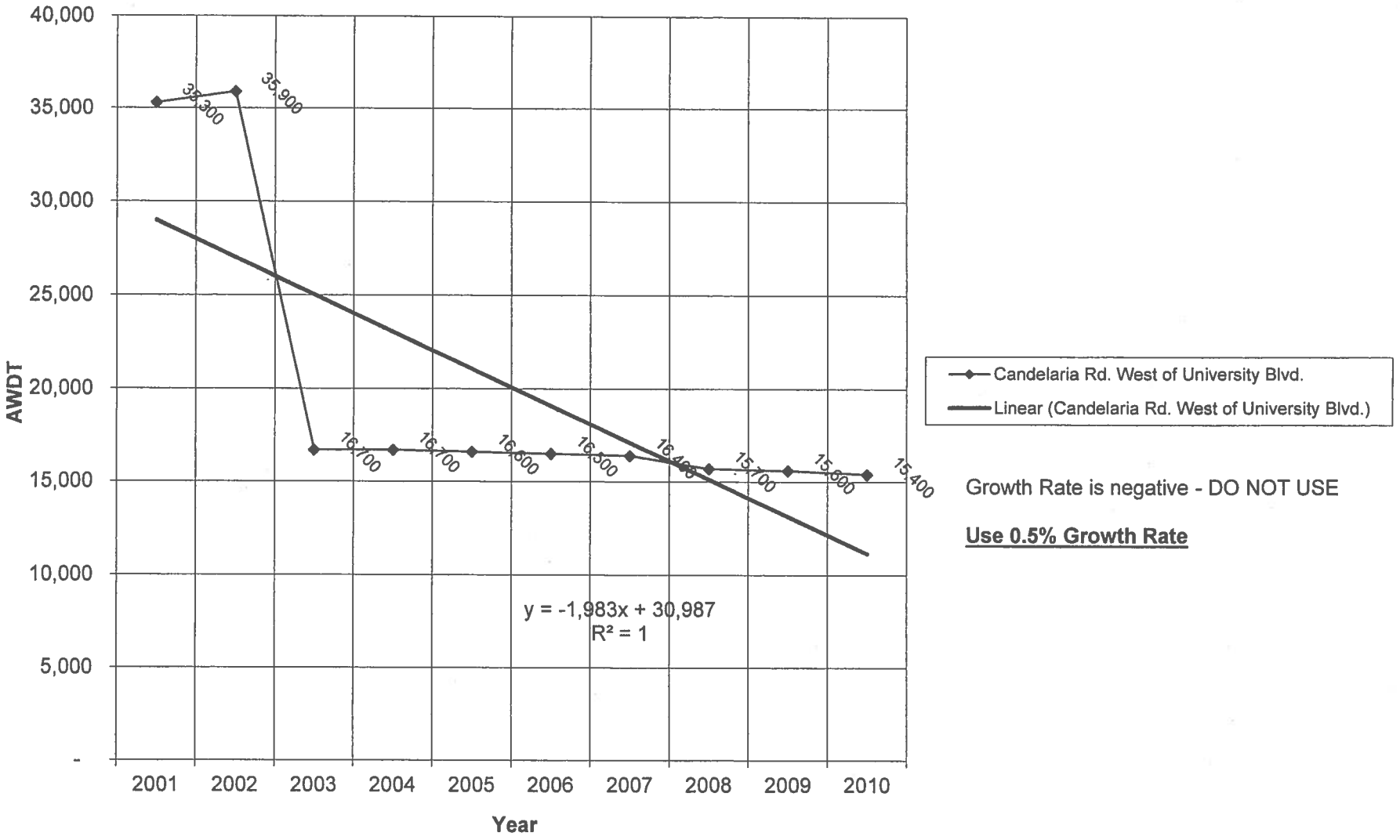
Candelaria / University Development

Historic Growth Rate Table

Traffic Flows from MRCOG Map

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Candelaria Rd. West of University Blvd.	35,300	35,900	16,700	16,700	16,600	16,500	16,400	15,700	15,600	15,400
Candelaria Rd. East of University Blvd.	32,900	32,900	32,800	19,900	19,700	19,500	19,300	17,900	17,600	17,400
University Blvd. South of Candelaria Rd.	19,800	19,800	11,900	11,700	11,600	8,000	7,900	7,800	12,600	12,400
Menaul Blvd. West of University Blvd.	20,700	21,000	21,200	21,700	21,600	21,400	21,200	23,400	23,300	23,000
Menaul Blvd. East of University Blvd.	32,400	32,500	23,000	22,800	22,500	22,300	22,000	29,000	28,500	28,100
University Blvd. South of Menaul Blvd.	18,200	18,300	20,100	19,900	19,700	19,500	19,300	19,600	19,200	19,000

Historic Growth Chart Candelaria Rd. West of University Blvd. (2001-2010)

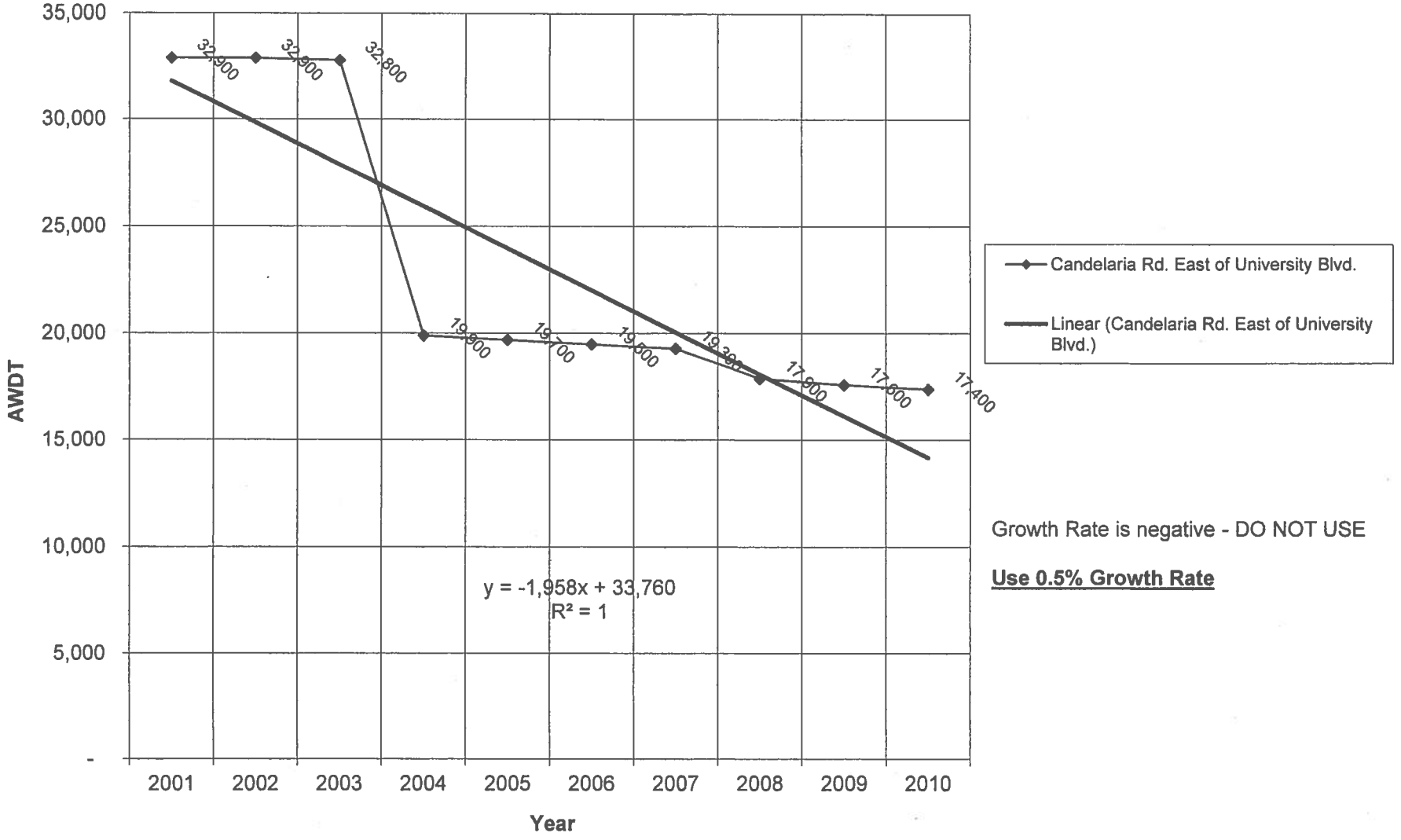


Growth Rate is negative - DO NOT USE

Use 0.5% Growth Rate

Cand_Univ_Growth.xls

Historic Growth Chart Candelaria Rd. East of University Blvd. (2001-2010)

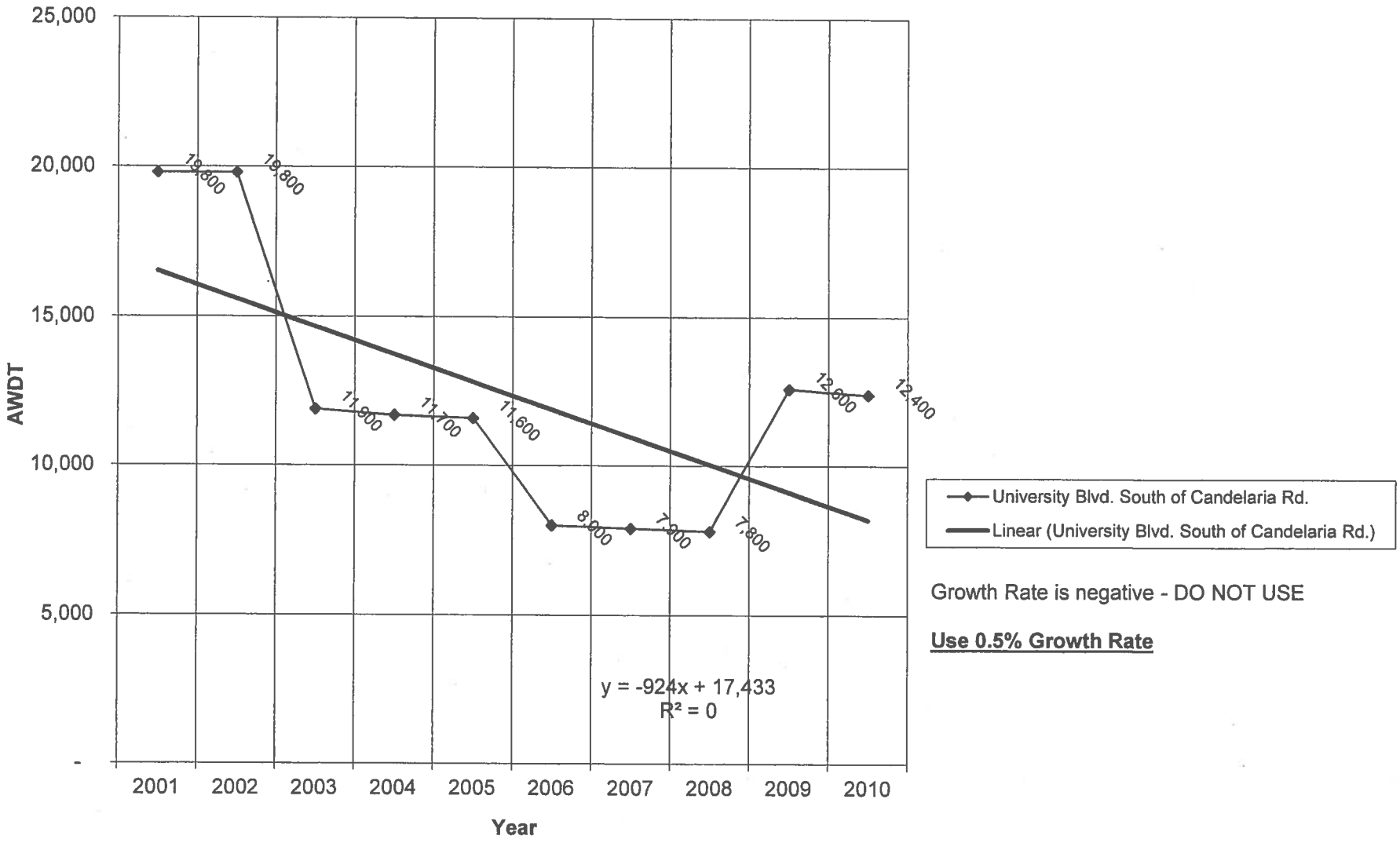


Growth Rate is negative - DO NOT USE

Use 0.5% Growth Rate

Cand_Univ_Growth.xls

Historic Growth Chart University Blvd. South of Candelaria Rd. (2001-2010)

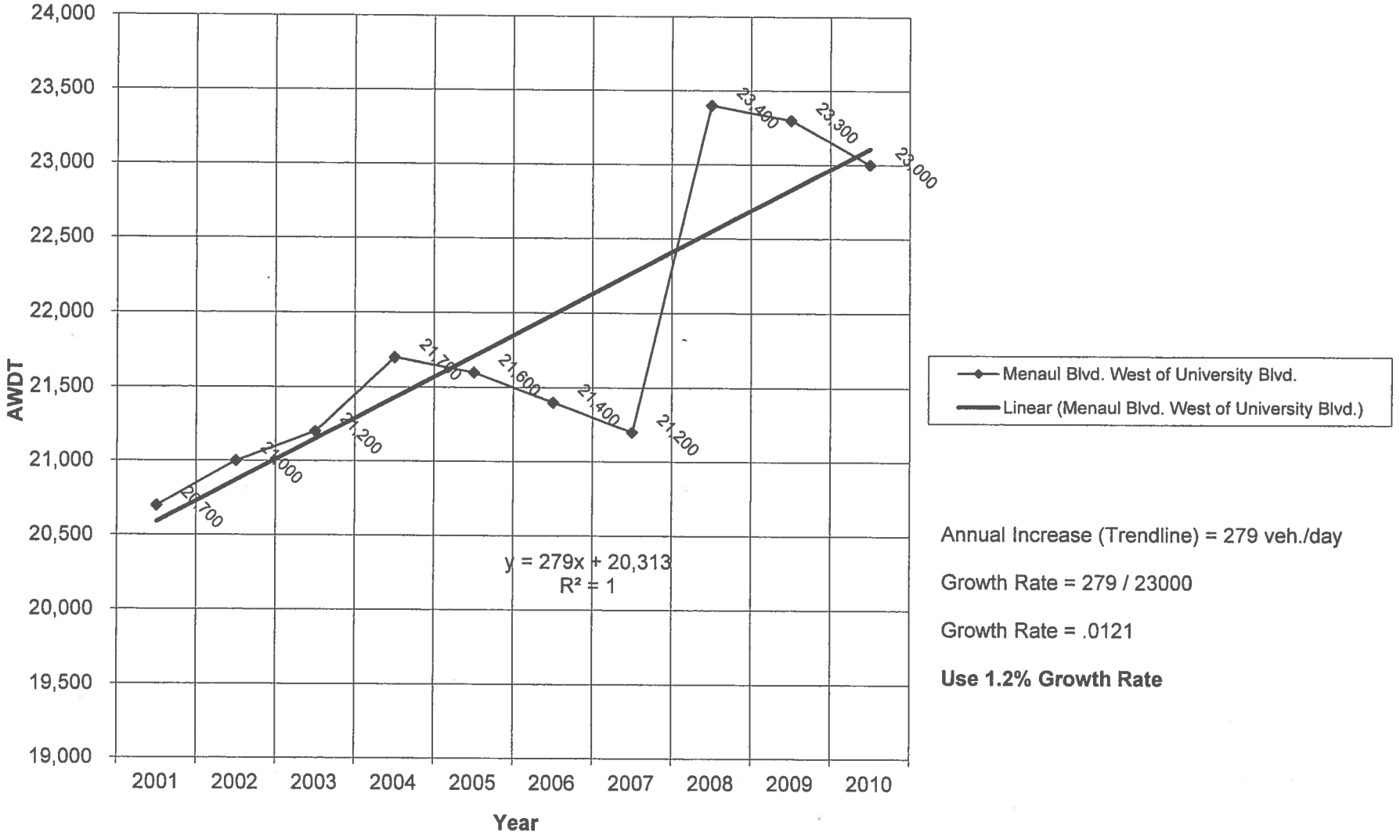


Growth Rate is negative - DO NOT USE

Use 0.5% Growth Rate

Cand_Univ_Growth.xls

Historic Growth Chart Menaul Blvd. West of University Blvd. (2001-2010)



Annual Increase (Trendline) = 279 veh./day

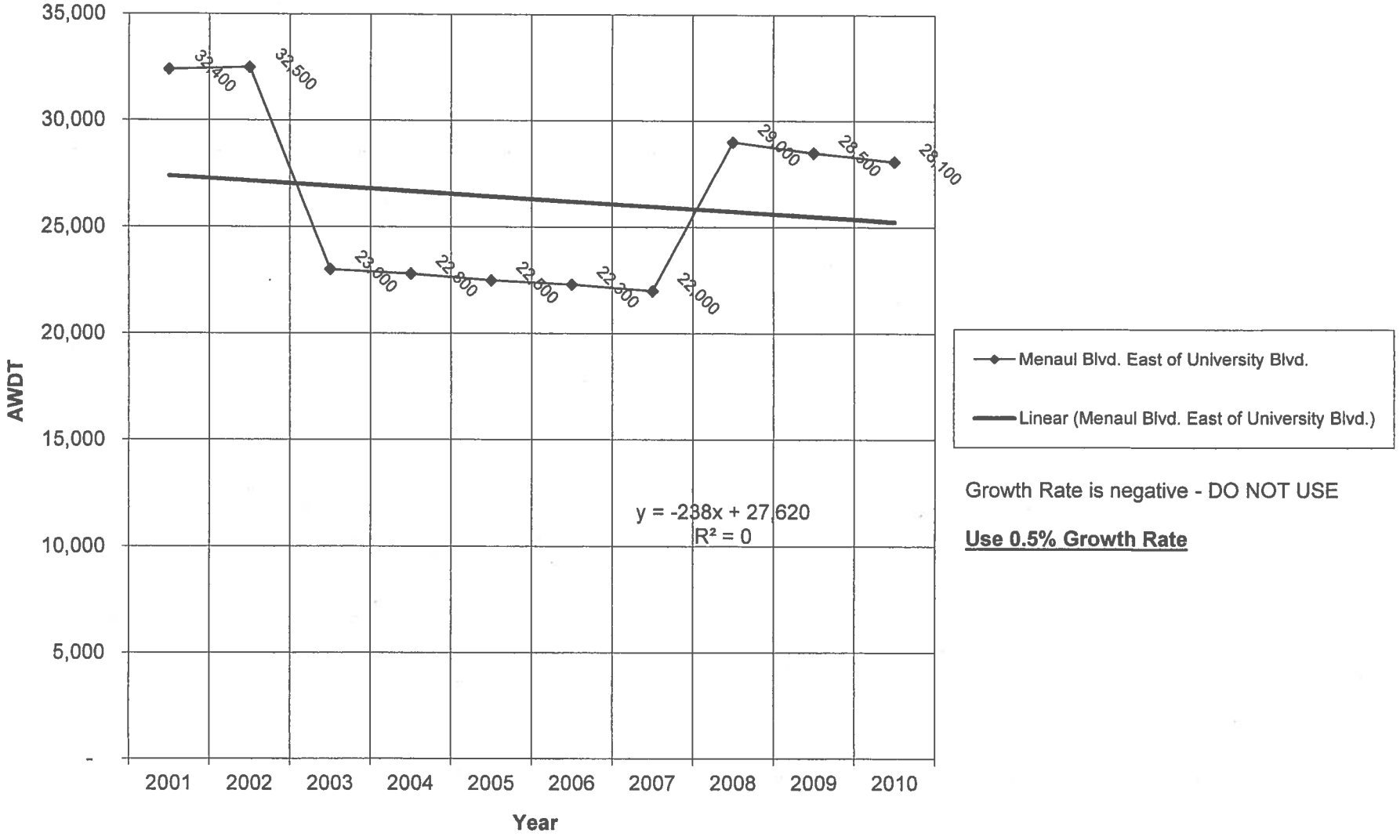
Growth Rate = 279 / 23000

Growth Rate = .0121

Use 1.2% Growth Rate

Cand_Univ_Growth.xls

Historic Growth Chart Menaul Blvd. East of University Blvd. (2001-2010)

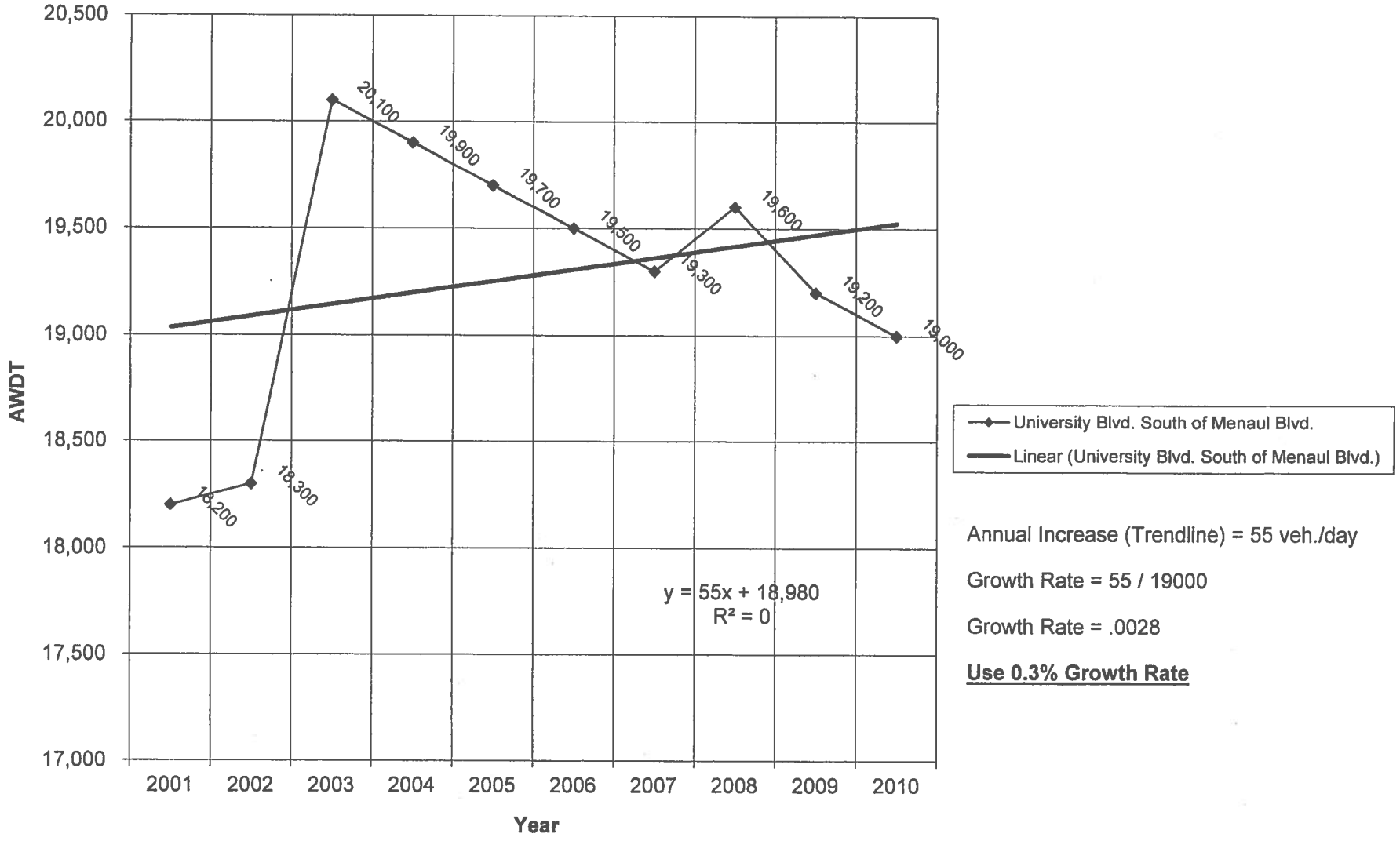


Growth Rate is negative - DO NOT USE

Use 0.5% Growth Rate

Cand_Univ_Growth.xls

Historic Growth Chart University Blvd. South of Menaul Blvd. (2001-2010)



Annual Increase (Trendline) = 55 veh./day

Growth Rate = 55 / 19000

Growth Rate = .0028

Use 0.3% Growth Rate

Cand_Univ_Growth.xls

Candelaria / University Project

(Candelaria Rd. / University Blvd.)

Growth Rate Map (%)

NTS

* Generic growth rate of 0.5% used where rate is negative or unavailable

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Candelaria / University Project

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2015) - 100% Development

INTERSECTION: **Summary**

Candelaria Blvd / University Blvd

(1)

3.0% Truck

	0.92			0.90			0.90			0.85			PHF
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	99	454	161	79	338	120	80	224	73	18	3	13	
2015 (NO BUILD - A.M.)	*100*	*461*	*163*	*80*	*343*	*122*	*81*	*227*	*74*	*18*	*3*	*13*	
2015 (BUILD - A.M.)	***112***	***468***	***163***	***91***	***343***	***122***	***91***	***239***	***81***	***18***	***4***	***13***	

	0.97			0.90			0.76			0.88			PHF
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	120	488	135	87	610	192	120	426	96	36	6	18	
2015 (NO BUILD - P.M.)	*122*	*495*	*137*	*88*	*619*	*195*	*122*	*432*	*97*	*37*	*6*	*18*	
2015 (BUILD - P.M.)	***131***	***500***	***137***	***102***	***619***	***195***	***129***	***441***	***102***	***37***	***7***	***18***	

Candelaria Blvd / I-25 SB ramp

(2)

3.0% Truck

	0.79			0.88			0.75			0.90			PHF
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	747	132	75	510	0	0	0	0	203	409	157	
2015 (NO BUILD - A.M.)	*0*	*758*	*134*	*76*	*518*	*0*	*0*	*0*	*0*	*206*	*415*	*159*	
2015 (BUILD - A.M.)	***0***	***765***	***134***	***76***	***528***	***0***	***0***	***0***	***0***	***224***	***415***	***159***	

	0.95			0.89			0.75			0.95			PHF
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	571	91	73	653	0	0	0	0	166	276	156	
2015 (NO BUILD - P.M.)	*0*	*580*	*92*	*74*	*663*	*0*	*0*	*0*	*0*	*168*	*280*	*158*	
2015 (BUILD - P.M.)	***0***	***589***	***92***	***74***	***670***	***0***	***0***	***0***	***0***	***191***	***280***	***158***	

Menaul Blvd / I-25 NB ramp

(3)

3.0% Truck

	0.88			0.93			0.76			0.85			PHF
	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (I-25 NB ramp)			Southbound (I-25 NB ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	118	799	0	0	828	74	88	223	128	0	0	0	
2015 (NO BUILD - A.M.)	*122*	*828*	*0*	*0*	*840*	*75*	*89*	*226*	*130*	*0*	*0*	*0*	
2015 (BUILD - A.M.)	***122***	***831***	***0***	***0***	***866***	***75***	***89***	***227***	***146***	***0***	***0***	***0***	

	0.91			0.75			0.91			0.85			PHF
	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (I-25 NB ramp)			Southbound (I-25 NB ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	195	923	0	0	807	74	68	735	145	0	0	0	
2015 (NO BUILD - P.M.)	*202*	*956*	*0*	*0*	*819*	*75*	*69*	*746*	*147*	*0*	*0*	*0*	
2015 (BUILD - P.M.)	***203***	***960***	***0***	***0***	***838***	***75***	***69***	***747***	***167***	***0***	***0***	***0***	

Menaul Blvd / University Blvd

(4)

3.0% Truck

	0.92			0.91			0.78			0.85			PHF
	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	74	626	216	225	607	63	151	281	126	49	238	27	
2015 (NO BUILD - A.M.)	*75*	*635*	*219*	*228*	*616*	*64*	*152*	*284*	*127*	*50*	*242*	*27*	
2015 (BUILD - A.M.)	***94***	***635***	***219***	***228***	***616***	***77***	***152***	***287***	***127***	***67***	***245***	***53***	

	0.87			0.93			0.97			0.89			PHF
	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	65	825	170	197	854	92	176	698	264	62	203	33	
2015 (NO BUILD - P.M.)	*66*	*837*	*173*	*200*	*867*	*93*	*178*	*704*	*266*	*63*	*206*	*33*	
2015 (BUILD - P.M.)	***89***	***837***	***173***	***200***	***867***	***109***	***178***	***707***	***266***	***75***	***209***	***52***	

Candelaria / University Project

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2015) - 100% Development

INTERSECTION: **Summary**

N.Super 8 drive / University Blvd

(5)	0.85			0.75			0.91			0.80			PHF
	Eastbound (N.Super 8 drive)			Westbound (N.Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)			
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	5	0	3	0	447	4	2	314	0	
2015 (NO BUILD - A.M.)	*0*	*0*	*0*	*5*	*0*	*3*	*0*	*454*	*4*	*2*	*319*	*0*	
2015 (BUILD - A.M.)	***0***	***0***	***18***	***5***	***0***	***3***	***5***	***483***	***4***	***2***	***319***	***0***	

	0.85			0.75			0.90			0.89			PHF
	Eastbound (N.Super 8 drive)			Westbound (N.Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	2	0	4	0	791	3	1	271	0	
2015 (NO BUILD - P.M.)	*0*	*0*	*0*	*2*	*0*	*4*	*0*	*803*	*3*	*1*	*275*	*0*	
2015 (BUILD - P.M.)	***0***	***0***	***14***	***2***	***0***	***4***	***6***	***839***	***3***	***1***	***275***	***0***	

Claremont Rd / University Blvd

(6)	0.85			0.75			0.93			0.78			PHF
	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)			
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	6	0	9	0	422	35	26	299	0	
2015 (NO BUILD - A.M.)	*0*	*0*	*0*	*6*	*0*	*9*	*0*	*428*	*36*	*26*	*303*	*0*	
2015 (BUILD - A.M.)	***29***	***0***	***28***	***6***	***0***	***9***	***29***	***428***	***36***	***26***	***303***	***12***	

	0.85			0.75			0.90			0.94			PHF
	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	12	0	22	0	768	23	11	259	0	
2015 (NO BUILD - P.M.)	*0*	*0*	*0*	*12*	*0*	*22*	*0*	*780*	*23*	*11*	*263*	*0*	
2015 (BUILD - P.M.)	***22***	***0***	***21***	***12***	***0***	***22***	***36***	***780***	***23***	***11***	***263***	***15***	

Candelaria Blvd / Driveway 'A'

(7)	0.92			0.92			0.85			0.85			PHF
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (Driveway 'A')			Southbound (Driveway 'A')			
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	714	0	0	431	0	0	0	0	0	0	0	
2015 (NO BUILD - A.M.)	*0*	*725*	*0*	*0*	*437*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
2015 (BUILD - A.M.)	***0***	***725***	***25***	***0***	***437***	***0***	***0***	***0***	***19***	***0***	***0***	***0***	

	0.97			0.97			0.85			0.85			PHF
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (Driveway 'A')			Southbound (Driveway 'A')			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	743	0	0	748	0	0	0	0	0	0	0	
2015 (NO BUILD - P.M.)	*0*	*754*	*0*	*0*	*759*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
2015 (BUILD - P.M.)	***0***	***754***	***32***	***0***	***759***	***0***	***0***	***0***	***14***	***0***	***0***	***0***	

Candelaria / University Project

Projected Turning Movements Worksheet

Candelaria Blvd / University Blvd

INTERSECTION: E-W Street: **Candelaria Blvd** (1)

N-S Street: **University Blvd**

Year of Existing Counts 2012

Implementation Year **2015**

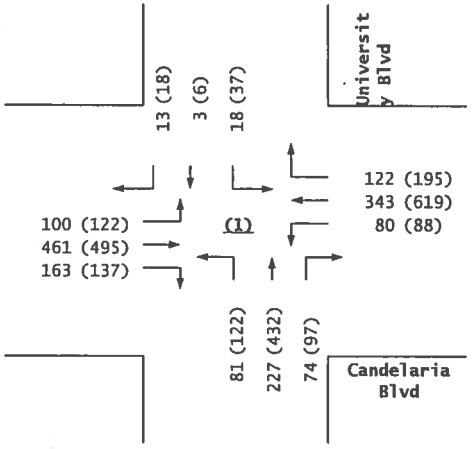
Growth Rates	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	99	454	161	79	338	120	80	224	73	18	3	13
Background Traffic Growth	1	7	2	1	5	2	1	3	1	0	0	0
Subtotal (NO BUILD - A.M.)	***100***	***461***	***163***	***80***	***343***	***122***	***81***	***227***	***74***	***18***	***3***	***13***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*15.22%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*1.45%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*12.68%*	*7.61%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*10.43%*	*12.68%*	*7.61%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	12	7	0	11	0	0	10	12	7	0	1	0
Total AM Peak Hour BUILD Volumes	**112**	**468**	**163**	**91**	**343**	**122**	**91**	**239**	**81**	**18**	**4**	**13**

	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	120	488	135	87	610	192	120	426	96	36	6	18
Background Traffic Growth	2	7	2	1	9	3	2	6	1	1	0	0
Subtotal (NO BUILD - P.M.)	***122***	***495***	***137***	***88***	***619***	***195***	***122***	***432***	***97***	***37***	***6***	***18***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*15.22%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*1.45%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*12.68%*	*7.61%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*10.43%*	*12.68%*	*7.61%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	9	5	0	14	0	0	7	9	5	0	1	0
Total PM Peak Hour BUILD Volumes	**131**	**500**	**137**	**102**	**619**	**195**	**129**	**441**	**102**	**37**	**7**	**18**

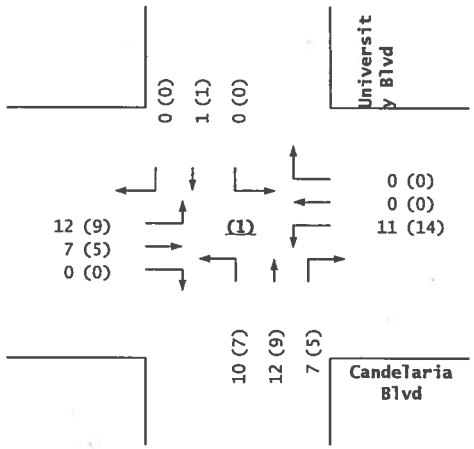
	Entering	Exiting		
Number of Commercial Trips Generated	71	94	A.M.	100% Commercial Development
	89	70	P.M.	

	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
2012 AM Peak Hr. Volumes	99	454	161	79	338	120	80	224	73	18	3	13
2012 PM Peak Hr. Volumes	120	488	135	87	610	192	120	426	96	36	6	18

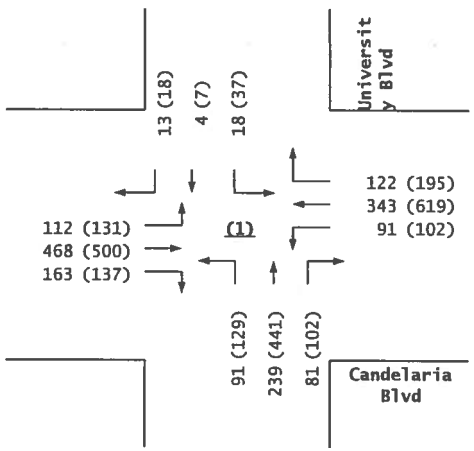
2015
NO BUILD



Trips



2015
BUILD



Candelaria Blvd / University Blvd

Candelaria / University Project

Projected Turning Movements Worksheet

Candelaria Blvd / I-25 SB ramp

INTERSECTION: E-W Street: **Candelaria Blvd** (2)

N-S Street: **I-25 SB ramp**

Year of Existing Counts **2012**

Implementation Year **2015**

Growth Rates **0.50%** **0.50%** **0.50%** **0.50%**

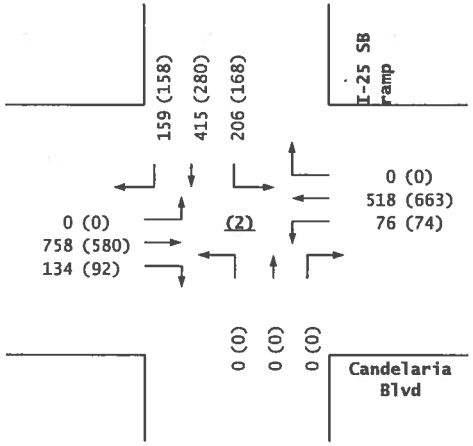
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	747	132	75	510	0	0	0	0	203	409	157
Background Traffic Growth	0	11	2	1	8	0	0	0	0	3	6	2
Subtotal (NO BUILD - A.M.)	***0***	***758***	***134***	***76***	***518***	***0***	***0***	***0***	***0***	***206***	***415***	***159***
Percent Commercial Trips Generated(Entering)	*0.00%*	*10.43%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*25.36%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*10.43%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	7	0	0	10	0	0	0	0	18	0	0
Total AM Peak Hour BUILD Volumes	**0**	**765**	**134**	**76**	**528**	**0**	**0**	**0**	**0**	**224**	**415**	**159**

	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	571	91	73	653	0	0	0	0	166	276	156
Background Traffic Growth	0	9	1	1	10	0	0	0	0	2	4	2
Subtotal (NO BUILD - P.M.)	***0***	***580***	***92***	***74***	***663***	***0***	***0***	***0***	***0***	***168***	***280***	***158***
Percent Commercial Trips Generated(Entering)	*0.00%*	*10.43%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*25.36%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*10.43%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	9	0	0	7	0	0	0	0	23	0	0
Total PM Peak Hour BUILD Volumes	**0**	**589**	**92**	**74**	**670**	**0**	**0**	**0**	**0**	**191**	**280**	**158**

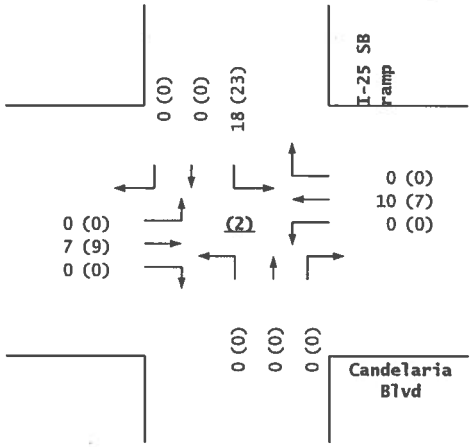
	Entering	Exiting		
Number of Commercial Trips Generated	**71**	**94**	A.M.	100% Commercial Development
	89	**70**	P.M.	

	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)		
2012 AM Peak Hr. Volumes	0	747	132	75	510	0	0	0	0	203	409	157
2012 PM Peak Hr. Volumes	0	571	91	73	653	0	0	0	0	166	276	156

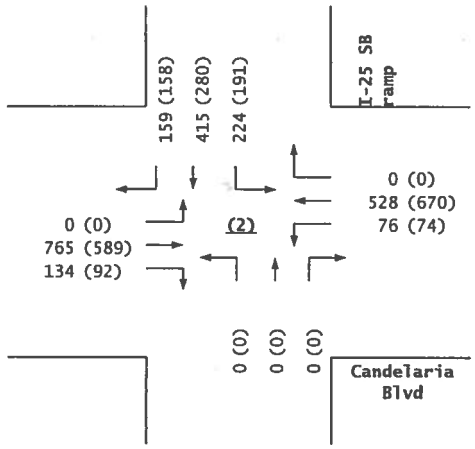
2015
NO BUILD



Trips

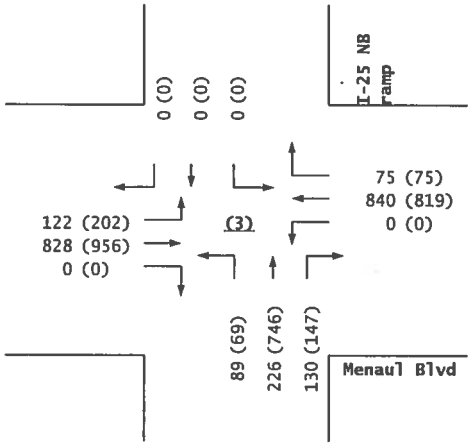


2015
BUILD

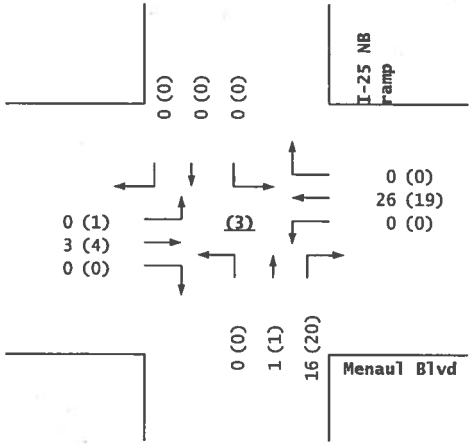


Candelaria Blvd / I-25 SB ramp

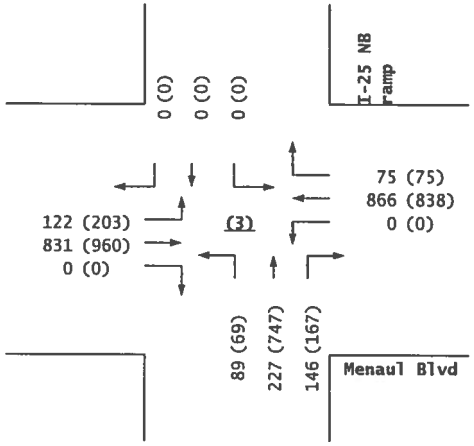
2015
NO BUILD



Trips



2015
BUILD



Menaul Blvd / I-25 NB ramp

Candelaria / University Project

Projected Turning Movements Worksheet

Menaul Blvd / University Blvd

INTERSECTION: E-W Street: **Menaul Blvd** (4)

N-S Street: **University Blvd**

Year of Existing Counts **2012**

Implementation Year **2015**

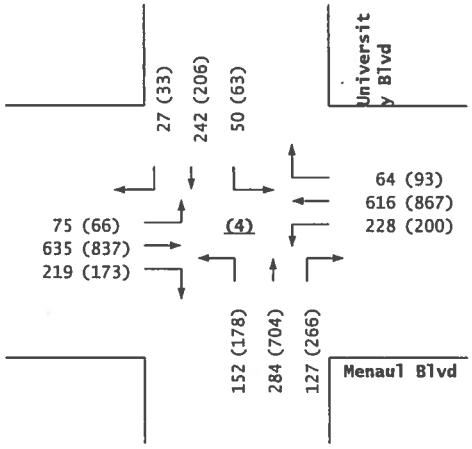
Growth Rates	0.50%			0.50%			0.30%			0.50%		
	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	74	626	216	225	607	63	151	281	126	49	238	27
Background Traffic Growth	1	9	3	3	9	1	1	3	1	1	4	0
Subtotal (NO BUILD - A.M.)	***75***	***635***	***219***	***228***	***616***	***64***	***152***	***284***	***127***	***50***	***242***	***27***
Percent Commercial Trips Generated(Entering)	*26.25%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*17.62%*	*0.00%*	*3.67%*	*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%*	*17.62%*	*3.67%*	*27.70%*
Total Trips Generated	19	0	0	0	0	13	0	3	0	17	3	26
Total AM Peak Hour BUILD Volumes	**94**	**635**	**219**	**228**	**616**	**77**	**152**	**287**	**127**	**67**	**245**	**53**

	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	65	825	170	197	854	92	176	698	264	62	203	33
Background Traffic Growth	1	12	3	3	13	1	2	6	2	1	3	0
Subtotal (NO BUILD - P.M.)	***66***	***837***	***173***	***200***	***867***	***93***	***178***	***704***	***266***	***63***	***206***	***33***
Percent Commercial Trips Generated(Entering)	*26.25%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*17.62%*	*0.00%*	*3.67%*	*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%*	*17.62%*	*3.67%*	*27.70%*
Total Trips Generated	23	0	0	0	0	16	0	3	0	12	3	19
Total PM Peak Hour BUILD Volumes	**89**	**837**	**173**	**200**	**867**	**109**	**178**	**707**	**266**	**75**	**209**	**52**

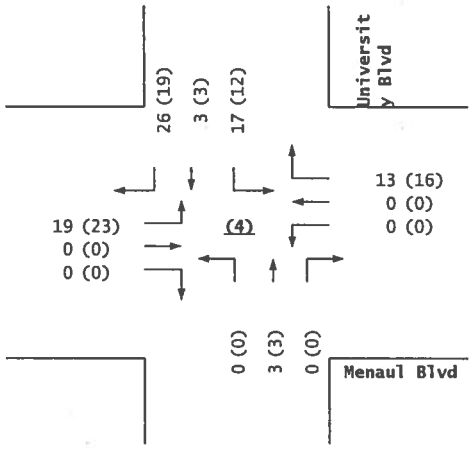
	Entering	Exiting		
Number of Commercial Trips Generated	**71**	**94**	A.M.	100% Commercial Development
	89	**70**	P.M.	

	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
2012 AM Peak Hr. Volumes	74	626	216	225	607	63	151	281	126	49	238	27
2012 PM Peak Hr. Volumes	65	825	170	197	854	92	176	698	264	62	203	33

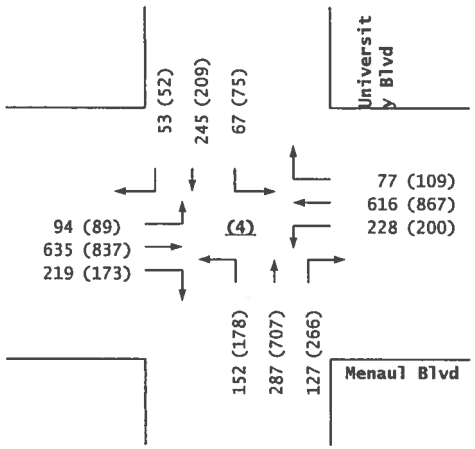
2015
NO BUILD



Trips



2015
BUILD



Menaul Blvd / University Blvd

Candelaria / University Project

Projected Turning Movements Worksheet

N.Super 8 drive / University Blvd

INTERSECTION: E-W Street: **N.Super 8 drive** (5)

N-S Street: **University Blvd**

Year of Existing Counts **2012**

Implementation Year **2015**

Growth Rates 0.50% 0.50% 0.50% 0.50%

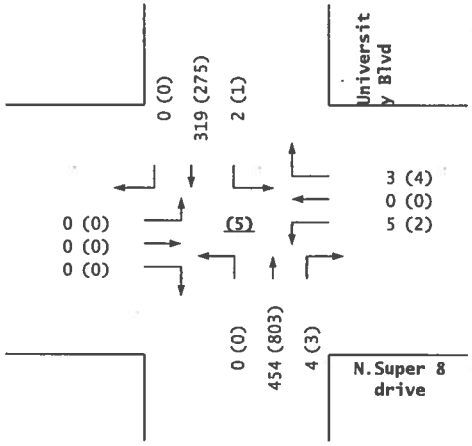
	Eastbound (N.Super 8 drive)			Westbound (N.Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	5	0	3	0	447	4	2	314	0
Background Traffic Growth	0	0	0	0	0	0	0	7	0	0	5	0
Subtotal (NO BUILD - A.M.)	***0***	***0***	***0***	***5***	***0***	***3***	***0***	***454***	***4***	***2***	***319***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*6.65%*	*40.89%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*19.59%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	0	18	0	0	0	5	29	0	0	0	0
Total AM Peak Hour BUILD Volumes	**0**	**0**	**18**	**5**	**0**	**3**	**5**	**483**	**4**	**2**	**319**	**0**

	Eastbound (N.Super 8 drive)			Westbound (N.Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	2	0	4	0	791	3	1	271	0
Background Traffic Growth	0	0	0	0	0	0	0	12	0	0	4	0
Subtotal (NO BUILD - P.M.)	***0***	***0***	***0***	***2***	***0***	***4***	***0***	***803***	***3***	***1***	***275***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*6.65%*	*40.89%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*19.59%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	0	14	0	0	0	6	36	0	0	0	0
Total PM Peak Hour BUILD Volumes	**0**	**0**	**14**	**2**	**0**	**4**	**6**	**839**	**3**	**1**	**275**	**0**

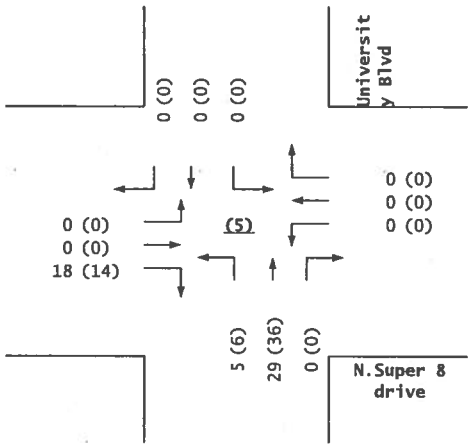
	Entering	Exiting		
Number of Commercial Trips Generated	**71**	**94**	A.M.	100% Commercial Development
	89	**70**	P.M.	

	Eastbound (N.Super 8 drive)			Westbound (N.Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)		
2012 AM Peak Hr. Volumes	0	0	0	5	0	3	0	447	4	2	314	0
2012 PM Peak Hr. Volumes	0	0	0	2	0	4	0	791	3	1	271	0

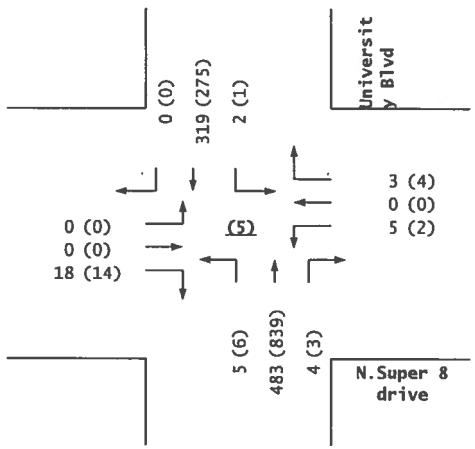
2015
NO BUILD



Trips



2015
BUILD



N.Super 8 drive / University Blvd

Candelaria / University Project

Projected Turning Movements Worksheet

Claremont Rd / University Blvd

INTERSECTION: E-W Street: **Claremont Rd** (6)

N-S Street: **University Blvd**

Year of Existing Counts 2012

Implementation Year **2015**

Growth Rates 0.50% 0.50% 0.50% 0.50%

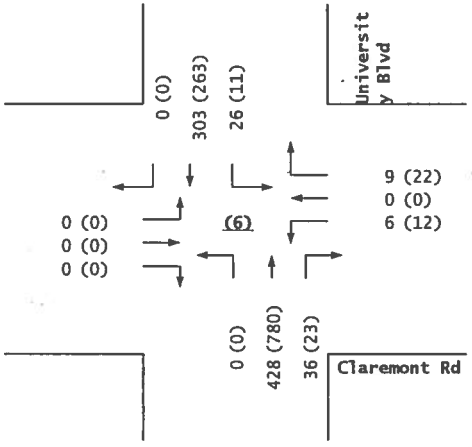
	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	6	0	9	0	422	35	26	299	0
Background Traffic Growth	0	0	0	0	0	0	0	6	1	0	4	0
Subtotal (NO BUILD - A.M.)	***0***	***0***	***0***	***6***	***0***	***9***	***0***	***428***	***36***	***26***	***303***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*40.89%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*16.67%*
Percent Commercial Trips Generated(Exiting)	*30.72%*	*0.00%*	*29.40%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	29	0	28	0	0	0	29	0	0	0	0	12
Total AM Peak Hour BUILD Volumes	**29**	**0**	**28**	**6**	**0**	**9**	**29**	**428**	**36**	**26**	**303**	**12**

	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	12	0	22	0	768	23	11	259	0
Background Traffic Growth	0	0	0	0	0	0	0	12	0	0	4	0
Subtotal (NO BUILD - P.M.)	***0***	***0***	***0***	***12***	***0***	***22***	***0***	***780***	***23***	***11***	***263***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*40.89%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*16.67%*
Percent Commercial Trips Generated(Exiting)	*30.72%*	*0.00%*	*29.40%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	22	0	21	0	0	0	36	0	0	0	0	15
Total PM Peak Hour BUILD Volumes	**22**	**0**	**21**	**12**	**0**	**22**	**36**	**780**	**23**	**11**	**263**	**15**

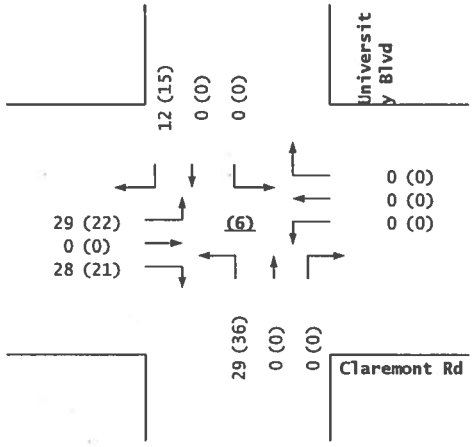
	Entering	Exiting		
Number of Commercial Trips Generated	71	94	A.M.	100% Commercial Development
	89	70	P.M.	

	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)		
2012 AM Peak Hr. Volumes	0	0	0	6	0	9	0	422	35	26	299	0
2012 PM Peak Hr. Volumes	0	0	0	12	0	22	0	768	23	11	259	0

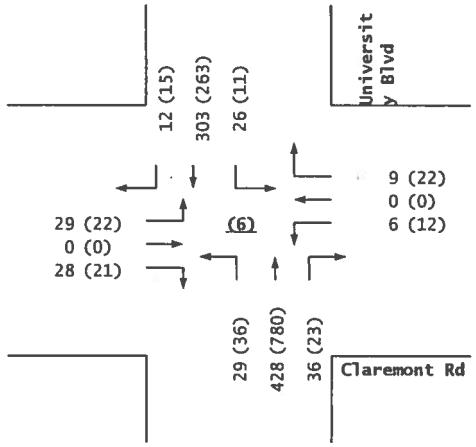
2015
NO BUILD



Trips



2015
BUILD



Claremont Rd / University Blvd

Candelaria / University Project

Projected Turning Movements Worksheet

Candelaria Blvd / Driveway 'A'

INTERSECTION: E-W Street: **Candelaria Blvd** (7)

N-S Street: **Driveway 'A'**

Year of Existing Counts 2012

Implementation Year **2015**

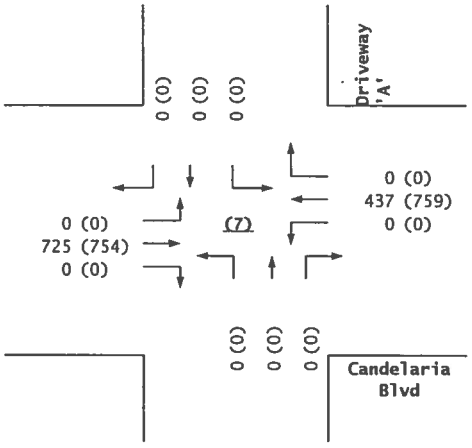
Growth Rates	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	714	0	0	431	0	0	0	0	0	0	0
Background Traffic Growth	0	11	0	0	6	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	***0***	***725***	***0***	***0***	***437***	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*35.79%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.29%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	0	25	0	0	0	0	0	19	0	0	0
Total AM Peak Hour BUILD Volumes	**0**	**725**	**25**	**0**	**437**	**0**	**0**	**0**	**19**	**0**	**0**	**0**

	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	743	0	0	748	0	0	0	0	0	0	0
Background Traffic Growth	0	11	0	0	11	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	***0***	***754***	***0***	***0***	***759***	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*35.79%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.29%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	0	32	0	0	0	0	0	14	0	0	0
Total PM Peak Hour BUILD Volumes	**0**	**754**	**32**	**0**	**759**	**0**	**0**	**0**	**14**	**0**	**0**	**0**

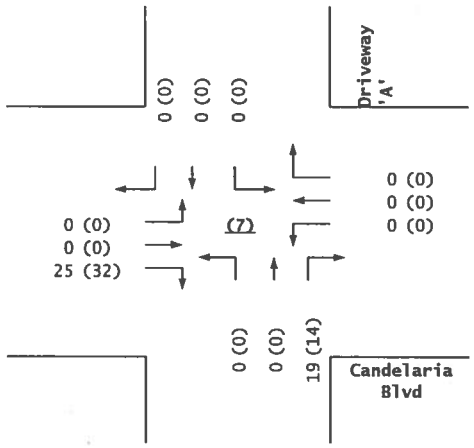
	Entering	Exiting		
Number of Commercial Trips Generated	**71**	**94**	A.M.	100% Commercial Development
	89	**70**	P.M.	

	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
2012 AM Peak Hr. Volumes	0	714	0	0	431	0	0	0	0	0	0	0
2012 PM Peak Hr. Volumes	0	743	0	0	748	0	0	0	0	0	0	0

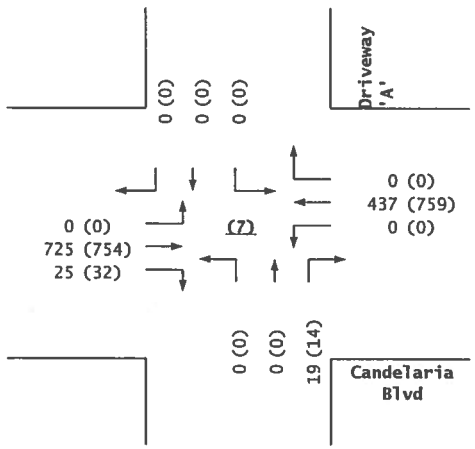
2015
NO BUILD



Trips



2015
BUILD



Candelaria Blvd / Driveway 'A'

Timings
1: Candelaria Rd. & University Blvd.

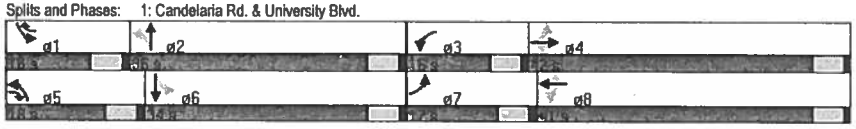
Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	100	461	163	80	343	122	81	227	18	3
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+pt	
Protected Phases	7	4	5	3	8	1	5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	5	3	8	1	5	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	9.0	21.0	9.0	9.0	21.0	9.0	21.0
Total Split (s)	17.0	42.0	18.0	16.0	41.0	16.0	18.0	36.0	16.0	34.0
Total Split (%)	15.5%	38.2%	16.4%	14.5%	37.3%	14.5%	16.4%	32.7%	14.5%	30.9%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	33.4	22.2	35.3	31.8	21.4	32.2	63.6	54.6	59.1	52.4
Actuated g/C Ratio	0.30	0.20	0.32	0.29	0.19	0.29	0.58	0.50	0.54	0.48
v/c Ratio	0.32	0.70	0.28	0.35	0.38	0.24	0.11	0.20	0.02	0.01
Control Delay	14.8	24.3	1.7	28.0	39.1	5.5	6.9	8.8	11.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	24.3	1.7	28.0	39.1	5.5	6.9	8.8	11.6	0.0
LOS	B	C	A	C	D	A	A	A	B	A
Approach Delay		17.9			29.9			8.4		6.1
Approach LOS		B			C			A		A

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 24 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 38.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Candelaria Rd. & University Blvd.



HCM Signalized Intersection Capacity Analysis
1: Candelaria Rd. & University Blvd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	461	163	80	343	122	81	227	74	18	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	3409		3433	3120	
Flt Permitted	0.42	1.00	1.00	0.24	1.00	1.00	0.71	1.00		0.55	1.00	
Satd. Flow (perm)	780	3539	1583	454	5085	1583	1331	3409		1989	3120	
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	109	501	177	89	381	136	90	252	82	21	4	15
RTOR Reduction (vph)	0	0	127	0	0	101	0	20	0	0	10	0
Lane Group Flow (vph)	109	501	50	89	381	35	90	314	0	21	9	0
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	31.4	21.2	29.2	29.8	20.4	26.2	61.6	53.6		57.2	51.4	
Effective Green, g (s)	33.4	22.2	31.2	31.8	21.4	28.2	63.6	54.6		59.2	52.4	
Actuated g/C Ratio	0.30	0.20	0.28	0.29	0.19	0.26	0.58	0.50		0.54	0.48	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	714	507	256	989	463	805	1692		1160	1486	
v/s Ratio Prot	0.03	c0.14	c0.01	c0.03	0.07	0.00	c0.01	c0.09		0.00	0.00	
v/s Ratio Perm	0.07		0.02	0.07		0.02	0.06			0.01		
v/c Ratio	0.32	0.70	0.10	0.35	0.39	0.08	0.11	0.19		0.02	0.01	
Uniform Delay, d1	28.5	40.8	29.0	29.8	38.6	31.0	10.3	15.4		11.8	15.1	
Progression Factor	0.51	0.48	0.19	1.00	1.00	1.00	0.59	0.58		1.00	1.00	
Incremental Delay, d2	0.5	2.8	0.1	0.8	0.3	0.1	0.1	0.2		0.0	0.0	
Delay (s)	15.1	22.3	5.5	30.6	38.8	31.1	6.2	9.1		11.8	15.1	
Level of Service	B	C	A	C	D	C	A	A		B	B	
Approach Delay (s)		17.5			35.9			8.5			13.4	
Approach LOS		B			D			A			B	

Intersection Summary

HCM Average Control Delay	21.4	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.30				
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	38.3%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Timings
1: Candelaria Rd. & University Blvd.

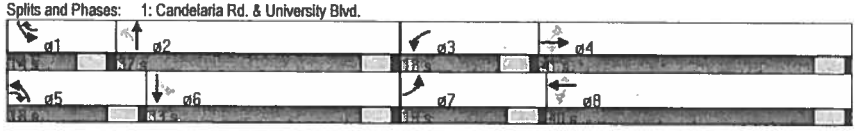
Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	112	468	163	91	343	122	91	239	18	4
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+pt	
Protected Phases	7	4	5	3	8	1	5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	5	3	8	1	5	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	9.0	21.0	9.0	9.0	21.0	9.0	21.0
Total Split (s)	19.0	41.0	18.0	18.0	40.0	14.0	18.0	37.0	14.0	33.0
Total Split (%)	17.3%	37.3%	16.4%	16.4%	36.4%	12.7%	16.4%	33.6%	12.7%	30.0%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	34.1	22.4	35.8	32.5	21.6	32.4	63.1	53.9	58.1	51.3
Actuated g/C Ratio	0.31	0.20	0.33	0.30	0.20	0.29	0.57	0.49	0.53	0.47
v/c Ratio	0.35	0.71	0.28	0.39	0.38	0.24	0.13	0.21	0.02	0.01
Control Delay	15.1	25.3	1.8	28.3	38.9	5.5	8.0	10.3	11.9	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	25.3	1.8	28.3	38.9	5.5	8.0	10.3	11.9	11.2
LOS	B	C	A	C	D	A	A	B	B	B
Approach Delay		18.6			29.8			9.8		11.6
Approach LOS		B			C			A		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 32 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 39.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Candelaria Rd. & University Blvd.



HCM Signalized Intersection Capacity Analysis
1: Candelaria Rd. & University Blvd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	468	163	91	343	122	91	239	81	18	4	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	3405		3433	3141	
Flt Permitted	0.42	1.00	1.00	0.24	1.00	1.00	0.71	1.00		0.54	1.00	
Satd. Flow (perm)	782	3539	1583	444	5085	1583	1318	3405		1947	3141	
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	122	509	177	101	381	136	101	266	90	21	5	15
RTOR Reduction (vph)	0	0	126	0	0	101	0	22	0	0	8	0
Lane Group Flow (vph)	122	509	51	101	381	35	101	334	0	21	12	0
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	32.1	21.4	29.8	30.5	20.6	26.4	61.3	52.9		56.1	50.3	
Effective Green, g (s)	34.1	22.4	31.8	32.5	21.6	28.4	63.3	53.9		58.1	51.3	
Actuated g/C Ratio	0.31	0.20	0.29	0.30	0.20	0.26	0.58	0.49		0.53	0.47	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	348	721	515	263	999	466	797	1668		1120	1465	
v/s Ratio Prot	0.04	c0.14	c0.01	c0.04	0.07	0.00	c0.01	c0.10		0.00	0.00	
v/s Ratio Perm	0.07		0.02	0.08		0.02	0.06			0.01		
v/c Ratio	0.35	0.71	0.10	0.38	0.38	0.08	0.13	0.20		0.02	0.01	
Uniform Delay, d1	28.2	40.7	28.6	29.5	38.4	30.9	10.5	15.9		12.3	15.7	
Progression Factor	0.52	0.50	0.23	1.00	1.00	1.00	0.66	0.66		1.00	1.00	
Incremental Delay, d2	0.5	2.8	0.1	0.9	0.2	0.1	0.1	0.3		0.0	0.0	
Delay (s)	15.2	23.2	6.8	30.5	38.6	30.9	7.1	10.7		12.3	15.7	
Level of Service	B	C	A	C	D	C	A	B		B	B	
Approach Delay (s)		18.4			35.6			9.9			14.0	
Approach LOS		B			D			A			B	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Candelaria Rd. & University Blvd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	122	495	137	88	619	195	122	432	37	6
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+pt	
Protected Phases	7	4	5	3	8	1	5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	5	3	8	1	5	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	9.0	21.0	9.0	9.0	21.0	9.0	21.0
Total Split (s)	17.0	35.0	13.0	13.0	31.0	17.0	13.0	45.0	17.0	49.0
Total Split (%)	15.5%	31.8%	11.8%	11.8%	28.2%	15.5%	11.8%	40.9%	15.5%	44.5%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	35.0	23.1	38.4	32.2	21.7	32.8	63.6	53.3	56.1	49.0
Actuated g/C Ratio	0.32	0.21	0.35	0.29	0.20	0.30	0.58	0.48	0.51	0.45
v/c Ratio	0.48	0.69	0.22	0.37	0.69	0.36	0.20	0.41	0.05	0.02
Control Delay	49.8	44.4	1.4	27.8	44.4	7.0	6.6	9.1	12.1	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	44.4	1.4	27.8	44.4	7.0	6.6	9.1	12.1	11.5
LOS	D	D	A	C	D	A	A	A	B	B
Approach Delay		37.5			34.7			8.6		11.9
Approach LOS		D			C			A		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 38 (35%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 26.7 — Intersection LOS: C
Intersection Capacity Utilization 44.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Candelaria Rd. & University Blvd.

HCM Signalized Intersection Capacity Analysis
1: Candelaria Rd. & University Blvd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	495	137	88	619	195	122	432	97	37	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	3442		3433	3146	
Flt Permitted	0.19	1.00	1.00	0.25	1.00	1.00	0.68	1.00		0.34	1.00	
Satd. Flow (perm)	346	3539	1583	473	5085	1583	1272	3442		1219	3146	
Peak-hour factor, PHF	0.97	0.97	0.97	0.90	0.90	0.90	0.76	0.76	0.76	0.88	0.88	0.88
Adj. Flow (vph)	126	510	141	98	688	217	161	568	128	42	7	20
RTOR Reduction (vph)	0	0	97	0	0	143	0	14	0	0	11	0
Lane Group Flow (vph)	126	510	44	98	688	74	161	682	0	42	16	0
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	33.0	22.1	32.4	30.2	20.7	26.8	62.6	52.3		54.2	48.1	
Effective Green, g (s)	35.0	23.1	34.4	32.2	21.7	28.8	64.4	53.3		56.2	49.1	
Actuated g/C Ratio	0.32	0.21	0.31	0.29	0.20	0.26	0.59	0.48		0.51	0.45	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	264	743	553	262	1003	472	796	1668		766	1404	
v/s Ratio Prot	c0.05	c0.14	0.01	0.04	0.14	0.01	c0.02	c0.20		0.00	0.01	
v/s Ratio Perm	0.10		0.02	0.07		0.04	0.10			0.02		
v/c Ratio	0.48	0.69	0.08	0.37	0.69	0.16	0.20	0.41		0.05	0.01	
Uniform Delay, d1	28.3	40.1	26.6	29.6	41.0	31.2	10.5	18.2		13.5	16.9	
Progression Factor	1.81	0.99	0.20	1.00	1.00	1.00	0.52	0.45		1.00	1.00	
Incremental Delay, d2	1.3	2.5	0.1	0.9	2.0	0.2	0.1	0.6		0.0	0.0	
Delay (s)	52.5	42.4	5.3	30.5	43.0	31.4	5.6	8.8		13.5	17.0	
Level of Service	D	D	A	C	D	C	A	A		B	B	
Approach Delay (s)		37.3			39.2			8.2			14.9	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

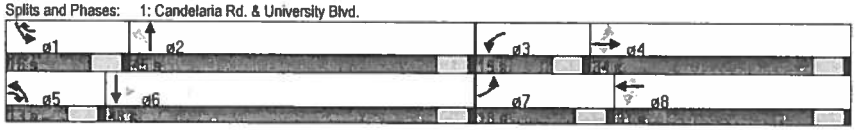
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	131	500	137	102	619	195	129	441	37	7
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+pt	
Protected Phases	7	4	5	3	8	1	5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	5	3	8	1	5	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	9.0	21.0	9.0	9.0	21.0	9.0	21.0
Total Split (s)	18.0	34.0	13.0	15.0	31.0	16.0	13.0	45.0	16.0	48.0
Total Split (%)	16.4%	30.9%	11.8%	13.6%	28.2%	14.5%	11.8%	40.9%	14.5%	43.6%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	35.1	22.8	38.5	32.9	21.7	32.8	63.3	52.9	55.4	48.3
Actuated g/C Ratio	0.32	0.21	0.35	0.30	0.20	0.30	0.58	0.48	0.50	0.44
v/c Ratio	0.50	0.70	0.22	0.42	0.69	0.36	0.22	0.43	0.06	0.02
Control Delay	47.6	43.7	1.6	28.7	44.4	6.8	7.4	10.4	12.3	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	43.7	1.6	28.7	44.4	6.8	7.4	10.4	12.3	12.0
LOS	D	D	A	C	D	A	A	B	B	B
Approach Delay		36.9			34.7			9.8		12.2
Approach LOS		D			C			A		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 35 (32%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 26.8 — Intersection LOS: C
Intersection Capacity Utilization 45.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Candelaria Rd. & University Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	500	137	102	619	195	129	441	102	37	7	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95		0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	3440		3433	3160	
Flt Permitted	0.19	1.00	1.00	0.24	1.00	1.00	0.68	1.00		0.33	1.00	
Satd. Flow (perm)	350	3539	1583	450	5085	1583	1270	3440		1190	3160	
Peak-hour factor, PHF	0.97	0.97	0.97	0.90	0.90	0.90	0.76	0.76	0.76	0.88	0.88	0.88
Adj. Flow (vph)	135	515	141	113	688	217	170	580	134	42	8	20
RTOR Reduction (vph)	0	0	97	0	0	145	0	15	0	0	11	0
Lane Group Flow (vph)	135	515	44	113	688	72	170	699	0	42	17	0
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	33.1	21.8	32.5	30.9	20.7	26.8	62.6	51.9		53.4	47.3	
Effective Green, g (s)	35.1	22.8	34.5	32.9	21.7	28.8	64.0	52.9		55.4	48.3	
Actuated g/C Ratio	0.32	0.21	0.31	0.30	0.20	0.26	0.58	0.48		0.50	0.44	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	270	734	554	269	1003	472	792	1654		744	1388	
v/s Ratio Prot	c0.06	c0.15	0.01	0.04	0.14	0.01	c0.02	c0.20		0.00	0.01	
v/s Ratio Perm	0.10		0.02	0.08		0.04	0.10			0.02		
v/c Ratio	0.50	0.70	0.08	0.42	0.69	0.15	0.21	0.42		0.06	0.01	
Uniform Delay, d1	28.3	40.4	26.6	29.4	41.0	31.2	10.7	18.6		13.9	17.4	
Progression Factor	1.71	0.98	0.24	1.00	1.00	1.00	0.57	0.51		1.00	1.00	
Incremental Delay, d2	1.4	2.9	0.1	1.1	2.0	0.2	0.1	0.6		0.0	0.0	
Delay (s)	49.8	41.7	6.5	30.5	43.0	31.4	6.2	10.1		13.9	17.4	
Level of Service	D	D	A	C	D	C	A	B		B	B	
Approach Delay (s)		36.8			39.1			9.4			15.3	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

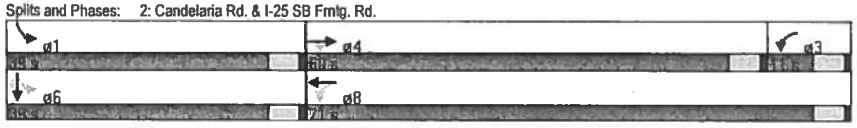
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	758	134	76	518	206	415	159
Turn Type		Perm	pm+pt		pm+pt		Perm
Protected Phases	4		3	8	1	6	
Permitted Phases		4	8		6		6
Detector Phase	4	4	3	8	1	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	60.0	60.0	11.0	71.0	39.0	39.0	39.0
Total Split (%)	54.5%	54.5%	10.0%	64.5%	35.5%	35.5%	35.5%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Min	Min	Min	Min	Min	C-Min	C-Min
Act Effct Green (s)	40.0	40.0	50.5	50.5	51.5	51.5	51.5
Actuated g/C Ratio	0.36	0.36	0.46	0.46	0.47	0.47	0.47
v/c Ratio	0.75	0.25	0.21	0.25	0.27	0.31	0.21
Control Delay	34.0	3.9	13.0	13.0	20.7	20.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	3.9	13.0	13.0	20.7	20.0	3.8
LOS	C	A	B	B	C	B	A
Approach Delay	29.5			13.0		16.8	
Approach LOS	C			B		B	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 45.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Candelaria Rd. & I-25 SB Frntg. Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	758	134	76	518	0	0	0	0	206	415	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.91					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	5085					1610	3382	1583
Flt Permitted		1.00	1.00	0.14	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	508	5085					1610	3382	1583
Peak-hour factor, PHF	0.79	0.79	0.79	0.88	0.88	0.88	0.75	0.75	0.75	0.90	0.90	0.90
Adj. Flow (vph)	0	959	170	86	589	0	0	0	0	229	461	177
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	959	62	86	589	0	0	0	0	206	484	83
Turn Type			Perm	pm+pt						pm+pt		Perm
Protected Phases		4		3	8					1	6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		39.0	39.0	49.5	49.5					50.5	50.5	50.5
Effective Green, g (s)		40.0	40.0	50.5	50.5					51.5	51.5	51.5
Actuated g/C Ratio		0.36	0.36	0.46	0.46					0.47	0.47	0.47
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1287	576	406	2334					754	1583	741
v/s Ratio Prot		c0.27		0.01	c0.12					0.13	c0.14	
v/s Ratio Perm			0.04	0.08								0.05
v/c Ratio		0.75	0.11	0.21	0.25					0.27	0.31	0.11
Uniform Delay, d1		30.6	23.2	33.8	18.2					17.8	18.2	16.4
Progression Factor		1.00	1.00	0.64	0.72					1.00	1.00	1.00
Incremental Delay, d2		2.4	0.1	0.3	0.1					0.2	0.1	0.3
Delay (s)		32.9	23.3	21.9	13.2					18.0	18.3	16.7
Level of Service		C	C	C	B					B	B	B
Approach Delay (s)		31.5			14.3			0.0			17.9	
Approach LOS		C			B			A			B	

Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

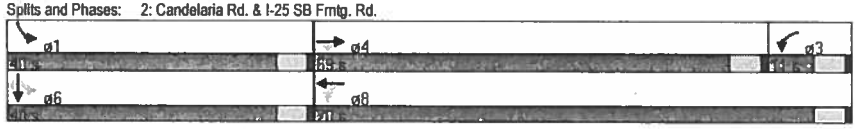
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	765	134	76	528	224	415	159
Turn Type		Perm	pm+pt		pm+pt		Perm
Protected Phases	4		3	8	1	6	
Permitted Phases		4	8		6		6
Detector Phase	4	4	3	8	1	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	59.0	59.0	11.0	70.0	40.0	40.0	40.0
Total Split (%)	53.6%	53.6%	10.0%	63.6%	36.4%	36.4%	36.4%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Min	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	40.1	40.1	50.6	50.6	51.4	51.4	51.4
Actuated g/C Ratio	0.36	0.36	0.46	0.46	0.47	0.47	0.47
v/c Ratio	0.75	0.25	0.21	0.26	0.30	0.31	0.21
Control Delay	34.1	3.9	14.4	15.6	21.1	20.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	3.9	14.4	15.6	21.1	20.0	3.8
LOS	C	A	B	B	C	C	A
Approach Delay	29.6			15.5		17.1	
Approach LOS	C			B		B	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 16 (15%), Referenced to phase 1:SBL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 21.9 — Intersection LOS: C
Intersection Capacity Utilization 46.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Candelaria Rd. & I-25 SB Frntg. Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	765	134	76	528	0	0	0	0	224	415	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.91					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	5085					1610	3381	1583
Flt Permitted		1.00	1.00	0.14	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	497	5085					1610	3381	1583
Peak-hour factor, PHF	0.79	0.79	0.79	0.88	0.88	0.88	0.75	0.75	0.75	0.90	0.90	0.90
Adj. Flow (vph)	0	968	170	86	600	0	0	0	0	249	461	177
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	968	62	86	600	0	0	0	0	224	486	83
Turn Type			Perm	pm+pt						pm+pt		Perm
Protected Phases		4		3	8					1	6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		39.1	39.1	49.6	49.6					50.4	50.4	50.4
Effective Green, g (s)		40.1	40.1	50.6	50.6					51.4	51.4	51.4
Actuated g/C Ratio		0.36	0.36	0.46	0.46					0.47	0.47	0.47
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1290	577	402	2339					752	1580	740
v/s Ratio Prot		c0.27		0.01	c0.12					0.14	c0.14	
v/s Ratio Perm			0.04	0.09								0.05
v/c Ratio		0.75	0.11	0.21	0.26					0.30	0.31	0.11
Uniform Delay, d1		30.6	23.1	34.0	18.2					18.1	18.2	16.5
Progression Factor		1.00	1.00	0.71	0.87					1.00	1.00	1.00
Incremental Delay, d2		2.5	0.1	0.3	0.1					1.0	0.5	0.3
Delay (s)		33.1	23.2	24.5	15.9					19.1	18.7	16.8
Level of Service		C	C	C	B					B	B	B
Approach Delay (s)		31.6			16.9			0.0			18.4	
Approach LOS		C			B			A			B	

Intersection Summary

HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

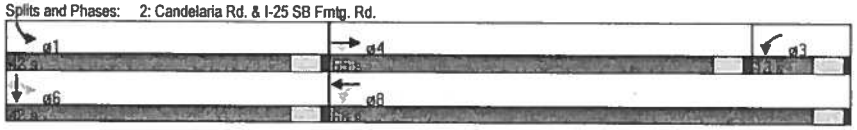
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	580	92	74	663	168	280	158
Turn Type		Perm	pm+pt		pm+pt		Perm
Protected Phases	4		3	8	1	6	
Permitted Phases		4	8		6		6
Detector Phase	4	4	3	8	1	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	55.0	55.0	13.0	68.0	42.0	42.0	42.0
Total Split (%)	50.0%	50.0%	11.8%	61.8%	38.2%	38.2%	38.2%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Min	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	26.7	26.7	37.2	37.2	64.8	64.8	64.8
Actuated g/C Ratio	0.24	0.24	0.34	0.34	0.59	0.59	0.59
v/c Ratio	0.71	0.21	0.19	0.43	0.16	0.16	0.17
Control Delay	42.6	7.1	17.2	15.3	11.8	11.3	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	7.1	17.2	15.3	11.8	11.3	2.3
LOS	D	A	B	B	B	B	A
Approach Delay	37.7			15.5		9.1	
Approach LOS	D			B		A	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 59 (54%), Referenced to phase 1:SBL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 20.8 Intersection LOS: C
Intersection Capacity Utilization 37.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Candelaria Rd. & I-25 SB Frntg. Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	580	92	74	663	0	0	0	0	168	280	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.91					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	5085					1610	3377	1583
Flt Permitted		1.00	1.00	0.23	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	821	5085					1610	3377	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.75	0.75	0.75	0.95	0.95	0.95
Adj. Flow (vph)	0	611	97	83	745	0	0	0	0	177	295	166
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	68
Lane Group Flow (vph)	0	611	24	83	745	0	0	0	0	152	320	98
Turn Type			Perm	pm+pt						pm+pt		Perm
Protected Phases		4		3	8					1	6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		25.7	25.7	36.2	36.2					63.8	63.8	63.8
Effective Green, g (s)		26.7	26.7	37.2	37.2					64.8	64.8	64.8
Actuated g/C Ratio		0.24	0.24	0.34	0.34					0.59	0.59	0.59
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		859	384	432	1720					948	1989	933
v/s Ratio Prot		c0.17		0.01	c0.15					0.09	c0.09	
v/s Ratio Perm			0.01	0.05								0.06
v/c Ratio		0.71	0.06	0.19	0.43					0.16	0.16	0.10
Uniform Delay, d1		38.1	32.0	36.3	28.2					10.3	10.3	9.9
Progression Factor		1.00	1.00	0.63	0.52					1.00	1.00	1.00
Incremental Delay, d2		2.8	0.1	0.2	0.2					0.4	0.2	0.2
Delay (s)		40.9	32.1	23.1	15.0					10.6	10.4	10.1
Level of Service		D	C	C	B					B	B	B
Approach Delay (s)		39.7			15.8			0.0			10.4	
Approach LOS		D			B			A			B	

Intersection Summary

HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

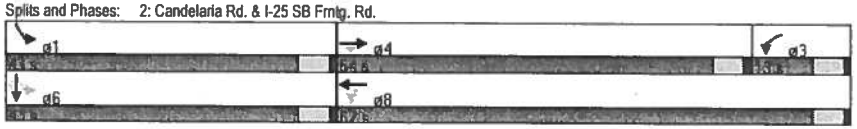
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	589	92	74	670	191	280	158
Turn Type		Perm	pm+pt		pm+pt		Perm
Protected Phases	4		3	8	1	6	
Permitted Phases		4	8		6		6
Detector Phase	4	4	3	8	1	6	6
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	54.0	54.0	13.0	67.0	43.0	43.0	43.0
Total Split (%)	49.1%	49.1%	11.8%	60.9%	39.1%	39.1%	39.1%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	Min	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	26.9	26.9	37.4	37.4	64.6	64.6	64.6
Actuated g/C Ratio	0.24	0.24	0.34	0.34	0.59	0.59	0.59
v/c Ratio	0.72	0.21	0.19	0.44	0.17	0.17	0.17
Control Delay	42.5	7.0	18.6	16.7	12.0	11.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	7.0	18.6	16.7	12.0	11.4	2.4
LOS	D	A	B	B	B	B	A
Approach Delay	37.7			16.9		9.3	
Approach LOS	D			B		A	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 56 (51%), Referenced to phase 1:SBL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 21.4 — Intersection LOS: C
Intersection Capacity Utilization 38.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Candelaria Rd. & I-25 SB Frntg. Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	589	92	74	670	0	0	0	0	191	280	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.91					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.99	1.00
Satd. Flow (prot)		3539	1583	3433	5085					1610	3370	1583
Flt Permitted		1.00	1.00	0.22	1.00					0.95	0.99	1.00
Satd. Flow (perm)		3539	1583	804	5085					1610	3370	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.75	0.75	0.75	0.95	0.95	0.95
Adj. Flow (vph)	0	620	97	83	753	0	0	0	0	201	295	166
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	69
Lane Group Flow (vph)	0	620	24	83	753	0	0	0	0	161	335	97
Turn Type			Perm	pm+pt						pm+pt		Perm
Protected Phases		4		3	8					1	6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		25.9	25.9	36.4	36.4					63.6	63.6	63.6
Effective Green, g (s)		26.9	26.9	37.4	37.4					64.6	64.6	64.6
Actuated g/C Ratio		0.24	0.24	0.34	0.34					0.59	0.59	0.59
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		865	387	429	1729					946	1979	930
v/s Ratio Prot		c0.18		0.01	c0.15					c0.10	0.10	
v/s Ratio Perm			0.01	0.05								0.06
v/c Ratio		0.72	0.06	0.19	0.44					0.17	0.17	0.10
Uniform Delay, d1		38.1	31.9	36.4	28.1					10.4	10.4	10.0
Progression Factor		1.00	1.00	0.69	0.58					1.00	1.00	1.00
Incremental Delay, d2		2.9	0.1	0.2	0.2					0.4	0.2	0.2
Delay (s)		40.9	31.9	25.3	16.4					10.8	10.6	10.2
Level of Service		D	C	C	B					B	B	B
Approach Delay (s)		39.7			17.3			0.0			10.5	
Approach LOS		D			B			A			B	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	122	828	840	89	226	130
Turn Type	pm+pt			Perm		Perm
Protected Phases	7	4	8		2	
Permitted Phases	4			2		2
Detector Phase	7	4	8	2	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	24.0	73.0	49.0	37.0	37.0	37.0
Total Split (%)	21.8%	66.4%	44.5%	33.6%	33.6%	33.6%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	43.2	43.2	29.5	58.8	58.8	58.8
Actuated g/C Ratio	0.39	0.39	0.27	0.53	0.53	0.53
v/c Ratio	0.58	0.47	0.72	0.12	0.16	0.19
Control Delay	45.8	25.1	25.7	15.1	14.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	25.1	25.7	15.1	14.6	4.2
LOS	D	C	C	B	B	A
Approach Delay		27.8	25.7		11.7	
Approach LOS		C	C		B	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 7 (6%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 23.4 — Intersection LOS: C
Intersection Capacity Utilization 40.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Menaul Blvd. & I-25 NB Frntg. Rd.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	828	0	0	840	75	89	226	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95	1.00			
Frt	1.00	1.00			0.99		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085			5023		1770	3539	1583			
Flt Permitted	0.14	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	269	5085			5023		1770	3539	1583			
Peak-hour factor, PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.76	0.76	0.76	0.85	0.85	0.85
Adj. Flow (vph)	139	941	0	0	903	81	117	297	171	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	71	0	0	0
Lane Group Flow (vph)	139	941	0	0	972	0	117	297	100	0	0	0
Turn Type	pm+pt						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	42.3	42.3			28.5		57.7	57.7	57.7			
Effective Green, g (s)	43.3	43.3			29.5		58.7	58.7	58.7			
Actuated g/C Ratio	0.39	0.39			0.27		0.53	0.53	0.53			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	240	2002			1347		945	1889	845			
v/s Ratio Prot	c0.05	0.19			c0.19			c0.08				
v/s Ratio Perm	0.18						0.07		0.06			
v/c Ratio	0.58	0.47			0.72		0.12	0.16	0.12			
Uniform Delay, d1	38.3	24.8			36.5		12.8	13.1	12.8			
Progression Factor	1.00	1.00			0.63		1.00	1.00	1.00			
Incremental Delay, d2	3.4	0.2			1.9		0.3	0.2	0.3			
Delay (s)	41.7	25.0			24.9		13.1	13.2	13.1			
Level of Service	D	C			C		B	B	B			
Approach Delay (s)		27.1			24.9			13.2			0.0	
Approach LOS		C			C			B			A	

Intersection Summary

HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Menaul Blvd. & I-25 NB Frntg. Rd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	122	831	866	89	227	146
Turn Type	pm+pt			Perm		Perm
Protected Phases	7	4	8		2	
Permitted Phases	4			2		2
Detector Phase	7	4	8	2	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	24.0	72.0	48.0	38.0	38.0	38.0
Total Split (%)	21.8%	65.5%	43.6%	34.5%	34.5%	34.5%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	44.3	44.3	30.2	57.7	57.7	57.7
Actuated g/C Ratio	0.40	0.40	0.27	0.52	0.52	0.52
v/c Ratio	0.57	0.46	0.73	0.13	0.16	0.21
Control Delay	44.9	24.3	25.5	15.7	15.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	24.3	25.5	15.7	15.2	5.6
LOS	D	C	C	B	B	A
Approach Delay		26.9	25.5		12.3	
Approach LOS		C	C		B	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 12 (11%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 23.1 Intersection LOS: C
Intersection Capacity Utilization 41.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Menaul Blvd. & I-25 NB Frntg. Rd.

HCM Signalized Intersection Capacity Analysis
3: Menaul Blvd. & I-25 NB Frntg. Rd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	831	0	0	866	75	89	227	146	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95	1.00			
Frt	1.00	1.00			0.99		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085			5024		1770	3539	1583			
Flt Permitted	0.14	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	258	5085			5024		1770	3539	1583			
Peak-hour factor, PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.76	0.76	0.76	0.85	0.85	0.85
Adj. Flow (vph)	139	944	0	0	931	81	117	299	192	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	69	0	0	0
Lane Group Flow (vph)	139	944	0	0	1001	0	117	299	123	0	0	0
Turn Type	pm+pt						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	43.3	43.3			29.2		56.7	56.7	56.7			
Effective Green, g (s)	44.3	44.3			30.2		57.7	57.7	57.7			
Actuated g/C Ratio	0.40	0.40			0.27		0.52	0.52	0.52			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	243	2048			1379		928	1856	830			
v/s Ratio Prot	c0.05	0.19			c0.20			c0.08				
v/s Ratio Perm	0.18						0.07		0.08			
v/c Ratio	0.57	0.46			0.73		0.13	0.16	0.15			
Uniform Delay, d1	38.0	24.1			36.2		13.3	13.6	13.5			
Progression Factor	1.00	1.00			0.63		1.00	1.00	1.00			
Incremental Delay, d2	3.2	0.2			1.9		0.3	0.2	0.4			
Delay (s)	41.2	24.3			24.7		13.6	13.8	13.9			
Level of Service	D	C			C		B	B	B			
Approach Delay (s)		26.4			24.7			13.8			0.0	
Approach LOS		C			C			B			A	

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

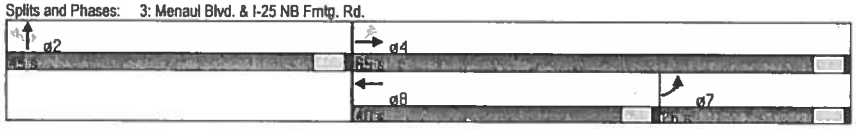
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	202	956	819	69	746	147
Turn Type	pm+pt			Perm		Perm
Protected Phases	7	4	8		2	
Permitted Phases	4			2		2
Detector Phase	7	4	8	2	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	25.0	65.0	40.0	45.0	45.0	45.0
Total Split (%)	22.7%	59.1%	36.4%	40.9%	40.9%	40.9%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	54.2	54.2	33.4	47.8	47.8	47.8
Actuated g/C Ratio	0.49	0.49	0.30	0.43	0.43	0.43
v/c Ratio	0.66	0.42	0.78	0.10	0.53	0.22
Control Delay	45.2	17.9	20.6	21.4	25.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	17.9	20.6	21.4	25.8	11.4
LOS	D	B	C	C	C	B
Approach Delay		22.7	20.6		23.3	
Approach LOS		C	C		C	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 20 (18%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 22.2 — Intersection LOS: C
Intersection Capacity Utilization 59.3% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Menaul Blvd. & I-25 NB Frntg. Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	202	956	0	0	819	75	69	746	147	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95	1.00			
Frt	1.00	1.00			0.99		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085			5021		1770	3539	1583			
Flt Permitted	0.11	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	199	5085			5021		1770	3539	1583			
Peak-hour factor, PHF	0.91	0.91	0.91	0.75	0.75	0.75	0.91	0.91	0.91	0.85	0.85	0.85
Adj. Flow (vph)	222	1051	0	0	1092	100	76	820	162	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	50	0	0	0
Lane Group Flow (vph)	222	1051	0	0	1182	0	76	820	112	0	0	0
Turn Type	pm+pt						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	53.2	53.2			32.4		46.8	46.8	46.8			
Effective Green, g (s)	54.2	54.2			33.4		47.8	47.8	47.8			
Actuated g/C Ratio	0.49	0.49			0.30		0.43	0.43	0.43			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	338	2506			1525		769	1538	688			
v/s Ratio Prot	c0.10	0.21			c0.24			c0.23				
v/s Ratio Perm	0.22						0.04		0.07			
v/c Ratio	0.66	0.42			0.78		0.10	0.53	0.16			
Uniform Delay, d1	34.7	17.8			34.9		18.4	22.9	18.9			
Progression Factor	1.00	1.00			0.50		1.00	1.00	1.00			
Incremental Delay, d2	4.6	0.1			2.2		0.3	1.3	0.5			
Delay (s)	39.3	18.0			19.7		18.6	24.2	19.4			
Level of Service	D	B			B		B	C	B			
Approach Delay (s)		21.7			19.7			23.1			0.0	
Approach LOS		C			B			C			A	

Intersection Summary

HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

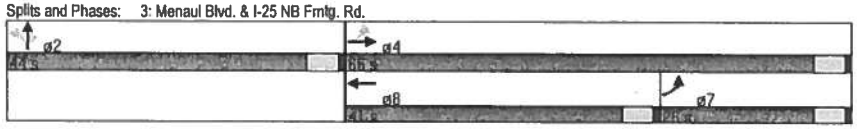
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	203	960	838	69	747	167
Turn Type	pm+pt			Perm		Perm
Protected Phases	7	4	8		2	
Permitted Phases	4			2		2
Detector Phase	7	4	8	2	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	25.0	66.0	41.0	44.0	44.0	44.0
Total Split (%)	22.7%	60.0%	37.3%	40.0%	40.0%	40.0%
Yellow Time (s)	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
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	54.9	54.9	34.1	47.1	47.1	47.1
Actuated g/C Ratio	0.50	0.50	0.31	0.43	0.43	0.43
v/c Ratio	0.66	0.42	0.78	0.10	0.54	0.25
Control Delay	45.1	17.5	20.0	21.9	26.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	17.5	20.0	21.9	26.4	12.6
LOS	D	B	B	C	C	B
Approach Delay		22.3	20.0		23.8	
Approach LOS		C	B		C	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 18 (16%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 22.0 — Intersection LOS: C
Intersection Capacity Utilization 59.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Menaul Blvd. & I-25 NB Frntg. Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	203	960	0	0	838	75	69	747	167	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.91			0.91		1.00	0.95	1.00			
Frt	1.00	1.00			0.99		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085			5023		1770	3539	1583			
Flt Permitted	0.10	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	196	5085			5023		1770	3539	1583			
Peak-hour factor, PHF	0.91	0.91	0.91	0.75	0.75	0.75	0.91	0.91	0.91	0.85	0.85	0.85
Adj. Flow (vph)	223	1055	0	0	1117	100	76	821	184	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	52	0	0	0
Lane Group Flow (vph)	223	1055	0	0	1207	0	76	821	132	0	0	0
Turn Type	pm+pt						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	53.9	53.9			33.1		46.1	46.1	46.1			
Effective Green, g (s)	54.9	54.9			34.1		47.1	47.1	47.1			
Actuated g/C Ratio	0.50	0.50			0.31		0.43	0.43	0.43			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	338	2538			1557		758	1515	678			
v/s Ratio Prot	c0.10	0.21			c0.24			c0.23				
v/s Ratio Perm	0.23						0.04		0.08			
v/c Ratio	0.66	0.42			0.78		0.10	0.54	0.19			
Uniform Delay, d1	34.7	17.4			34.5		18.8	23.4	19.6			
Progression Factor	1.00	1.00			0.49		1.00	1.00	1.00			
Incremental Delay, d2	4.6	0.1			2.1		0.3	1.4	0.6			
Delay (s)	39.3	17.5			19.1		19.1	24.8	20.3			
Level of Service	D	B			B		B	C	C			
Approach Delay (s)		21.3			19.1			23.6			0.0	
Approach LOS		C			B			C			A	

Intersection Summary

HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

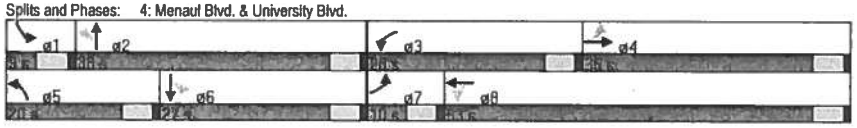
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	75	635	228	616	152	284	50	242
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	9.0	21.0
Total Split (s)	10.0	35.0	28.0	53.0	20.0	38.0	9.0	27.0
Total Split (%)	9.1%	31.8%	25.5%	48.2%	18.2%	34.5%	8.2%	24.5%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	36.2	26.9	48.8	35.5	52.9	40.7	43.8	35.2
Actuated g/C Ratio	0.33	0.24	0.44	0.32	0.48	0.37	0.40	0.32
v/c Ratio	0.27	0.74	0.71	0.46	0.36	0.41	0.15	0.20
Control Delay	13.2	22.0	34.3	29.0	20.7	25.4	12.8	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	22.0	34.3	29.0	20.7	25.4	12.8	18.4
LOS	B	C	C	C	C	C	B	B
Approach Delay		21.3		30.3		24.1		17.5
Approach LOS		C		C		C		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 104 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 24.4 Intersection LOS: C
Intersection Capacity Utilization 58.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Menaul Blvd. & University Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	635	219	228	616	64	152	284	127	50	242	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.91	
Frt	1.00	0.96		1.00	0.99		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4890		1770	5014		1770	3375		1770	5008	
Flt Permitted	0.35	1.00		0.13	1.00		0.48	1.00		0.41	1.00	
Satd. Flow (perm)	643	4890		240	5014		893	3375		772	5008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.78	0.78	0.78	0.85	0.85	0.85
Adj. Flow (vph)	82	690	238	251	677	70	195	364	163	59	285	32
RTOR Reduction (vph)	0	60	0	0	14	0	0	43	0	0	11	0
Lane Group Flow (vph)	82	868	0	251	733	0	195	484	0	59	306	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.3	26.0		47.8	34.5		52.2	39.6		41.8	34.2	
Effective Green, g (s)	36.3	27.0		48.8	35.5		53.2	40.6		43.8	35.2	
Actuated g/C Ratio	0.33	0.25		0.44	0.32		0.48	0.37		0.40	0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	307	1200		354	1618		544	1246		385	1603	
v/s Ratio Prot	0.02	0.18		c0.11	0.15		c0.05	c0.14		0.01	0.06	
v/s Ratio Perm	0.07			c0.20			0.13			0.05		
v/c Ratio	0.27	0.72		0.71	0.45		0.36	0.39		0.15	0.19	
Uniform Delay, d1	25.9	38.1		23.5	29.6		16.6	25.6		20.7	27.1	
Progression Factor	0.65	0.53		1.00	1.00		1.00	1.00		0.63	0.63	
Incremental Delay, d2	0.5	2.1		6.4	0.2		0.4	0.9		0.2	0.3	
Delay (s)	17.4	22.3		29.9	29.8		17.0	26.5		13.3	17.3	
Level of Service	B	C		C	C		B	C		B	B	
Approach Delay (s)		21.9			29.8			23.9			16.7	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

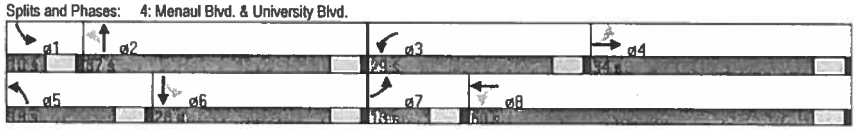
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	94	635	228	616	152	287	67	245
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	9.0	21.0
Total Split (s)	13.0	34.0	29.0	50.0	19.0	37.0	10.0	28.0
Total Split (%)	11.8%	30.9%	26.4%	45.5%	17.3%	33.6%	9.1%	25.5%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	36.9	26.9	48.8	34.8	52.7	40.3	44.3	35.4
Actuated g/C Ratio	0.34	0.24	0.44	0.32	0.48	0.37	0.40	0.32
v/c Ratio	0.33	0.74	0.71	0.48	0.37	0.42	0.21	0.22
Control Delay	15.3	24.1	34.1	29.6	20.8	25.7	13.8	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	24.1	34.1	29.6	20.8	25.7	13.8	17.7
LOS	B	C	C	C	C	C	B	B
Approach Delay		23.2		30.7		24.4		17.0
Approach LOS		C		C		C		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 108 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 58.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Menaul Blvd. & University Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	635	219	228	616	77	152	287	127	67	245	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.91	
Frt	1.00	0.96		1.00	0.98		1.00	0.95		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4890		1770	5000		1770	3376		1770	4950	
Flt Permitted	0.33	1.00		0.13	1.00		0.46	1.00		0.40	1.00	
Satd. Flow (perm)	607	4890		241	5000		850	3376		753	4950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.78	0.78	0.78	0.85	0.85	0.85
Adj. Flow (vph)	102	690	238	251	677	85	195	368	163	79	288	62
RTOR Reduction (vph)	0	59	0	0	17	0	0	42	0	0	26	0
Lane Group Flow (vph)	102	869	0	251	745	0	195	489	0	79	324	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.9	25.9		47.8	33.8		52.1	39.3		42.3	34.4	
Effective Green, g (s)	36.9	26.9		48.8	34.8		53.2	40.3		44.3	35.4	
Actuated g/C Ratio	0.34	0.24		0.44	0.32		0.48	0.37		0.40	0.32	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	309	1196		356	1582		527	1237		386	1593	
v/s Ratio Prot	0.03	0.18		c0.11	0.15		c0.05	c0.14		0.02	0.07	
v/s Ratio Perm	0.08			c0.20			0.13			0.07		
v/c Ratio	0.33	0.73		0.71	0.47		0.37	0.40		0.20	0.20	
Uniform Delay, d1	25.8	38.2		23.4	30.2		16.7	25.8		20.6	27.1	
Progression Factor	0.72	0.59		1.00	1.00		1.00	1.00		0.67	0.65	
Incremental Delay, d2	0.6	2.2		6.2	0.2		0.4	0.9		0.3	0.3	
Delay (s)	19.2	24.5		29.6	30.4		17.1	26.8		14.1	17.8	
Level of Service	B	C		C	C		B	C		B	B	
Approach Delay (s)		24.0			30.2			24.2			17.1	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

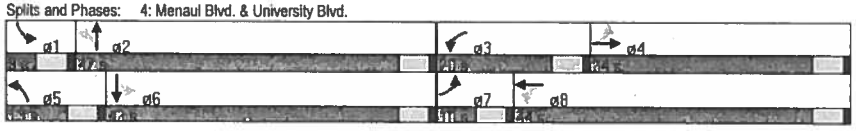
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	66	837	200	867	178	704	63	206
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	9.0	21.0
Total Split (s)	10.0	34.0	20.0	44.0	13.0	47.0	9.0	43.0
Total Split (%)	9.1%	30.9%	18.2%	40.0%	11.8%	42.7%	8.2%	39.1%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	37.6	30.2	48.5	37.1	53.0	43.1	45.9	39.5
Actuated g/C Ratio	0.34	0.27	0.44	0.34	0.48	0.39	0.42	0.36
v/c Ratio	0.35	0.84	0.72	0.61	0.34	0.73	0.36	0.15
Control Delay	24.1	33.7	37.0	31.2	18.8	31.0	16.2	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	33.7	37.0	31.2	18.8	31.0	16.2	13.0
LOS	C	C	D	C	B	C	B	B
Approach Delay		33.1		32.2		29.1		13.7
Approach LOS		C		C		C		B

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: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 30.0 — Intersection LOS: C
Intersection Capacity Utilization 75.9% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Menaul Blvd. & University Blvd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	837	173	200	867	93	178	704	266	63	206	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.91	
Frt	1.00	0.97		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4955		1770	5011		1770	3394		1770	4980	
Flt Permitted	0.19	1.00		0.12	1.00		0.53	1.00		0.14	1.00	
Satd. Flow (perm)	354	4955		217	5011		988	3394		262	4980	
Peak-hour factor, PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.97	0.97	0.97	0.89	0.89	0.89
Adj. Flow (vph)	76	962	199	215	932	100	184	726	274	71	231	37
RTOR Reduction (vph)	0	29	0	0	12	0	0	35	0	0	20	0
Lane Group Flow (vph)	76	1132	0	215	1020	0	184	965	0	71	248	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.8	29.3		47.6	36.1		51.0	42.0		43.8	38.4	
Effective Green, g (s)	37.8	30.3		48.6	37.1		53.0	43.0		45.8	39.4	
Actuated g/C Ratio	0.34	0.28		0.44	0.34		0.48	0.39		0.42	0.36	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	218	1365		298	1690		547	1327		197	1784	
v/s Ratio Prot	0.02	c0.23		c0.09	0.20		c0.03	c0.28		0.02	0.05	
v/s Ratio Perm	0.10			0.22			0.13			0.13		
v/c Ratio	0.35	0.83		0.72	0.60		0.34	0.73		0.36	0.14	
Uniform Delay, d1	25.2	37.4		23.3	30.3		16.6	28.5		21.6	23.8	
Progression Factor	1.08	0.76		1.00	1.00		1.00	1.00		0.67	0.59	
Incremental Delay, d2	0.9	4.1		8.3	0.6		0.4	3.5		1.1	0.2	
Delay (s)	28.2	32.6		31.7	30.9		16.9	32.0		15.7	14.3	
Level of Service	C	C		C	C		B	C		B	B	
Approach Delay (s)		32.3			31.1			29.7			14.6	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Menaul Blvd. & University Blvd.

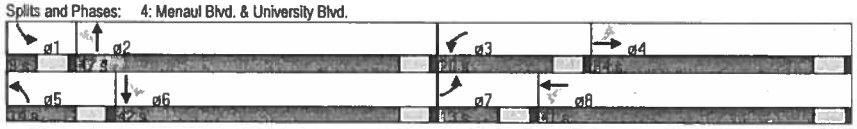
Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	89	837	200	867	178	707	75	209
Turn Type	pm+pt		pm+pt		pm+pt		pm+pt	
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	9.0	21.0	9.0	21.0
Total Split (s)	13.0	34.0	20.0	41.0	14.0	47.0	9.0	42.0
Total Split (%)	11.8%	30.9%	18.2%	37.3%	12.7%	42.7%	8.2%	38.2%
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)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	C-Min	Min	C-Min
Act Effct Green (s)	39.3	30.2	48.4	35.4	52.9	43.0	45.5	39.0
Actuated g/C Ratio	0.36	0.27	0.44	0.32	0.48	0.39	0.41	0.35
v/c Ratio	0.44	0.84	0.72	0.65	0.35	0.74	0.43	0.16
Control Delay	31.1	34.9	37.2	33.1	18.9	31.1	19.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	34.9	37.2	33.1	18.9	31.1	19.5	12.5
LOS	C	C	D	C	B	C	B	B
Approach Delay		34.6		33.8		29.2		14.1
Approach LOS		C		C		C		B

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 108 (98%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 30.9 — Intersection LOS: C
Intersection Capacity Utilization 76.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Menaul Blvd. & University Blvd.



HCM Signalized Intersection Capacity Analysis
4: Menaul Blvd. & University Blvd.

Terry O. Brown, P.E.
4/5/2012 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	837	173	200	867	109	178	707	266	75	209	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	0.95		1.00	0.91	
Frt	1.00	0.97		1.00	0.98		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4955		1770	5000		1770	3394		1770	4934	
Flt Permitted	0.17	1.00		0.12	1.00		0.51	1.00		0.14	1.00	
Satd. Flow (perm)	308	4955		218	5000		943	3394		262	4934	
Peak-hour factor, PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.97	0.97	0.97	0.89	0.89	0.89
Adj. Flow (vph)	102	962	199	215	932	117	184	729	274	84	235	58
RTOR Reduction (vph)	0	29	0	0	15	0	0	35	0	0	37	0
Lane Group Flow (vph)	102	1132	0	215	1034	0	184	968	0	84	256	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.3	29.2		47.5	34.4		51.5	42.0		43.5	38.0	
Effective Green, g (s)	39.3	30.2		48.5	35.4		53.5	43.0		45.5	39.0	
Actuated g/C Ratio	0.36	0.27		0.44	0.32		0.49	0.39		0.41	0.35	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	231	1360		298	1609		538	1327		197	1749	
v/s Ratio Prot	0.04	c0.23		c0.09	0.21		c0.03	c0.29		c0.03	0.05	
v/s Ratio Perm	0.12			0.22			0.13			0.15		
v/c Ratio	0.44	0.83		0.72	0.64		0.34	0.73		0.43	0.15	
Uniform Delay, d1	24.8	37.5		23.4	31.9		16.3	28.5		22.0	24.2	
Progression Factor	1.36	0.79		1.00	1.00		1.00	1.00		0.75	0.62	
Incremental Delay, d2	1.3	4.3		8.3	0.9		0.4	3.5		1.5	0.2	
Delay (s)	35.0	34.1		31.7	32.8		16.7	32.1		18.0	15.1	
Level of Service	D	C		C	C		B	C		B	B	
Approach Delay (s)		34.2			32.6			29.7			15.7	
Approach LOS		C			C			C			B	

Intersection Summary

HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	928	251	762	195	531	79	350
v/c Ratio	0.33	0.74	0.71	0.48	0.37	0.42	0.21	0.22
Control Delay	15.3	24.1	34.1	29.6	20.8	25.7	13.8	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	24.1	34.1	29.6	20.8	25.7	13.8	17.7
Queue Length 50th (ft)	22	67	115	152	78	127	18	35
Queue Length 95th (ft)	36	116	177	167	127	172	41	86
Internal Link Dist (ft)		959		396		658		692
Turn Bay Length (ft)	90		90		100		180	
Base Capacity (vph)	314	1412	454	2105	545	1309	385	1663
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.66	0.55	0.36	0.36	0.41	0.21	0.21

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	1161	215	1049	184	1003	84	293
v/c Ratio	0.44	0.84	0.72	0.65	0.35	0.74	0.43	0.16
Control Delay	31.1	34.9	37.2	33.1	18.9	31.1	19.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	34.9	37.2	33.1	18.9	31.1	19.5	12.5
Queue Length 50th (ft)	27	120	89	218	77	316	19	35
Queue Length 95th (ft)	96	214	174	269	121	377	41	36
Internal Link Dist (ft)		959		396		658		692
Turn Bay Length (ft)	90		90		100		180	
Base Capacity (vph)	235	1411	324	1703	536	1398	197	1830
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.82	0.66	0.62	0.34	0.72	0.43	0.16

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	3	454	4	2	319
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.91	0.91	0.80	0.80
Hourly flow rate (vph)	7	4	499	4	2	399
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)			772			1032
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	705	252			503	
vC1, stage 1 conf vol	501					
vC2, stage 2 conf vol	204					
vCu, unblocked vol	620	149			410	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	570	840			1104	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	7	4	333	171	2	199	199
Volume Left	7	0	0	0	2	0	0
Volume Right	0	4	0	4	0	0	0
cSH	570	840	1700	1700	1104	1700	1700
Volume to Capacity	0.01	0.00	0.20	0.10	0.00	0.12	0.12
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	11.4	9.3	0.0	0.0	8.3	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.6		0.0		0.1		
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	18	5	1	3	5	483	4	2	319	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.75	0.91	0.91	0.91	0.80	0.80	0.80
Hourly flow rate (vph)	1	1	21	7	1	4	5	531	4	2	399	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)								772			1032	
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	685	951	200	770	949	268	400			535		
vC1, stage 1 conf vol	404	404		544	544							
vC2, stage 2 conf vol	281	546		226	405							
vCu, unblocked vol	601	876	200	689	875	168	400			446		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	99	100	100	100			100		
cM capacity (veh/h)	540	457	808	486	457	816	1155			1072		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	24	8	4	5	354	181	2	266	134
Volume Left	1	7	0	5	0	0	2	0	0
Volume Right	21	0	4	0	0	4	0	0	1
cSH	760	481	816	1155	1700	1700	1072	1700	1700
Volume to Capacity	0.03	0.02	0.00	0.00	0.21	0.11	0.00	0.16	0.08
Queue Length 95th (ft)	2	1	0	0	0	0	0	0	0
Control Delay (s)	9.9	12.6	9.4	8.1	0.0	0.0	8.4	0.0	0.0
Lane LOS	A	B	A	A			A		
Approach Delay (s)	9.9	11.6		0.1			0.1		
Approach LOS	A	B							

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	30.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	4	803	3	1	275
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.90	0.90	0.89	0.89
Hourly flow rate (vph)	3	5	892	3	1	309
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)			772			1032
pX, platoon unblocked	0.80	0.80			0.80	
vC, conflicting volume	1051	448			896	
vC1, stage 1 conf vol	894					
vC2, stage 2 conf vol	157					
vCu, unblocked vol	568	0			374	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			100	
cM capacity (veh/h)	508	869			946	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	3	5	595	301	1	154	154
Volume Left	3	0	0	0	1	0	0
Volume Right	0	5	0	3	0	0	0
cSH	508	869	1700	1700	946	1700	1700
Volume to Capacity	0.01	0.01	0.35	0.18	0.00	0.09	0.09
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	12.1	9.2	0.0	0.0	8.8	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.2		0.0		0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	14	2	1	4	6	839	3	1	275	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.75	0.90	0.90	0.90	0.89	0.89	0.89
Hourly flow rate (vph)	1	1	16	3	1	5	7	932	3	1	309	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)								772			1032	
pX, platoon unblocked	0.80	0.80		0.80	0.80	0.80				0.80		
vC, conflicting volume	797	1261	155	1121	1260	468	310			936		
vC1, stage 1 conf vol	312	312		947	947							
vC2, stage 2 conf vol	485	949		174	312							
vCu, unblocked vol	252	830	155	656	829	0	310			425		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	99	100	99	99			100		
cM capacity (veh/h)	638	415	863	427	415	869	1247			907		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	19	4	5	7	621	314	1	206	104
Volume Left	1	3	0	7	0	0	1	0	0
Volume Right	16	0	5	0	0	3	0	0	1
cSH	792	423	869	1247	1700	1700	907	1700	1700
Volume to Capacity	0.02	0.01	0.01	0.01	0.37	0.18	0.00	0.12	0.06
Queue Length 95th (ft)	2	1	0	0	0	0	0	0	0
Control Delay (s)	9.7	13.6	9.2	7.9	0.0	0.0	9.0	0.0	0.0
Lane LOS	A	B	A	A			A		
Approach Delay (s)	9.7	11.1		0.1			0.0		
Approach LOS	A	B							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	6	9	428	36	26	303
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.93	0.93	0.78	0.78
Hourly flow rate (vph)	8	12	460	39	33	388
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						418
pX, platoon unblocked						
vC, conflicting volume	740	249			499	
vC1, stage 1 conf vol	480					
vC2, stage 2 conf vol	261					
vCu, unblocked vol	740	249			499	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			97	
cM capacity (veh/h)	527	750			1061	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	8	12	307	192	33	194	194
Volume Left	8	0	0	0	33	0	0
Volume Right	0	12	0	39	0	0	0
cSH	527	750	1700	1700	1061	1700	1700
Volume to Capacity	0.02	0.02	0.18	0.11	0.03	0.11	0.11
Queue Length 95th (ft)	1	1	0	0	2	0	0
Control Delay (s)	11.9	9.9	0.0	0.0	8.5	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.7		0.0		0.7		
Approach LOS	B						

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	1	28	6	1	9	29	428	36	26	303	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.75	0.92	0.75	0.92	0.93	0.93	0.78	0.78	0.92
Hourly flow rate (vph)	32	1	30	8	1	12	32	460	39	33	388	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											418	
pX, platoon unblocked												
vC, conflicting volume	767	1024	201	834	1011	249	402			499		
vC1, stage 1 conf vol	462	462		543	543							
vC2, stage 2 conf vol	306	562		292	468							
vCu, unblocked vol	767	1024	201	834	1011	249	402			499		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	96	98	100	98	97			97		
cM capacity (veh/h)	457	394	807	420	403	750	1154			1061		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	63	9	12	32	307	192	33	259	143
Volume Left	32	8	0	32	0	0	33	0	0
Volume Right	30	0	12	0	0	39	0	0	13
cSH	576	418	750	1154	1700	1700	1061	1700	1700
Volume to Capacity	0.11	0.02	0.02	0.03	0.18	0.11	0.03	0.15	0.08
Queue Length 95th (ft)	9	2	1	2	0	0	2	0	0
Control Delay (s)	12.0	13.8	9.9	8.2	0.0	0.0	8.5	0.0	0.0
Lane LOS	B	B	A	A			A		
Approach Delay (s)	12.0	11.6		0.5			0.7		
Approach LOS	B	B							

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	36.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	22	780	23	11	263
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.90	0.90	0.94	0.94
Hourly flow rate (vph)	16	29	867	26	12	280
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						418
pX, platoon unblocked						
vC, conflicting volume	1043	446			892	
vC1, stage 1 conf vol	879					
vC2, stage 2 conf vol	163					
vCu, unblocked vol	1043	446			892	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			98	
cM capacity (veh/h)	351	560			756	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	29	578	314	12	140	140
Volume Left	16	0	0	0	12	0	0
Volume Right	0	29	0	26	0	0	0
cSH	351	560	1700	1700	756	1700	1700
Volume to Capacity	0.05	0.05	0.34	0.18	0.02	0.08	0.08
Queue Length 95th (ft)	4	4	0	0	1	0	0
Control Delay (s)	15.7	11.8	0.0	0.0	9.8	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	13.2		0.0		0.4		
Approach LOS	B						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1	21	12	1	22	36	780	23	11	263	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.75	0.90	0.90	0.90	0.94	0.94	0.94
Hourly flow rate (vph)	26	1	25	16	1	29	40	867	26	12	280	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											418	
pX, platoon unblocked												
vC, conflicting volume	855	1283	148	1148	1279	446	296			892		
vC1, stage 1 conf vol	311	311		959	959							
vC2, stage 2 conf vol	543	972		189	319							
vCu, unblocked vol	855	1283	148	1148	1279	446	296			892		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	97	94	100	95	97			98		
cM capacity (veh/h)	400	290	872	256	300	560	1263			756		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	52	17	29	40	578	314	12	187	109
Volume Left	26	16	0	40	0	0	12	0	0
Volume Right	25	0	29	0	0	26	0	0	16
cSH	533	259	560	1263	1700	1700	756	1700	1700
Volume to Capacity	0.10	0.07	0.05	0.03	0.34	0.18	0.02	0.11	0.06
Queue Length 95th (ft)	8	5	4	2	0	0	1	0	0
Control Delay (s)	12.5	19.9	11.8	7.9	0.0	0.0	9.8	0.0	0.0
Lane LOS	B	C	B	A			A		
Approach Delay (s)	12.5	14.8		0.3			0.4		
Approach LOS	B	B							

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	44.9%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	725	25	0	437	0	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Hourly flow rate (vph)	788	27	0	475	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	481			536		
pX, platoon unblocked			0.81		0.83	0.81
vC, conflicting volume			815		960	408
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			296		209	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			1020		632	876

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	525	290	158	158	158	22
Volume Left	0	0	0	0	0	0
Volume Right	0	27	0	0	0	22
cSH	1700	1700	1700	1700	1700	876
Volume to Capacity	0.31	0.17	0.09	0.09	0.09	0.03
Queue Length 95th (ft)	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.2
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.2
Approach LOS						A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	754	32	0	759	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Hourly flow rate (vph)	820	35	0	825	0	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	481			536		
pX, platoon unblocked			0.84		0.90	0.84
vC, conflicting volume			854		1112	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			452		153	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			930		739	913

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	546	308	275	275	275	16
Volume Left	0	0	0	0	0	0
Volume Right	0	35	0	0	0	16
cSH	1700	1700	1700	1700	1700	913
Volume to Capacity	0.32	0.18	0.16	0.16	0.16	0.02
Queue Length 95th (ft)	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	9.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			9.0
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	31 9%	ICU Level of Service	A
Analysis Period (min)	15		

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **Candelaria Blvd**
N-S Street: **University Blvd**

Speed Limit (Candelaria Blvd)= **40** MPH
Speed Limit (University Blvd)= **35** MPH
Date of Count: **3/14/12**

Begin Time	End Time	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	~~18~~	~~65~~	~~36~~	~~9~~	~~36~~	~~9~~	~~23~~	~~51~~	~~13~~	~~4~~	~~0~~	~~3~~
7:15 AM	7:30 AM	~~31~~	~~70~~	~~29~~	~~11~~	~~46~~	~~25~~	~~15~~	~~45~~	~~12~~	~~2~~	~~0~~	~~2~~
7:30 AM	7:45 AM	~~26~~	~~103~~	~~40~~	~~13~~	~~66~~	~~23~~	~~20~~	~~44~~	~~12~~	~~5~~	~~0~~	~~2~~
7:45 AM	8:00 AM	**26**	**119**	**48**	**22**	**95**	**33**	**20**	**66**	**19**	**6**	**1**	**3**
8:00 AM	8:15 AM	**20**	**122**	**45**	**24**	**92**	**24**	**22**	**60**	**15**	**4**	**0**	**5**
8:15 AM	8:30 AM	**30**	**97**	**34**	**13**	**72**	**29**	**15**	**51**	**21**	**3**	**2**	**5**
8:30 AM	8:45 AM	**23**	**116**	**34**	**20**	**79**	**34**	**23**	**47**	**18**	**5**	**0**	**0**
8:45 AM	9:00 AM	~~36~~	~~116~~	~~38~~	~~21~~	~~87~~	~~34~~	~~20~~	~~63~~	~~19~~	~~3~~	~~0~~	~~1~~
AM Peak Hour Volumes		**99**	**454**	**161**	**79**	**338**	**120**	**80**	**224**	**73**	**18**	**3**	**13**
% of Total Traffic		6.0%	27.3%	9.7%	4.8%	20.3%	7.2%	4.8%	13.5%	4.4%	1.1%	0.2%	0.8%
% Directional			43.0%			32.3%			22.7%			2.0%	
AM Peak Hour Factor			*0.92*			*0.90*			*0.90*			*0.85*	

Begin Time	End Time	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	~~24~~	~~129~~	~~40~~	~~16~~	~~116~~	~~42~~	~~23~~	~~95~~	~~18~~	~~6~~	~~0~~	~~2~~
4:15 PM	4:30 PM	~~32~~	~~129~~	~~27~~	~~27~~	~~152~~	~~48~~	~~26~~	~~115~~	~~19~~	~~14~~	~~1~~	~~2~~
4:30 PM	4:45 PM	**22**	**134**	**36**	**22**	**123**	**40**	**24**	**85**	**22**	**5**	**2**	**3**
4:45 PM	5:00 PM	**29**	**115**	**32**	**19**	**145**	**55**	**24**	**87**	**27**	**10**	**3**	**4**
5:00 PM	5:15 PM	**31**	**113**	**39**	**22**	**161**	**56**	**34**	**99**	**28**	**10**	**1**	**5**
5:15 PM	5:30 PM	**38**	**126**	**28**	**24**	**181**	**41**	**38**	**155**	**19**	**11**	**0**	**6**
5:30 PM	5:45 PM	~~23~~	~~106~~	~~21~~	~~11~~	~~127~~	~~34~~	~~28~~	~~112~~	~~23~~	~~6~~	~~0~~	~~12~~
5:45 PM	6:00 PM	~~23~~	~~93~~	~~28~~	~~19~~	~~98~~	~~36~~	~~16~~	~~91~~	~~17~~	~~8~~	~~1~~	~~3~~
PM Peak Hour Volumes		**120**	**488**	**135**	**87**	**610**	**192**	**120**	**426**	**96**	**36**	**6**	**18**
% of Total Traffic		5.1%	20.9%	5.8%	3.7%	26.1%	8.2%	5.1%	18.3%	4.1%	1.5%	0.3%	0.8%
% Directional			31.8%			38.1%			27.5%			2.6%	
PM Peak Hour Factor			*0.97*			*0.90*			*0.76*			*0.88*	

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **Candelaria Blvd**
N-S Street: **I-25 SB ramp**

Speed Limit (Candelaria Blvd)= **25** MPH
Speed Limit (I-25 SB ramp)= **25** MPH
Date of Count: **3/15/12**

Begin Time	End Time	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	~~0~~	~~125~~	~~10~~	~~10~~	~~86~~	~~0~~	~~0~~	~~0~~	~~0~~	~~26~~	~~46~~	~~31~~
7:15 AM	7:30 AM	~~0~~	~~149~~	~~12~~	~~12~~	~~84~~	~~0~~	~~0~~	~~0~~	~~0~~	~~30~~	~~56~~	~~28~~
7:30 AM	7:45 AM	~~0~~	~~182~~	~~24~~	~~19~~	~~105~~	~~0~~	~~0~~	~~0~~	~~0~~	~~22~~	~~61~~	~~29~~
7:45 AM	8:00 AM	**0**	**235**	**44**	**19**	**147**	**0**	**0**	**0**	**0**	**57**	**114**	**42**
8:00 AM	8:15 AM	**0**	**195**	**30**	**26**	**135**	**0**	**0**	**0**	**0**	**48**	**110**	**43**
8:15 AM	8:30 AM	**0**	**149**	**26**	**13**	**107**	**0**	**0**	**0**	**0**	**56**	**89**	**38**
8:30 AM	8:45 AM	**0**	**168**	**32**	**17**	**121**	**0**	**0**	**0**	**0**	**42**	**96**	**34**
8:45 AM	9:00 AM	~~0~~	~~147~~	~~24~~	~~16~~	~~82~~	~~0~~	~~0~~	~~0~~	~~0~~	~~41~~	~~76~~	~~27~~
AM Peak Hour Volumes		**0**	**747**	**132**	**75**	**510**	**0**	**0**	**0**	**0**	**203**	**409**	**157**
% of Total Traffic		0.0%	33.5%	5.9%	3.4%	22.8%	0.0%	0.0%	0.0%	0.0%	9.1%	18.3%	7.0%
% Directional			39.4%			26.2%			0.0%			34.4%	
AM Peak Hour Factor			*0.79*			*0.88*			*#DIV/0!*			*0.90*	

Begin Time	End Time	Eastbound (Candelaria Blvd)			Westbound (Candelaria Blvd)			Northbound (I-25 SB ramp)			Southbound (I-25 SB ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	~~0~~	~~137~~	~~23~~	~~21~~	~~129~~	~~0~~	~~0~~	~~0~~	~~0~~	~~53~~	~~74~~	~~41~~
4:15 PM	4:30 PM	~~0~~	~~115~~	~~11~~	~~19~~	~~146~~	~~0~~	~~0~~	~~0~~	~~0~~	~~51~~	~~68~~	~~44~~
4:30 PM	4:45 PM	**0**	**145**	**28**	**14**	**144**	**0**	**0**	**0**	**0**	**43**	**62**	**33**
4:45 PM	5:00 PM	**0**	**134**	**18**	**24**	**144**	**0**	**0**	**0**	**0**	**36**	**66**	**43**
5:00 PM	5:15 PM	**0**	**149**	**26**	**17**	**187**	**0**	**0**	**0**	**0**	**48**	**68**	**41**
5:15 PM	5:30 PM	**0**	**143**	**19**	**18**	**178**	**0**	**0**	**0**	**0**	**39**	**80**	**39**
5:30 PM	5:45 PM	~~0~~	~~113~~	~~8~~	~~10~~	~~104~~	~~0~~	~~0~~	~~0~~	~~0~~	~~37~~	~~57~~	~~37~~
5:45 PM	6:00 PM	~~0~~	~~63~~	~~8~~	~~13~~	~~78~~	~~0~~	~~0~~	~~0~~	~~0~~	~~9~~	~~29~~	~~10~~
PM Peak Hour Volumes		**0**	**571**	**91**	**73**	**653**	**0**	**0**	**0**	**0**	**166**	**276**	**156**
% of Total Traffic		0.0%	28.8%	4.6%	3.7%	32.9%	0.0%	0.0%	0.0%	0.0%	8.4%	13.9%	7.9%
% Directional			33.3%			36.6%			0.0%			30.1%	
PM Peak Hour Factor			*0.95*			*0.89*			*#DIV/0!*			*0.95*	

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **Menaul Blvd**
N-S Street: **I 25 E. ramp**

Speed Limit (Menaul Blvd)= **45** MPH
Speed Limit (I 25 E. ramp)= **35** MPH
Date of Count: **3/22/12**

Begin Time	End Time	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (I 25 E. ramp)			Southbound (I 25 E. ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	~~11~~	~~120~~	~~0~~	~~0~~	~~82~~	~~4~~	~~15~~	~~23~~	~~23~~	~~0~~	~~0~~	~~0~~
7:15 AM	7:30 AM	~~19~~	~~143~~	~~0~~	~~0~~	~~94~~	~~9~~	~~10~~	~~37~~	~~27~~	~~0~~	~~0~~	~~0~~
7:30 AM	7:45 AM	~~19~~	~~155~~	~~0~~	~~0~~	~~152~~	~~16~~	~~17~~	~~65~~	~~34~~	~~0~~	~~0~~	~~0~~
7:45 AM	8:00 AM	**37**	**225**	**0**	**0**	**211**	**11**	**40**	**74**	**31**	**0**	**0**	**0**
8:00 AM	8:15 AM	**33**	**219**	**0**	**0**	**223**	**13**	**27**	**61**	**39**	**0**	**0**	**0**
8:15 AM	8:30 AM	**22**	**169**	**0**	**0**	**212**	**30**	**15**	**57**	**29**	**0**	**0**	**0**
8:30 AM	8:45 AM	**26**	**186**	**0**	**0**	**182**	**20**	**6**	**31**	**29**	**0**	**0**	**0**
8:45 AM	9:00 AM	~~22~~	~~158~~	~~0~~	~~0~~	~~199~~	~~34~~	~~8~~	~~48~~	~~17~~	~~0~~	~~0~~	~~0~~
AM Peak Hour Volumes		**118**	**799**	**0**	**0**	**828**	**74**	**88**	**223**	**128**	**0**	**0**	**0**
% of Total Traffic		5.2%	35.4%	0.0%	0.0%	36.7%	3.3%	3.9%	9.9%	5.7%	0.0%	0.0%	0.0%
% Directional			40.6%			39.9%			19.4%			0.0%	
AM Peak Hour Factor			*0.88*			*0.93*			*0.76*			*#DIV/0!*	

Begin Time	End Time	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (I 25 E. ramp)			Southbound (I 25 E. ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	~~37~~	~~198~~	~~0~~	~~0~~	~~219~~	~~26~~	~~7~~	~~151~~	~~23~~	~~0~~	~~0~~	~~0~~
4:15 PM	4:30 PM	~~32~~	~~221~~	~~0~~	~~0~~	~~208~~	~~21~~	~~8~~	~~131~~	~~25~~	~~0~~	~~0~~	~~0~~
4:30 PM	4:45 PM	~~42~~	~~209~~	~~0~~	~~0~~	~~1~~	~~0~~	~~17~~	~~152~~	~~19~~	~~0~~	~~0~~	~~0~~
4:45 PM	5:00 PM	**54**	**252**	**0**	**0**	**82**	**14**	**18**	**158**	**29**	**0**	**0**	**0**
5:00 PM	5:15 PM	**55**	**248**	**0**	**0**	**264**	**18**	**19**	**171**	**34**	**0**	**0**	**0**
5:15 PM	5:30 PM	**46**	**249**	**0**	**0**	**255**	**29**	**13**	**207**	**38**	**0**	**0**	**0**
5:30 PM	5:45 PM	**40**	**174**	**0**	**0**	**206**	**13**	**18**	**199**	**44**	**0**	**0**	**0**
5:45 PM	6:00 PM	~~22~~	~~82~~	~~0~~	~~0~~	~~138~~	~~25~~	~~5~~	~~61~~	~~16~~	~~0~~	~~0~~	~~0~~
PM Peak Hour Volumes		**195**	**923**	**0**	**0**	**807**	**74**	**68**	**735**	**145**	**0**	**0**	**0**
% of Total Traffic		6.6%	31.3%	0.0%	0.0%	27.4%	2.5%	2.3%	24.9%	4.9%	0.0%	0.0%	0.0%
% Directional			37.9%			29.9%			32.2%			0.0%	
PM Peak Hour Factor			*0.91*			*0.78*			*0.91*			*#DIV/0!*	

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **Menaul Blvd**
N-S Street: **University Blvd**

Speed Limit (Menaul Blvd)= **45** MPH
Speed Limit (University Blvd)= **35** MPH
Date of Count: **3/22/12**

Begin Time	End Time	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	~~17~~	~~68~~	~~59~~	~~30~~	~~62~~	~~8~~	~~14~~	~~61~~	~~20~~	~~5~~	~~21~~	~~6~~
7:15 AM	7:30 AM	~~23~~	~~97~~	~~53~~	~~57~~	~~89~~	~~6~~	~~24~~	~~66~~	~~25~~	~~5~~	~~41~~	~~15~~
7:30 AM	7:45 AM	**19**	**118**	**53**	**51**	**138**	**14**	**39**	**66**	**32**	**4**	**54**	**4**
7:45 AM	8:00 AM	**16**	**159**	**60**	**56**	**174**	**17**	**49**	**90**	**39**	**14**	**67**	**11**
8:00 AM	8:15 AM	**24**	**175**	**51**	**63**	**169**	**14**	**42**	**73**	**24**	**18**	**63**	**6**
8:15 AM	8:30 AM	**15**	**174**	**52**	**55**	**126**	**18**	**21**	**52**	**31**	**13**	**54**	**6**
8:30 AM	8:45 AM	~~25~~	~~134~~	~~41~~	~~61~~	~~103~~	~~10~~	~~25~~	~~55~~	~~21~~	~~9~~	~~52~~	~~10~~
8:45 AM	9:00 AM	~~4~~	~~95~~	~~43~~	~~59~~	~~86~~	~~14~~	~~19~~	~~42~~	~~26~~	~~10~~	~~29~~	~~2~~
AM Peak Hour Volumes		**74**	**626**	**216**	**225**	**607**	**63**	**151**	**281**	**126**	**49**	**238**	**27**
% of Total Traffic		2.8%	23.3%	8.1%	8.4%	22.6%	2.3%	5.6%	10.5%	4.7%	1.8%	8.9%	1.0%
% Directional			34.1%			33.4%			20.8%			11.7%	
AM Peak Hour Factor			*0.92*			*0.91*			*0.78*			*0.85*	

Begin Time	End Time	Eastbound (Menaul Blvd)			Westbound (Menaul Blvd)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	~~18~~	~~178~~	~~30~~	~~49~~	~~210~~	~~22~~	~~38~~	~~132~~	~~41~~	~~19~~	~~50~~	~~13~~
4:15 PM	4:30 PM	~~19~~	~~197~~	~~25~~	~~37~~	~~184~~	~~15~~	~~47~~	~~209~~	~~74~~	~~13~~	~~52~~	~~6~~
4:30 PM	4:45 PM	**9**	**211**	**49**	**47**	**215**	**22**	**54**	**160**	**70**	**24**	**44**	**10**
4:45 PM	5:00 PM	**20**	**174**	**39**	**52**	**204**	**19**	**31**	**187**	**52**	**10**	**46**	**6**
5:00 PM	5:15 PM	**17**	**223**	**63**	**52**	**222**	**33**	**49**	**170**	**74**	**17**	**59**	**8**
5:15 PM	5:30 PM	**19**	**217**	**19**	**46**	**213**	**18**	**42**	**181**	**68**	**11**	**54**	**9**
5:30 PM	5:45 PM	~~19~~	~~203~~	~~45~~	~~40~~	~~181~~	~~22~~	~~47~~	~~165~~	~~76~~	~~14~~	~~40~~	~~5~~
5:45 PM	6:00 PM	~~17~~	~~144~~	~~22~~	~~45~~	~~175~~	~~20~~	~~42~~	~~170~~	~~66~~	~~15~~	~~30~~	~~12~~
PM Peak Hour Volumes		**65**	**825**	**170**	**197**	**854**	**92**	**176**	**698**	**264**	**62**	**203**	**33**
% of Total Traffic		1.8%	22.7%	4.7%	5.4%	23.5%	2.5%	4.8%	19.2%	7.3%	1.7%	5.6%	0.9%
% Directional			29.1%			31.4%			31.3%			8.2%	
PM Peak Hour Factor			*0.87*			*0.93*			*0.97*			*0.89*	

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **N. Super 8 drive**
N-S Street: **University Blvd**

Speed Limit (N. Super 8 drive)= **25** MPH
Speed Limit (University Blvd)= **35** MPH
Date of Count: **3/20/12**

Begin Time	End Time	Eastbound (N. Super 8 drive)			Westbound (N. Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	0	0	1	0	1	0	91	1	0	36	0
7:15 AM	7:30 AM	0	0	0	2	0	2	0	99	1	0	44	0
7:30 AM	7:45 AM	0	0	0	1	0	1	0	113	0	0	56	0
7:45 AM	8:00 AM	0	0	0	1	0	0	0	123	1	0	99	0
8:00 AM	8:15 AM	0	0	0	1	0	1	0	118	2	0	81	0
8:15 AM	8:30 AM	0	0	0	0	0	0	0	103	1	1	69	0
8:30 AM	8:45 AM	0	0	0	3	0	2	0	103	0	1	65	0
8:45 AM	9:00 AM	0	0	0	0	0	1	0	83	1	0	71	0
AM Peak Hour Volumes		**0**	**0**	**0**	**5**	**0**	**3**	**0**	**447**	**4**	**2**	**314**	**0**
% of Total Traffic		0.0%	0.0%	0.0%	0.6%	0.0%	0.4%	0.0%	57.7%	0.5%	0.3%	40.5%	0.0%
% Directional			0.0%			1.0%			58.2%			40.8%	
AM Peak Hour Factor			*#DIV/0!*			*0.40*			*0.91*			*0.80*	

Begin Time	End Time	Eastbound (N. Super 8 drive)			Westbound (N. Super 8 drive)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	0	0	0	0	0	0	168	0	2	72	0
4:15 PM	4:30 PM	0	0	0	2	0	3	0	207	1	0	61	0
4:30 PM	4:45 PM	0	0	0	0	0	0	0	164	0	0	69	0
4:45 PM	5:00 PM	0	0	0	0	0	1	0	198	2	0	60	0
5:00 PM	5:15 PM	0	0	0	0	0	1	0	210	0	1	75	0
5:15 PM	5:30 PM	0	0	0	2	0	2	0	219	1	0	67	0
5:30 PM	5:45 PM	0	0	0	0	0	1	0	158	0	0	50	0
5:45 PM	6:00 PM	0	0	0	0	0	2	0	131	1	0	21	0
PM Peak Hour Volumes		**0**	**0**	**0**	**2**	**0**	**4**	**0**	**791**	**3**	**1**	**271**	**0**
% of Total Traffic		0.0%	0.0%	0.0%	0.2%	0.0%	0.4%	0.0%	73.8%	0.3%	0.1%	25.3%	0.0%
% Directional			0.0%			0.6%			74.1%			25.4%	
PM Peak Hour Factor			*#DIV/0!*			*0.38*			*0.90*			*0.89*	

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **Claremont Rd**
N-S Street: **University Blvd**

Speed Limit (Claremont Rd)= **25** MPH
Speed Limit (University Blvd)= **35** MPH
Date of Count: **3/20/12**

Begin Time	End Time	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	0	0	1	0	1	0	83	8	9	35	0
7:15 AM	7:30 AM	0	0	0	0	0	0	0	93	6	7	44	0
7:30 AM	7:45 AM	0	0	0	1	0	2	0	103	10	7	55	0
7:45 AM	8:00 AM	0	0	0	1	0	2	0	106	17	6	98	0
8:00 AM	8:15 AM	0	0	0	2	0	2	0	113	5	10	79	0
8:15 AM	8:30 AM	0	0	0	2	0	3	0	100	3	3	67	0
8:30 AM	8:45 AM	0	0	0	3	0	4	0	96	7	3	62	0
8:45 AM	9:00 AM	0	0	0	2	0	1	0	79	4	7	69	0
AM Peak Hour Volumes		**0**	**0**	**0**	**6**	**0**	**9**	**0**	**422**	**35**	**26**	**299**	**0**
% of Total Traffic		0.0%	0.0%	0.0%	0.8%	0.0%	1.1%	0.0%	52.9%	4.4%	3.3%	37.5%	0.0%
% Directional			0.0%			1.9%			57.3%			40.8%	
AM Peak Hour Factor						*0.75*			*0.93*			*0.78*	

Begin Time	End Time	Eastbound (Claremont Rd)			Westbound (Claremont Rd)			Northbound (University Blvd)			Southbound (University Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	0	0	3	0	11	0	165	3	1	69	0
4:15 PM	4:30 PM	0	0	0	1	0	5	0	200	7	2	60	0
4:30 PM	4:45 PM	0	0	0	4	0	3	0	159	5	7	65	0
4:45 PM	5:00 PM	0	0	0	1	0	6	0	194	4	2	59	0
5:00 PM	5:15 PM	0	0	0	5	0	10	0	201	9	1	70	0
5:15 PM	5:30 PM	0	0	0	2	0	3	0	214	5	1	65	0
5:30 PM	5:45 PM	0	0	0	3	0	1	0	157	1	0	47	0
5:45 PM	6:00 PM	0	0	0	0	0	0	0	131	0	0	21	0
PM Peak Hour Volumes		**0**	**0**	**0**	**12**	**0**	**22**	**0**	**768**	**23**	**11**	**259**	**0**
% of Total Traffic		0.0%	0.0%	0.0%	1.1%	0.0%	2.0%	0.0%	70.1%	2.1%	1.0%	23.7%	0.0%
% Directional			0.0%			3.1%			72.2%			24.7%	
PM Peak Hour Factor						*0.57*			*0.90*			*0.94*	

Determination of Warrants for Auxiliary Lanes

Project Name: **Candelaria / University Project**
Name of Highway: **University Blvd**
Name of Cross Street: **Driveway A**

Determination of Warrants for: Eastbound Driveway

Implementation Year Volumes - **2015** **Posted Speed Limit:** **35**

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	2015	-	-	160		N/A		-	N/A	N/A
AM Peak Hour BUILD	2015	-	-	160		N/A		-	N/A	N/A
PM Peak Hour NO BUILD	2015	-	-	138		N/A		-	N/A	N/A
PM Peak Hour BUILD	2015	-	-	138		N/A		-	N/A	N/A

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	2015	-	-	227		N/A		N/A	N/A	N/A
AM Peak Hour BUILD	2015	5	490	242		N/A		N/A	N/A	N/A
PM Peak Hour NO BUILD	2015	-	-	402		N/A		N/A	N/A	N/A
PM Peak Hour BUILD	2015	6	466	420		N/A		N/A	N/A	N/A

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 Acceleraion 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 easthbound Driveway A at 100% Development of the Project

Worksheet Developed by Terry O. Brown, P.E.

Data Entry Sheet

Determination of Warrants for Deceleration Lanes

NM DOT State Access Management Manual Criteria

Claremont Ave / University Blvd

Project Information:

Project Name:	**Candelaria / University Project**
Project Location:	**Candelaria / University**
Implemenation Year:	**2015**
Project Environment:	**Urban** **Multi-Lane**

Street Information:

Major Street Name:	**University Blvd**
Minor Street Name:	**Claremont Ave**

Intersection Information:

	Orientation	Prevailing Speed	No. Lanes Each Direction
Claremont Ave	**Eastbound**	**25**	**N/A**
University Blvd	**North-South**	**35**	**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

University Blvd is Case	**2**
Speed Category	**35 to 40**

SB Right Turn Volumes		**SB Thru Volumes**
2015 AM Pk. Hr. NO BUILD	0	303
2015 AM Pk. Hr. BUILD	12	303
2015 PM Pk. Hr. NO BUILD	0	263
2015 PM Pk. Hr. BUILD	15	263

NB Left Turn Volumes		**NB Thru Volumes**
2015 AM Pk. Hr. NO BUILD	0	428
2015 AM Pk. Hr. BUILD	29	428
2015 PM Pk. Hr. NO BUILD	0	780
2015 PM Pk. Hr. BUILD	36	780

Worksheet Developed by Terry O. Brown, P.E.

Determination of Warrants for Auxiliary Lanes

Project Name: **Candelaria / University Project**
Name of Highway: **University Blvd**
Name of Cross Street: **Claremont Ave**

Determination of Warrants for: Eastbound Driveway

Implementation Year Volumes - **2015** **Posted Speed Limit:** **35**

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	2015	-	-	152		N/A		-	N/A	N/A
AM Peak Hour BUILD	2015	12	434	152		N/A		-	N/A	N/A
PM Peak Hour NO BUILD	2015	-	-	132		N/A		-	N/A	N/A
PM Peak Hour BUILD	2015	15	350	132		N/A		-	N/A	N/A

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	2015	-	-	214		N/A		N/A	N/A	N/A
AM Peak Hour BUILD	2015	29	166	214	✓	250	1.00	25	275	8:1
PM Peak Hour NO BUILD	2015	-	-	390		N/A		N/A	N/A	N/A
PM Peak Hour BUILD	2015	36	128	390	✓	250	1.00	50	300	8:1

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 Acceleraion 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 easthbound Driveway B at 100% Development of the Project

Determination of Warrants for Auxiliary Lanes

Project Name: **Candelaria / University Project**
Name of Highway: **University Blvd**
Name of Cross Street: **Claremont Ave**

Determination of Warrants for: Eastbound Driveway

Implementation Year Volumes - **2015** **Posted Speed Limit:** **35**

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	2015	-	-	152		N/A		-	N/A	N/A
AM Peak Hour BUILD	2015	12	434	152		N/A		-	N/A	N/A
PM Peak Hour NO BUILD	2015	-	-	132		N/A		-	N/A	N/A
PM Peak Hour BUILD	2015	15	350	132		N/A		-	N/A	N/A

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	2015	-	-	214		N/A		N/A	N/A	N/A
AM Peak Hour BUILD	2015	29	166	214	✓	250	1.00	25	275	8:1
PM Peak Hour NO BUILD	2015	-	-	390		N/A		N/A	N/A	N/A
PM Peak Hour BUILD	2015	36	128	390	✓	250	1.00	50	300	8:1

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 Acceleraion 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 easthbound Driveway B 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 Minimum Volume in Adjacent Through Lane (vphpl)[2]			RIGHT-TURN DECELERATION LANE 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**
	Left-turn Deceleratаion Lanes are Required on Urban Multi-lane Highways for the following Left-turn Volumes: • ≤30 mph : 56 vph or more • 35 to 40 mph : 46 vph or more • 45 to 55 mph : 36 vph or more			***Right-turn Deceleratаion Lanes are Required on Urban Multi-lane Highways for the following Right-turn Volumes:*** • ≤30 mph : 56 vph or more • 35 to 40 mph : 46 vph or more • 45 to 55 mph : 41 vph or more		

Notes:

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