Terry O. Brown P.E.

U. S. New Mexico Credit Union

(Learning Rd. / Coors Blvd.)

Letter of Traffic Analysis

October 26, 2011 FINAL

DRAFT 02-22-12

Signature Date

Presented to:

City of Albuquerque
Transportation Development Section

Prepared for:

Bohannan-Huston, Inc.
7500 Jefferson St. NE
Albuquerque, NM 87109

TERRY O. BROWN
NEW MEXICO
6407
LICENSED PROFESSIONAL ENGINEER

Terry O. Brown P.E.
P.O. Box 92051
Albuquerque, NM 87199
505 · 883 · 8807

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

Wednesday, October 26, 2011

Kristal Metro, P.E.
Transportation Section, Planning Department
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Dear Kristal:

As required by the City of Albuquerque Transportation Development Section of the Planning Department, I have prepared this supplemental analysis to the Montano Shoppes / Andalucia, Tract 6 Traffic Impact Study dated June 1, 2007. This supplemental analysis is to specifically address your concerns regarding the proposed U. S. New Mexico Credit Union facility being proposed at the northeast corner of Learning Rd. / Coors Blvd.

Proposed is a 12,380 S.F. Credit Union Facility with four drive-up windows (three standard drive-up windows and one drive-up ATM). Future building will be comprised of an additional 10,000 S.F. General Office Building. The site plan for the Banking Facility is on Page A-3 in the Appendix of the supplemental report. The vacant strip of land along Antequera Rd. is the location of the future General Office Building. This analysis will consider trips generated by both facilities even though there is no definite plan to construct the General Office space yet.

The Trip Generation Summary Table is on Page A-4 of the Appendix. Worksheets for the individual building uses are on Pages A-4a and A-4b. A 30% pass-by trip reduction was made for the trips generated by the Credit Union Facility only – not the office. Note that the trip generation rate for this parcel of land assumed in the June 1, 2007 Traffic Impact Study was somewhat higher than the actual calculated trip generation rate for this plan. The June, 2007 Traffic Impact Study assumed that there would be a banking facility plus two high turnover sit-down restaurants on this particular property. Comparative trip generation rates for the two project are shown below and on Page A-4 in the Appendix:

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Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Credit Union (Learning Rd. / Coors Blvd.)

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

COMMENT	USE (ITE CODE) DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
Future	General Office Building (710) - Less than 51,000	10.00	147	18	2	4	20
Building Size	Drive-In Bank (912)	12.37	1,833	86	67	160	160
	Total Trips - Credit Union Plus Office		**1,980**	**104**	**69**	**164**	**180**
	Pass-by Trip Reduction (Bank)	*30%*	*(550)*	*(26)*	*(20)*	*(48)*	*(48)*
	Net New Trips to Adjacent Transportation System		**1,430**	**78**	**49**	**116**	**132**
	Net New Trips Assumed in 2007 TIS		2,894	106	90	164	137

The primary trips generated by this proposed project were distributed onto the adjacent transportation system based on the Mid-Region Council of Governments Socioeconomic Data (2035 Data Set) considering the population distribution within a two mile radius of the project. Trip Assignments Maps are on Pages S-5 and A-6 in the Appendix showing how the generated primary trips associated with this project were distributed onto the adjacent transportation system. Generated volumes from the project are shown at each intersection on Page A-7 in the Appendix. Pass-by Trip adjustment assignments are shown on Page A-8 in the Appendix.

A recent traffic count was conducted at the intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd. to acquire the current AM and PM Peak Hour turning movement volumes at the intersection to be used as a basis of this study.

Recent Traffic Flow map data along Coors Blvd. demonstrates that an appropriate background traffic growth rate to apply to the existing traffic count volumes is 1.2% annual increase (see Montano Shoppes / Andalucia, Tract 6 Supplemental Study for new Wal-Mart plan). Therefore, the new traffic volumes in this study were increase 1.2% for one year (to the implementation year 2012) to calculate the forecast 2012 AM and PM Peak Hour NO BUILD volumes for this study.

To those 2012 NO BUILD volumes were added the primary and pass-by trips associated with the new U. S. New Mexico Credit Union Development (including 10,000 General Office future use) to calculate the 2012 AM and PM Peak Hour BUILD volumes for this study.

Analysis of the 2012 AM and PM Peak Hour NO BUILD and BUILD volumes were performed using Synchro 8, Build 800 based on the new 2010 Highway Capacity Manual. Analysis will be performed to the intersections of Dellyne Ave. (Learning Rd.) / Coors Blvd. (signalized), Mirandela Rd. / Coors Blvd. (unsignalized – right-in, right-out, left-in only), and the new U. S. New Mexico Credit Union driveway on Antequera Rd.

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Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Analysis of the signalized intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd.:

The following table summarizes the 2012 AM and PM Peak Hour results of the 2010 HCM analysis for the intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd.

Intersection: **#1 - Dellyne Ave. (Learning Rd.) / Coors Blvd.**

	2012 AM Peak Hour			2012 PM Peak Hour		
	BASE GEOMETRY			BASE GEOMETRY		
	NO BUILD		BUILD	NO BUILD		BUILD
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	LOS-Delay
Eastbound - Dellyne Ave. (Learning Rd.)						
L	2	D - 51.2	D - 51.1	2	E - 66.6	E - 68.6
T	1	F - 137	F - 145	1	E - 66.5	E - 75.5
R	>	F - 137	F - 145	>	E - 66.5	E - 75.5
Westbound - Dellyne Ave. (Learning Rd.)						
L	2	D - 53.5	E - 65.0	2	E - 59.5	E - 69.2
T	1	D - 39.7	D - 39.7	1	D - 52.4	D - 52.2
R	1	D - 35.6	D - 36.0	1	D - 48.1	D - 49.4
Northbound - Coors Blvd.						
L	1	C - 27.4	C - 27.5	1	E - 59.7	E - 61.8
T	3	C - 26.4	C - 26.7	3	B - 15.4	B - 17.0
R	1	B - 15.4	B - 16.5	1	A - 7.1	A - 8.2
Southbound - Coors Blvd.						
L	2	D - 51.7	D - 53.1	2	E - 57.2	E - 59.9
T	3	D - 37.0	D - 36.6	3	C - 23.2	C - 25.3
R	1	B - 15.1	B - 15.2	1	B - 14.5	B - 15.9
Intersection:		**D - 42.1**	**D - 43.2**		**C - 24.2**	**C - 27.3**

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The eastbound approach on Dellyne Ave. experiences long delays during the 2012 AM Peak Hour period. This was also the case demonstrated in the 2007 Traffic Impact Study. The 2007 report initially recommended construction of a new eastbound exclusive right turn lane, but after investigating the possibility of acquiring additional right-of-way on Dellyne Ave., it was decided that construction of the new right turn lane was not feasible. Therefore, the City of Albuquerque and the New Mexico Department of Transportation opted to not require construction of the improvement. Other improvements though were constructed by the developer.

Following is a summary of the calculated and available queuing at the intersection. The calculated queues are based on the Poisson's arrival method (95th percentile confidence

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

level) assuming a 110 second cycle length during the AM Peak Hour period and 130 second cycle length during the PM Peak Hour period.

Queueing Analysis Summary Sheet

Project: Credit Union (Dellyne Ave / Coors Blvd)
Intersection: **Dellyne Ave / Coors Blvd**

2012

Approach	Left Turns			Thru Movements				Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*231*	*300*	*1*	*30*	*Cont*		*0*	*282*	*0*
AM NO BUILD Queue	2	234	175	1	30	75		0	285	350
AM BUILD Queue	**2**	**234**	**175**	**1**	**42**	**75**		**0**	**285**	**350**
Existing Lane Length	*2*	*109*	*300*	*1*	*8*	*Cont*		*0*	*101*	*0*
PM NO BUILD Queue	2	110	125	1	8	25		0	102	175
PM BUILD Queue	**2**	**110**	**125**	**1**	**20**	**50**		**0**	**102**	**175**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*51*	*125*	*1*	*8*	*Cont*		*1*	*8*	*180*
AM NO BUILD Queue	2	52	75	1	8	25		1	8	25
AM BUILD Queue	**2**	**77**	**75**	**1**	**16**	**50**		**1**	**26**	**50**
Existing Lane Length	*2*	*37*	*125*	*1*	*7*	*Cont*		*1*	*11*	*180*
PM NO BUILD Queue	2	37	50	1	7	25		1	11	50
PM BUILD Queue	**2**	**88**	**100**	**1**	**21**	**50**		**1**	**47**	**100**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*59*	*350*	*3*	*1,615*	*Cont*		*1*	*69*	*150*
AM NO BUILD Queue	1	60	100	3	1,634	675		1	70	125
AM BUILD Queue	**1**	**60**	**100**	**3**	**1,634**	**675**		**1**	**105**	**150**
Existing Lane Length	*1*	*337*	*350*	*3*	*2,382*	*Cont*		*1*	*20*	*150*
PM NO BUILD Queue	1	341	450	3	2,411	>1,000	*	1	20	50
PM BUILD Queue	**1**	**341**	**450**	**3**	**2,411**	**>1,000**	*	**1**	**67**	**125**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*40*	*280*	*3*	*2,077*	*Cont*		*1*	*29*	*240*
AM NO BUILD Queue	2	40	50	3	2,102	825		1	29	75
AM BUILD Queue	**2**	**62**	**75**	**3**	**2,089**	**825**		**1**	**29**	**75**
Existing Lane Length	*2*	*7*	*280*	*3*	*1,971*	*Cont*		*1*	*141*	*240*
PM NO BUILD Queue	2	7	25	3	1,995	>1,000	*	1	143	225
PM BUILD Queue	**2**	**35**	**50**	**3**	**1,971**	**900**		**1**	**143**	**225**

	AM	PM
Cycle Length:	110	130

NOTE: Queue lengths are in feet.

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There appear to be no major queuing issues at the intersection which need to be addressed.

Analysis of the signalized intersection of Mirandela Ave. / Coors Blvd.:

The following table summarizes the 2012 AM and PM Peak Hour results of the 2010 HCM analysis for the intersection of Mirandela Ave. / Coors Blvd.:

Intersection: **#2 - Mirandela Ave. / Coors Blvd.**

	2012 AM Peak Hour			2012 PM Peak Hour		
	BASE GEOMETRY			BASE GEOMETRY		
	NO BUILD		BUILD	NO BUILD		BUILD
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	LOS-Delay
Westbound - Mirandela Ave.						
L	0	A - 0.0	A - 0.0	0	A - 0.0	A - 0.0
T	0	A - 0.0	A - 0.0	0	A - 0.0	A - 0.0
R	1	A - 0.0	A - 9.0	1	A - 0.0	A - 9.6
Southbound - Coors Blvd.						
L	1	A - 0.0	B - 13.9	1	A - 0.0	C - 18.5
T	3	A - 0.0	A - 0.0	3	A - 0.0	A - 0.0
R	0	A - 0.0	A - 0.0	0	A - 0.0	A - 0.0

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The intersection of Mirandela Ave. / Coors Blvd. is an approved right-in, right-out, left-in only unsignalized intersection that was approved by the Metropolitan Transportation Board of the Mid-Region Council of Governments in 2005. This intersection will provide a secondary access to the new U. S. New Mexico Credit Union project. There are no excessive delays that need to be addressed nor are there excessive queues at the intersection.

Analysis of the signalized intersection of Credit Union Driveway / Antequera Rd.:

The following table summarizes the 2012 AM and PM Peak Hour results of the 2010 HCM analysis for the intersection of Mirandela Ave. / Coors Blvd.:

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Intersection: **#3 - Credit Union Driveway / Antequ**

	2012 AM Peak Hour			2012 PM Peak Hour		
	BASE GEOMETRY			BASE GEOMETRY		
	NO BUILD		BUILD	NO BUILD		BUILD
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	LOS-Delay
Eastbound - Credit Union Driveway						
L	>	A - 0.0	B - 10.7	>	A - 0.0	B - 12.2
R	1	A - 0.0	B - 10.7	1	A - 0.0	B - 12.2
Northbound - Antequera Rd.						
L	>	A - 0.0	A - 3.1	>	A - 0.0	A - 3.9
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0
Southbound - Antequera Rd.						
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0
R	>	A - 0.0	A - 0.0	>	A - 0.0	A - 0.0

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The projected operation of the proposed U. S. New Mexico Credit Union Driveway / Antequera Rd. are projected to be acceptable for all conditions analyzed in this study. Therefore, no recommendations are made.

In addition to the preceding analysis, the following exhibits and displays are provided in the Appendix of this supplemental report as required by the City:

Pages A-1 and A-2:	Vicinity Maps
Page A-3:	Proposed Site Plan for U. S. New Mexico Credit Union
Page A-4:	Trip Generation Summary Table
Pages A-4a thru A-4b:	Trip Generation Worksheets for Individual Land Uses
Pages A-5 thru A-6:	Trip Assignments Maps
Pages A-7:	Trips Generated Volumes Map (Area wide)
Page A-8:	Pass-by Trip Adjustment Map
Pages A-9 thru A-15:	2012 AM/PM Turning Movements Volumes Worksheets
Pages A-16 thru A-23:	2010 HCM Analysis of Dellyne Ave. (Learning Rd.) / Coors Blvd.
Pages A-24 thru A-25:	2010 HCM Analysis of Mirandela Ave. / Coors Blvd.
Pages A-26 thru A-27:	2010 HCM Analysis of Credit Union Driveway / Antequera
Page A-26:	2011 Traffic Count – Dellyne Ave. (Learning Rd.) / Coors Blvd.
Page A-27:	Trip Generation Rate Table for Parcel in 2007 TIS

The findings of this supplemental analysis conclude that there are no significant operational issues to address associated with the new traffic generated by the proposed

Kristal Metro, P.E.
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Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

U.S. New Mexico Credit Union development project. The proposed project is expected to generate somewhat less traffic than what was assumed in the 2007 Traffic Impact Study for the Montano Shoppes / Andalucia, Tract 6 for the south commercial tract.

Additionally, it should be kept in mind that the developer of Andalucia, Tract 6 has already constructed significant improvements to the intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd. based on the findings and recommendations of the 2007 Montano Shoppes / Andalucia, Tract 6 Traffic Impact Study.

This supplemental analysis finds that the recommendations and mitigation requirements constructed by the developer based on the 2007 Traffic Impact Study are still valid, and that no further recommendations are made.

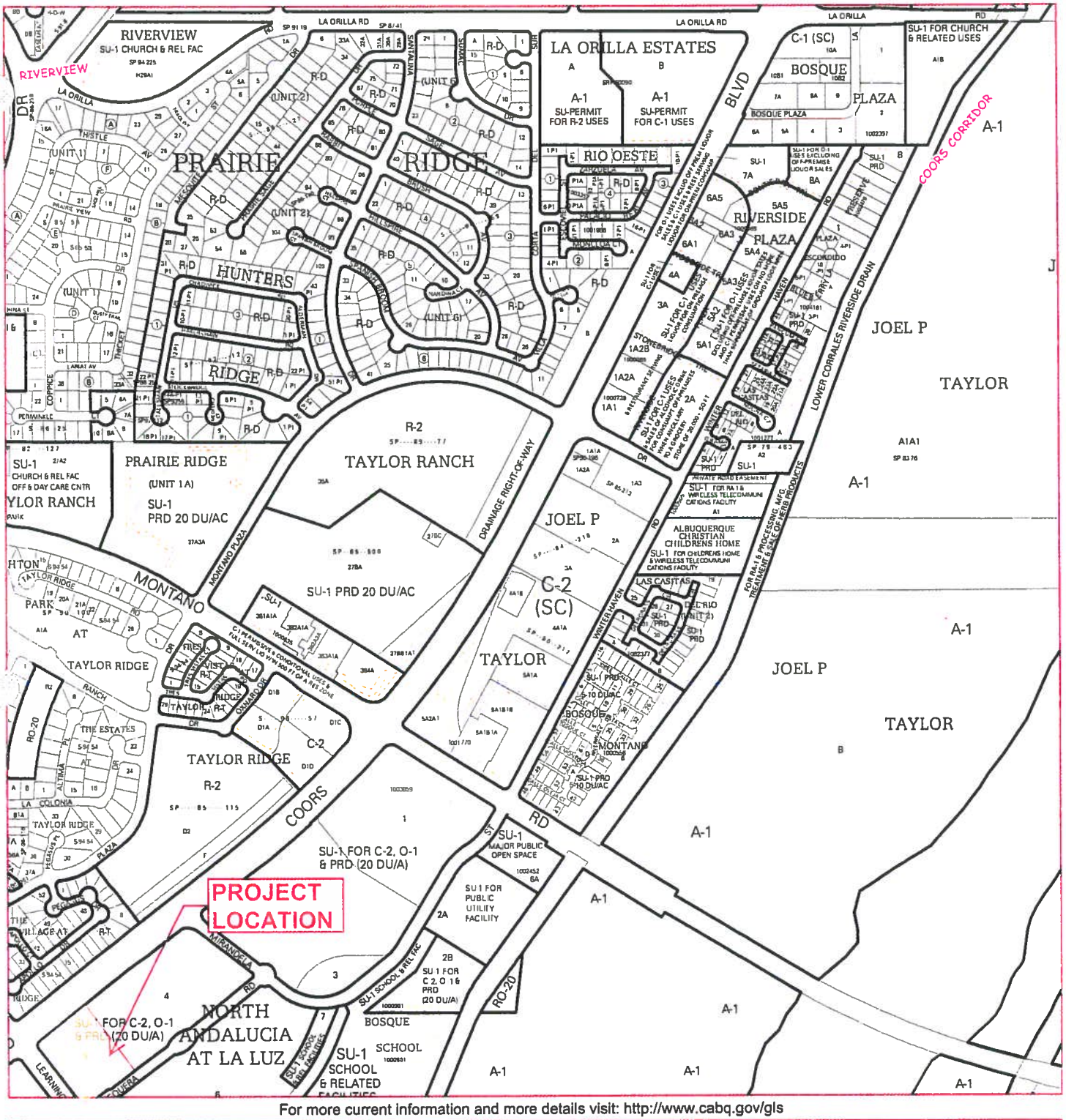
Please call me if you have questions.

Best Regards,

Terry O. Brown, P.E.

attachments as noted

cc: Richard Dourte, City of Albuquerque City Engineer
James Topmiller, BHI w/two copies of report
Jackie Fishman, Consensus Planning



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

Albuquerque Geographic Information System

Map amended through: 1/24/2011

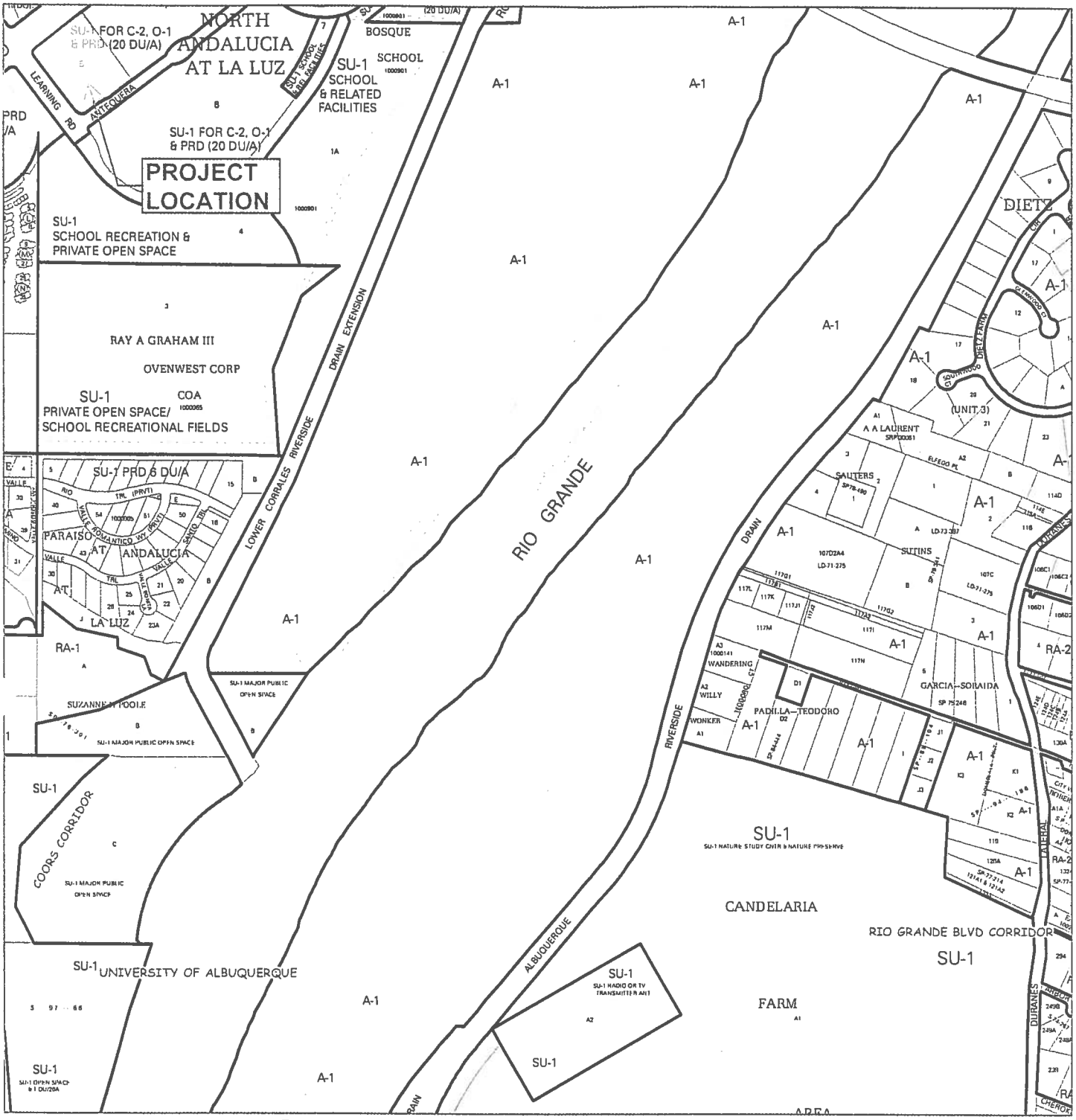
Zone Atlas Page:

E-12-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



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

Albuquerque Geographic Information System

Map amended through: 1/24/2011

Note: Grey Shading Represents Area Outside of the City Limits

Zone Atlas Page:

F-12-Z

Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
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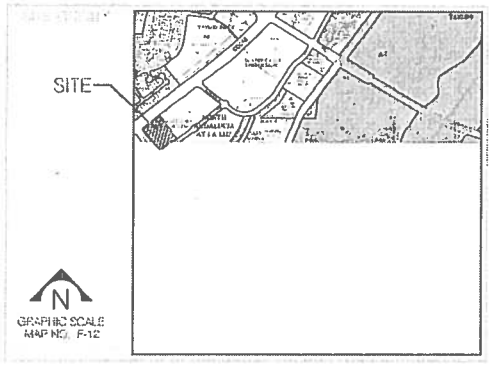
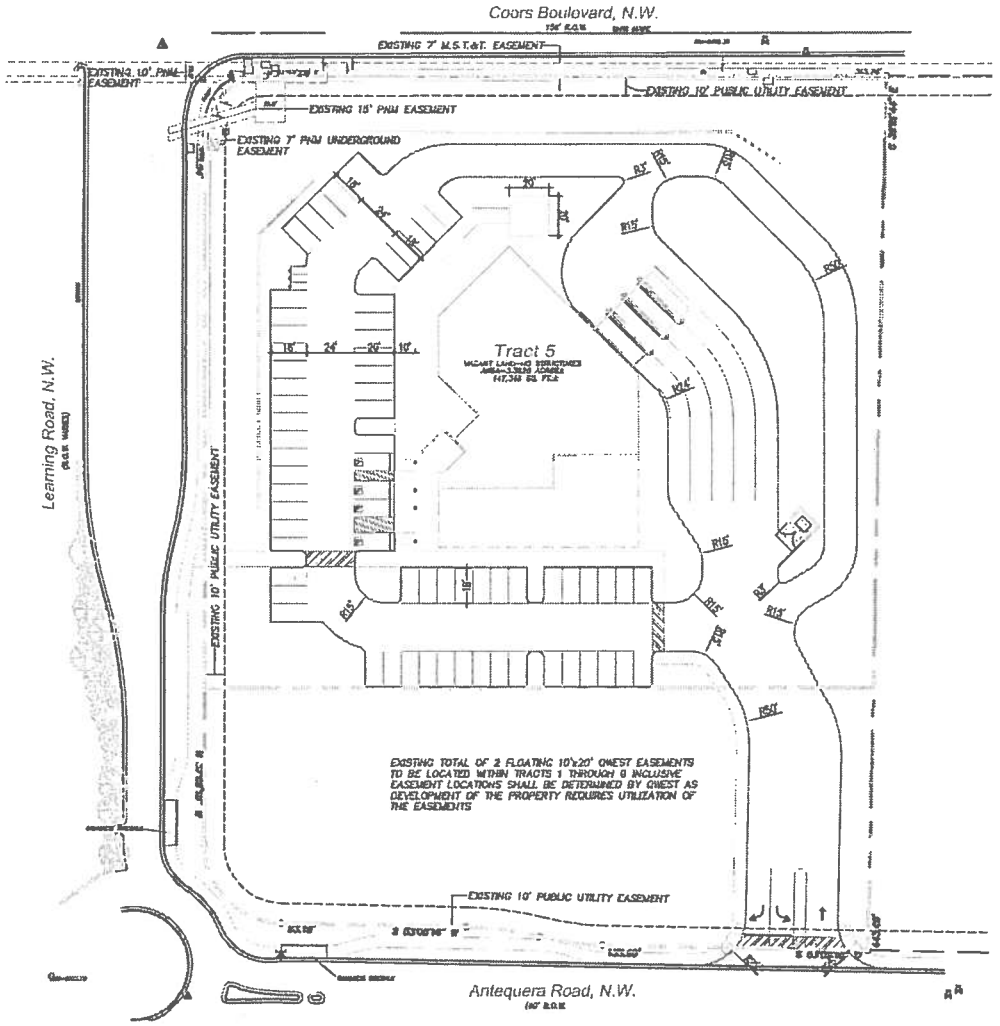
0 750 1,500 Feet





SITE DATA:

LEGAL DESCRIPTION: TRACT 5 PLAT OF NORTH ANDALUCIA AT LA LUZ.

ZONING: SU-1 FOR FOR C-2, O-1 USES & PRD (20 DU/A).

LAND USE: 1-STORY CREDIT UNION WITH DRIVE IN FACILITIES AND ATM.

BUILDING AREA: 10,000 S.F. (NET LEASABLE)

SETBACK: MINIMUM BUILDING SETBACK FROM HARPER ROAD IS 20 FEET.
MINIMUM LANDSCAPE SETBACK FROM HARPER ROAD IS 20 FEET.

BUILDING HEIGHT: MAXIMUM BUILDING HEIGHT IS 26 FEET.

SITE AREA: 3.3828 ACRES

PARKING: REQUIRED PARKING: 2,914 S.F. 1ST FLOOR @ 1 PER 250 S.F. = 10
2,914 S.F. 2ND FLOOR @ 1 PER 300 S.F. = 10
25
TOTAL PROVIDED PARKING: 62
15

HANDICAPPED REQUIRED: 2
HANDICAPPED PROVIDED: 2
MOTORCYCLE REQUIRED: 2
MOTORCYCLE PROVIDED: 4
BICYCLE REQUIRED: 2
BICYCLE PROVIDED: 2

VEHICULAR ACCESS: VEHICULAR ACCESS TO THIS SITE IS PROVIDED FROM THE EXISTING CURB CUT ON HARPER ROAD AND FROM THE ADJACENT DEL MONTE CENTER.

TRANSIT ACCESS: THERE ARE FOUR BUS STOPS ALONG WYOMING BOULEVARD THAT ARE WITHIN WALKING DISTANCE (LESS THAN ¼ OF A MILE) FROM THE SUBJECT SITE. WYOMING BOULEVARD IS AN ENHANCED TRANSIT CORRIDOR SERVING ABQ RIDE ROUTES 08 AND 31.

INTERNAL CIRCULATION: INTERNAL CIRCULATION AROUND THE PROPOSED BUILDING WILL BE DIRECTED BY TRAFFIC SIGNAGE. PEDESTRIAN CONNECTIONS TO THIS SITE EXIST ALONG HARPER ROAD, AND THERE IS AN EXISTING ASPHALT TRAIL BETWEEN THE SUBJECT SITE AND THE CHERRY HILLS LIBRARY TO THE EAST.

GENERAL NOTES:

1. ALL UTILITIES SERVING THE SITE ARE EXISTING AND WILL NOT REQUIRE ANY MODIFICATION.
2. ONE MONUMENT SIGN IS PROPOSED AT THE SOUTHWEST CORNER OF THE PROPERTY THAT IS LIMITED TO 24 S.F. PER FACE.
3. WALL SIGNS SHALL NOT EXCEED 6% OF "THE AREA OF THE FACADE TO WHICH IT IS RELATED".
4. NO OFF-PREMISE SIGNS ARE PERMITTED.
5. LIGHTING SHALL BE IN COMPLIANCE WITH SECTION 14-16-3-9, AREA LIGHTING REGULATIONS.
6. ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE SCREENED.
7. THE MECHANICAL SYSTEMS (HEATING AND COOLING) AND BUILDING ENVELOPE (WALLS, ROOF, AND WINDOWS) SHALL BE DESIGNED AND MAINTAINED TO PROMOTE THE EFFICIENT USE OF ENERGY.
8. THE SITE DEVELOPMENT PLAN FOR BUILDING PERMIT SHALL COMPLY WITH THE APPROVED SITE DEVELOPMENT PLAN FOR SUBDIVISION FOR TRACTS C1A1A THROUGH C1A3A (Z-93-95).
9. VIDEO SURVEILLANCE CAMERAS SHALL BE INSTALLED TO VIEW EXTERIOR PROPERTY AREAS AND MAIN ENTRANCES.
10. RAINWATER HARVESTING MEASURES, SUCH AS CURB CUTS AND SWALES IN THE LANDSCAPE BUFFER ON HARPER, SHALL BE PROVIDED.
11. ALL SCREENING AND VEGETATION SURROUNDING GROUND-MOUNTED TRANSFORMERS AND UTILITY PADS SHALL ALLOW 10 FEET OF CLEARANCE IN FRONT OF THE EQUIPMENT DOOR AND 5-6 FEET OF CLEARANCE ON THE REMAINING THREE SIDES FOR SAFE OPERATION, MAINTENANCE, AND REPAIR PURPOSES.
12. RECYCLING CARTS SHALL BE PROVIDED IN THE BUILDING AND PICKED UP THROUGH A PRIVATE CONTRACTOR.

PROJECT NUMBER: 1008147
Application Number:

This Plan is consistent with the specific Site Development Plan approved by the Environmental Planning Commission (EPC), dated June 10, 2010 and the Findings and Conditions in the Official Notification of Decision are satisfied.

Is an infrastructure List required? ( ) Yes (X) No If yes, then a set of approved DRC plans with a work order is required for any construction within Public Right-of-Way or for construction of public improvements.

DRB SITE DEVELOPMENT PLAN SIGNOFF APPROVAL:

Traffic Engineering, Transportation Division	Date
ABCWUA	Date
Parks and Recreation Department	Date
City Engineer	Date
Solid Waste Management	Date
DRB Chairperson, Planning Department	Date

BCI FEDERAL CREDIT UNION

SITE PLAN FOR BUILDING PERMIT

Prepared for:
xxxx
xxxx
Albuquerque, NM 87xxx

Prepared by:
Consensus Planning, Inc.
302 Eighth Street NW
Albuquerque, NM 87102

Scale: 1" = 30'

15 0 30 60

NORTH

CONSENSUS PLANNING

October, 2011

Credit Union (Learning Rd. / Coors Blvd.)

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

COMMENT	USE (ITE CODE) / DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
Future	General Office Building (710) - Less than 51,000 S	10	147	18	2	4	20
Building Size	Drive-In Bank (912)	12.37	1,833	86	67	160	160
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	Pass-by Trip Reduction (Bank)	*30%*	*(550)*	*(26)*	*(20)*	*(48)*	*(48)*
	Net New Trips to Adjacent Transportation System		**1,430**	**78**	**49**	**116**	**132**
	Net New Trips Assumed in 2007 TIS		2,894	106	90	164	137

Credit Union (Learning Rd. / Coors Blvd.)

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					
Drive-In Bank (912)	*12.37*	1,833	86	67	160	160
	1,000 S.F.					

ITE Trip Generation Equations:

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

T = *148.15* (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 = *12.35* (X) + *0*
56% Enter, *44%* 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 = *25.82* (X) + *0*
50% Enter, *50%* Exit

Comments:
Building Size

Based on ITE Trip Generation Manual - 8th Edition

Credit Union (Learning Rd. / Coors Blvd.)
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					
General Office Building (710) - Less than 51,000 S.F.	*10.00*	147	18	2	4	20
	1,000 S.F.					

ITE Trip Generation Equations:

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

T = *14.729* (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 = *2.055* (X) + *0*
88% Enter, *12%* 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 = *2.369* (X) + *0*
17% Enter, *83%* Exit

Comments:
Future

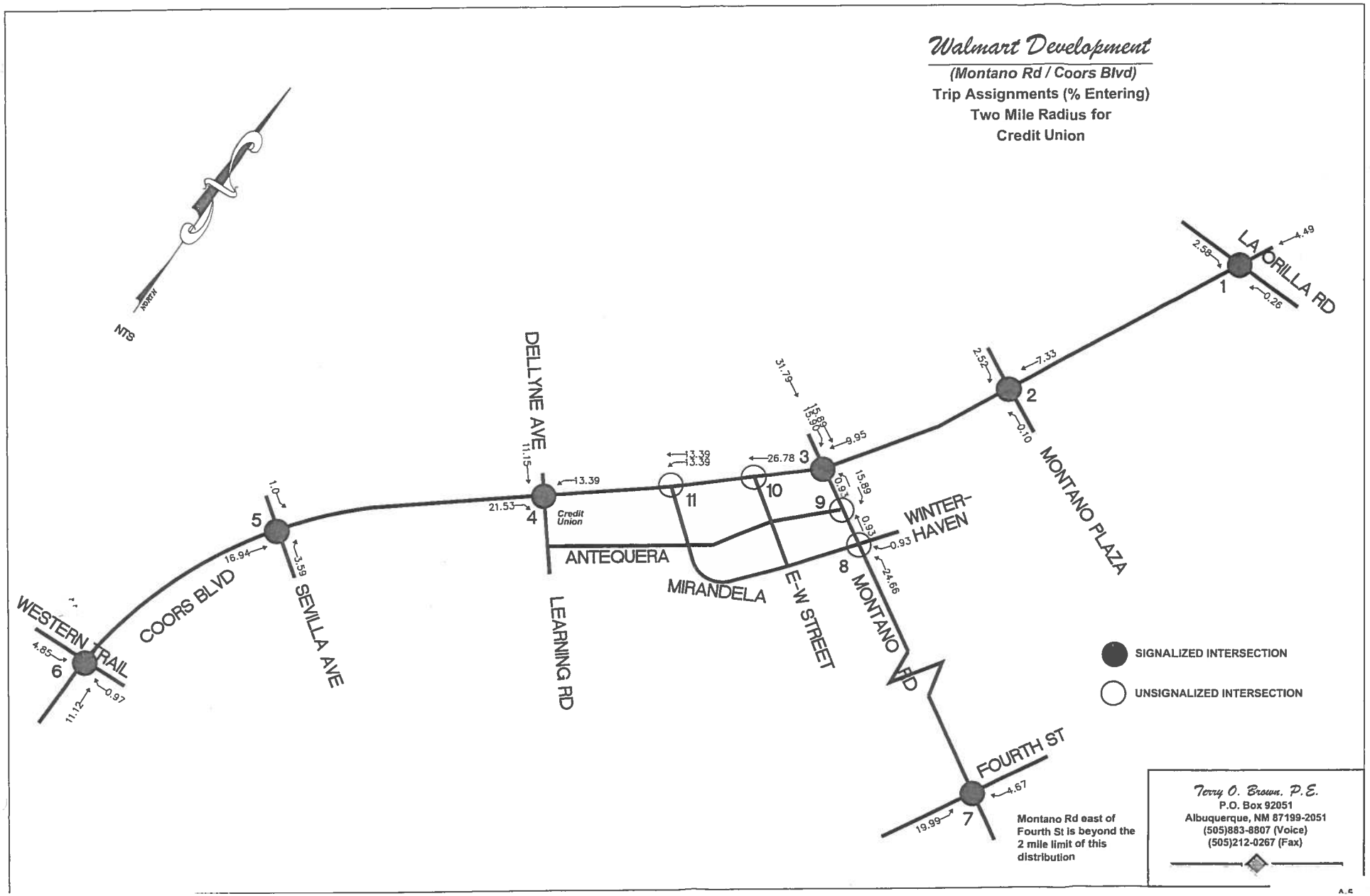
Based on ITE Trip Generation Manual - 8th Edition

A-4 b

Walmart Development

(Montano Rd / Coors Blvd)

Trip Assignments (% Entering)
Two Mile Radius for
Credit Union



Montano Rd east of Fourth St is beyond the 2 mile limit of this distribution

Terry O. Brown, P.E.
P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
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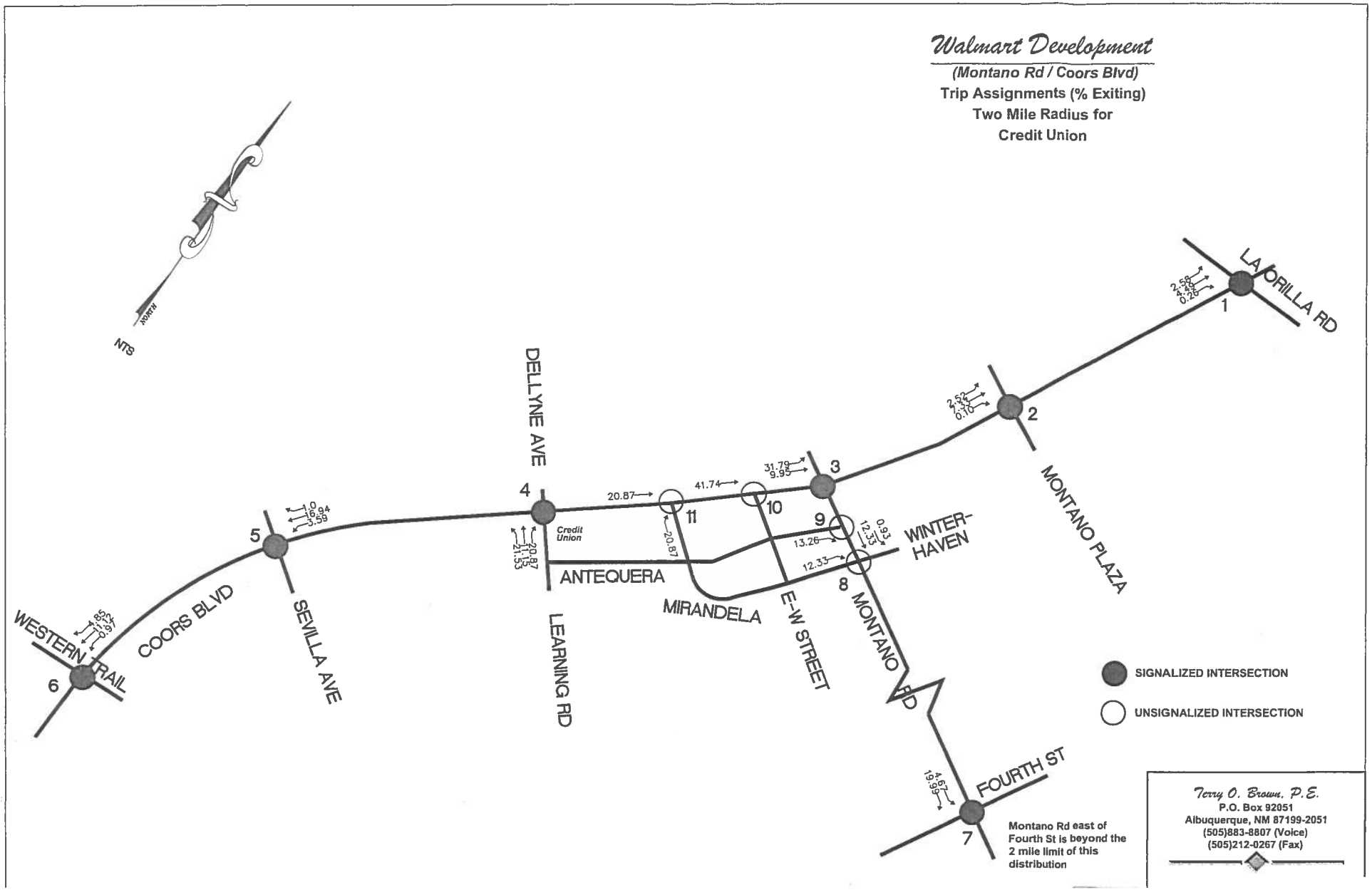
Walmart Development
(Montano Rd / Coors Blvd)
Trip Assignments (% Exiting)
Two Mile Radius for
Credit Union
NORTH
NTS
LA ORILLA RD
MONTANO PLAZA
WINTER-
HAVEN
DELLYNE AVE
Credit
Union
ANTEQUERA
MIRANDELA
E-W STREET
LEARNING RD
SEVILLA AVE
COORS BLVD
WESTERN TRAIL
MONTANO RD
FOURTH ST
1
2
3
4
5
6
7
8
9
10
11
SIGNALIZED INTERSECTION
UNSIGNALIZED INTERSECTION
Montano Rd east of
Fourth St is beyond the
2 mile limit of this
distribution
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Credit Union

(Learning Rd / Coors Blvd)

Trips Generated Volumes - AM(PM)

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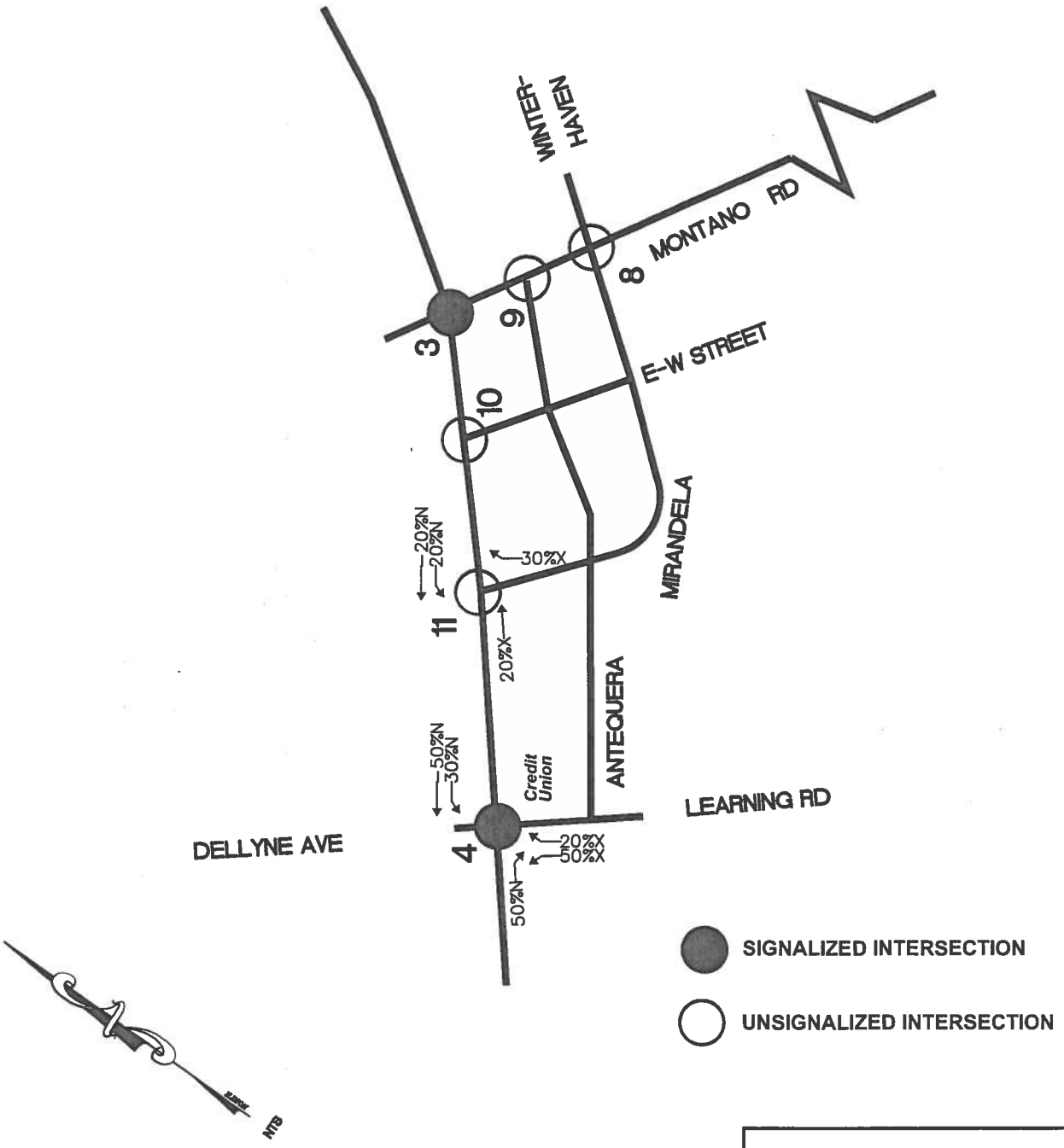
Walmart Development

(Montano Rd / Coors Blvd)

Pass-by Trips (%)

Credit Union



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Credit Union (Dellyne Ave / Coors Blvd)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2012) - 100% Development

INTERSECTION: **Summary**

Dellyne Ave / Coors Blvd

(1)

2.0% Truck

	0.70			0.62			0.84			0.89		PHF
	Eastbound (Dellyne Ave)			Westbound (Dellyne Ave)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)	231	30	282	51	8	8	59	1,615	69	40	2,077	29
2012 (NO BUILD - A.M.)	*234*	*30*	*285*	*52*	*8*	*8*	*60*	*1,634*	*70*	*40*	*2,102*	*29*
2012 (BUILD - A.M.)	***234***	***42***	***285***	***77***	***16***	***26***	***60***	***1,634***	***105***	***62***	***2,089***	***29***

	0.90			0.70			0.96			0.97		PHF
	Eastbound (Dellyne Ave)			Westbound (Dellyne Ave)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)	109	8	101	37	7	11	337	2,382	20	7	1,971	141
2012 (NO BUILD - P.M.)	*110*	*8*	*102*	*37*	*7*	*11*	*341*	*2,411*	*20*	*7*	*1,995*	*143*
2012 (BUILD - P.M.)	***110***	***20***	***102***	***88***	***21***	***47***	***341***	***2,411***	***67***	***35***	***1,971***	***143***

Mirandela Rd / Coors Blvd

(2)

2.0% Truck

	0.85			0.85			0.84			0.89		PHF
	Eastbound (Mirandela Rd)			Westbound (Mirandela Rd)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)	0	0	0	0	0	0	0	1,854	0	0	2,146	0
2012 (NO BUILD - A.M.)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1,876*	*0*	*0*	*2,172*	*0*
2012 (BUILD - A.M.)	***0***	***0***	***0***	***0***	***0***	***20***	***0***	***1,894***	***0***	***19***	***2,181***	***0***

	0.85			0.85			0.96			0.97		PHF
	Eastbound (Mirandela Rd)			Westbound (Mirandela Rd)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)	0	0	0	0	0	0	0	2,502	0	0	2,119	0
2012 (NO BUILD - P.M.)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2,532*	*0*	*0*	*2,144*	*0*
2012 (BUILD - P.M.)	***0***	***0***	***0***	***0***	***0***	***40***	***0***	***2,568***	***0***	***24***	***2,148***	***0***

Driveway / Antequera

(3)

2.0% Truck

	0.85			0.85			0.85			0.85		PHF
	Eastbound (Driveway)			Westbound (Driveway)			Northbound (Antequera)			Southbound (Antequera)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)	0	0	0	0	0	0	0	100	0	0	100	0
2012 (NO BUILD - A.M.)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*101*	*0*	*0*	*101*	*0*
2012 (BUILD - A.M.)	***38***	***0***	***51***	***0***	***0***	***0***	***69***	***101***	***0***	***0***	***101***	***61***

	0.85			0.85			0.85			0.85		PHF
	Eastbound (Driveway)			Westbound (Driveway)			Northbound (Antequera)			Southbound (Antequera)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)	0	0	0	0	0	0	0	100	0	0	100	0
2012 (NO BUILD - P.M.)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*101*	*0*	*0*	*101*	*0*
2012 (BUILD - P.M.)	***72***	***0***	***100***	***0***	***0***	***0***	***88***	***101***	***0***	***0***	***101***	***68***

Credit Union (Dellyne Ave / Coors Blvd)

Projected Turning Movements Worksheet

Dellyne Ave / Coors Blvd

INTERSECTION: E-W Street: **Dellyne Ave** (1)

N-S Street: **Coors Blvd**

Year of Existing Counts **2011**

Implementation Year **2012**

Growth Rates	1.20%			1.20%			1.20%			1.20%		
	Eastbound (Dellyne Ave)			Westbound (Dellyne Ave)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	231	30	282	51	8	8	59	1,615	69	40	2,077	29
Background Traffic Growth	3	0	3	1	0	0	1	19	1	0	25	0
Subtotal (NO BUILD - A.M.)	***234***	***30***	***285***	***52***	***8***	***8***	***60***	***1,634***	***70***	***40***	***2,102***	***29***
Percent Commercial Trips Generated(Entering)	*0.00%*	*11.15%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*21.53%*	*13.39%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*21.53%*	*11.15%*	*20.87%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	12	0	15	8	14	0	0	22	14	0	0
Subtotal AM Pk Hr. BUILD Volumes	**234**	**42**	**285**	**67**	**16**	**22**	**60**	**1,634**	**92**	**54**	**2,102**	**29**
Pass-by Trip Adjustments	*0*	*0*	*0*	*10*	*0*	*4*	*0*	*0*	*13*	*8*	*-13*	*0*
Total AM Peak Hour BUILD Volumes	**234**	**42**	**285**	**77**	**16**	**26**	**60**	**1,634**	**105**	**62**	**2,089**	**29**

	Eastbound (Dellyne Ave)			Westbound (Dellyne Ave)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	109	8	101	37	7	11	337	2,382	20	7	1,971	141
Background Traffic Growth	1	0	1	0	0	0	4	29	0	0	24	2
Subtotal (NO BUILD - P.M.)	***110***	***8***	***102***	***37***	***7***	***11***	***341***	***2,411***	***20***	***7***	***1,995***	***143***
Percent Commercial Trips Generated(Entering)	*0.00%*	*11.15%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*21.53%*	*13.39%*	*0.00%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*21.53%*	*11.15%*	*20.87%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	12	0	27	14	26	0	0	23	14	0	0
Subtotal PM Pk Hr. BUILD Volumes	**110**	**20**	**102**	**64**	**21**	**37**	**341**	**2,411**	**43**	**21**	**1,995**	**143**
Pass-by Trip Adjustments	*0*	*0*	*0*	*24*	*0*	*10*	*0*	*0*	*24*	*14*	*-24*	*0*
Total PM Peak Hour BUILD Volumes	**110**	**20**	**102**	**88**	**21**	**47**	**341**	**2,411**	**67**	**35**	**1,971**	**143**

	Entering	Exiting		
Number of Commercial Trips Generated	**104**	**69**	A.M.	100% Commercial Development
	108	**124**	P.M.	

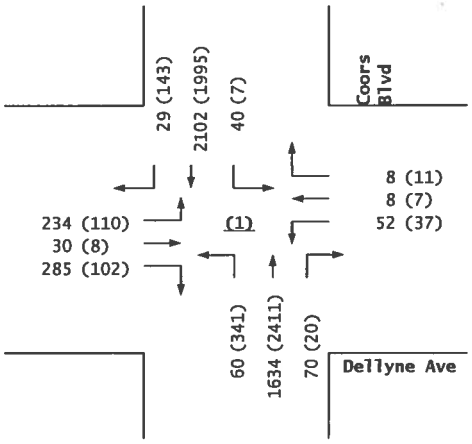
Pass-by Trip Calculations:

AM Pass-by Trips	***Eastbound (Dellyne Ave)***			***Westbound (Dellyne Ave)***			***Northbound (Coors Blvd)***			***Southbound (Coors Blvd)***		
Percent Entering	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*50.00%*	*30.00%*	*-50.00%*	*0.00%*
Volume Entering	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*13*	*8*	*-13*	*0*
Percent Exiting	*0.00%*	*0.00%*	*0.00%*	*50.00%*	*0.00%*	*20.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Volume Exiting	*0*	*0*	*0*	*10*	*0*	*4*	*0*	*0*	*0*	*0*	*0*	*0*
Net AM Passby Trips	***0***	***0***	***0***	***10***	***0***	***4***	***0***	***0***	***13***	***8***	***-13***	***0***

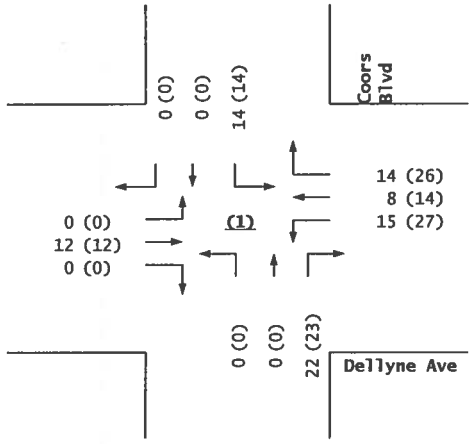
PM Pass-by Trips	***Eastbound (Dellyne Ave)***			***Westbound (Dellyne Ave)***			***Northbound (Coors Blvd)***			***Southbound (Coors Blvd)***		
Percent Entering	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*50.00%*	*30.00%*	*-50.00%*	*0.00%*
Volume Entering	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*24*	*14*	*-24*	*0*
Percent Exiting	*0.00%*	*0.00%*	*0.00%*	*50.00%*	*0.00%*	*20.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Volume Exiting	*0*	*0*	*0*	*24*	*0*	*10*	*0*	*0*	*0*	*0*	*0*	*0*
Net PM Passby Trips	***0***	***0***	***0***	***24***	***0***	***10***	***0***	***0***	***24***	***14***	***-24***	***0***

	Entering	*Exiting*	
Pass-by Trips	***26***	***20***	*AM*
	48	***48***	*PM*

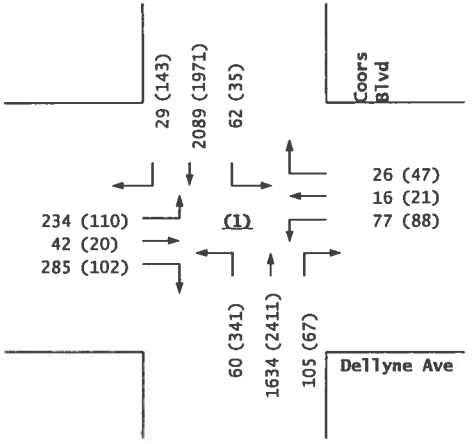
2012
NO BUILD



Trips



2012
BUILD



Dellyne Ave / Coors Blvd

Credit Union (Dellyne Ave / Coors Blvd)

Projected Turning Movements Worksheet

Mirandela Rd / Coors Blvd

INTERSECTION: E-W Street: **Mirandela Rd** (2)

N-S Street: **Coors Blvd**

Year of Existing Counts 2011

Implementation Year **2012**

Growth Rates 1.20% 1.20% 1.20% 1.20%

	Eastbound (Mirandela Rd)			Westbound (Mirandela Rd)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	1,854	0	0	2,146	0
Background Traffic Growth	0	0	0	0	0	0	0	22	0	0	26	0
Subtotal (NO BUILD - A.M.)	***0***	***0***	***0***	*0*	***0***	***0***	***0***	***1,876***	***0***	***0***	***2,172***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*13.39%*	*13.39%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.87%*	*0.00%*	*20.87%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	0	0	0	0	14	0	14	0	14	14	0
Subtotal AM Pk Hr. BUILD Volumes	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**1,890**	**0**	**14**	**2,186**	**0**
Pass-by Trip Adjustments	*0*	*0*	*0*	*0*	*0*	*6*	*0*	*4*	*0*	*5*	*-5*	*0*
Total AM Peak Hour BUILD Volumes	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**1,894**	**0**	**19**	**2,181**	**0**

	Eastbound (Mirandela Rd)			Westbound (Mirandela Rd)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	2,502	0	0	2,119	0
Background Traffic Growth	0	0	0	0	0	0	0	30	0	0	25	0
Subtotal (NO BUILD - P.M.)	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***2,532***	***0***	***0***	***2,144***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*13.39%*	*13.39%*	*0.00%*
Percent Commercial Trips Generated(Exiting)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.87%*	*0.00%*	*20.87%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	0	0	0	0	0	26	0	26	0	14	14	0
Subtotal PM Pk Hr. BUILD Volumes	**0**	**0**	**0**	**0**	**0**	**26**	**0**	**2,558**	**0**	**14**	**2,158**	**0**
Pass-by Trip Adjustments	*0*	*0*	*0*	*0*	*0*	*14*	*0*	*10*	*0*	*10*	*-10*	*0*
Total PM Peak Hour BUILD Volumes	**0**	**0**	**0**	**0**	**0**	**40**	**0**	**2,568**	**0**	**24**	**2,148**	**0**

	Entering	Exiting		
Number of Commercial Trips Generated	**104**	**69**	A.M.	100% Commercial Development
	108	**124**	P.M.	

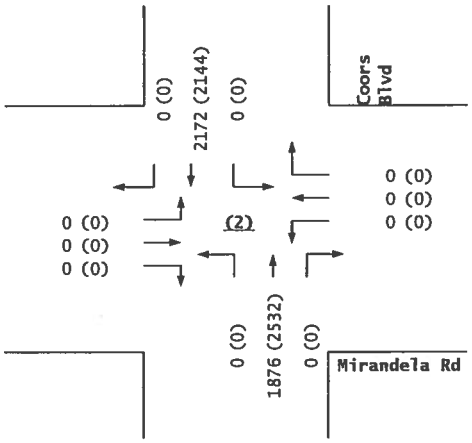
Pass-by Trip Calculations:

AM Pass-by Trips	***Eastbound (Mirandela Rd)***			***Westbound (Mirandela Rd)***			***Northbound (Coors Blvd)***			***Southbound (Coors Blvd)***		
Percent Entering	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.00%*	*-20.00%*	*0.00%*
Volume Entering	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*5*	*-5*	*0*
Percent Exiting	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*30.00%*	*0.00%*	*20.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Volume Exiting	*0*	*0*	*0*	*0*	*0*	*6*	*0*	*4*	*0*	*0*	*0*	*0*
Net AM Passby Trips	***0***	***0***	***0***	***0***	***0***	***6***	***0***	***4***	***0***	***5***	***-5***	***0***

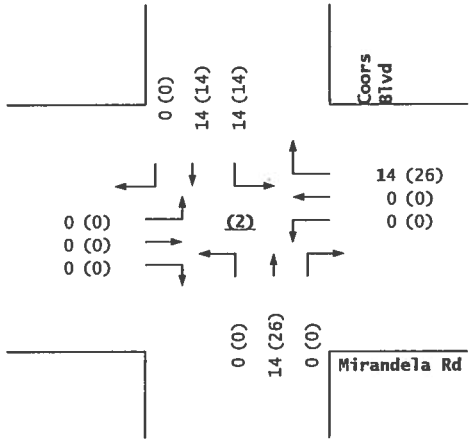
PM Pass-by Trips	***Eastbound (Mirandela Rd)***			***Westbound (Mirandela Rd)***			***Northbound (Coors Blvd)***			***Southbound (Coors Blvd)***		
Percent Entering	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.00%*	*-20.00%*	*0.00%*
Volume Entering	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*10*	*-10*	*0*
Percent Exiting	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*30.00%*	*0.00%*	*20.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Volume Exiting	*0*	*0*	*0*	*0*	*0*	*14*	*0*	*10*	*0*	*0*	*0*	*0*
Net PM Passby Trips	***0***	***0***	***0***	***0***	***0***	***14***	***0***	***10***	***0***	***10***	***-10***	***0***

	Entering	*Exiting*	
Pass-by Trips	***26***	***20***	*AM*
	48	***48***	*PM*

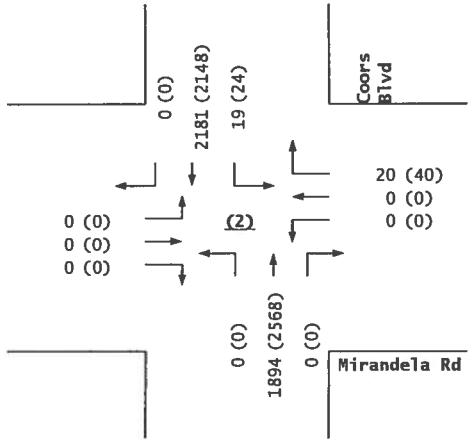
2012
NO BUILD



Trips



2012
BUILD



Mirandela Rd / Coors Blvd

Credit Union (Dellyne Ave / Coors Blvd)

Projected Turning Movements Worksheet

Driveway / Antequera

INTERSECTION: E-W Street: **Driveway** (3)

N-S Street: **Antequera**

Year of Existing Counts **2011**

Implementation Year **2012**

Growth Rates	1.20%			1.20%			1.20%			1.20%		
	Eastbound (Driveway)			Westbound (Driveway)			Northbound (Antequera)			Southbound (Antequera)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	100	0	0	100	0
Background Traffic Growth	0	0	0	0	0	0	0	1	0	0	1	0
Subtotal (NO BUILD - A.M.)	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***101***	***0***	***0***	***101***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*46.07%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*53.93%*
Percent Commercial Trips Generated(Exiting)	*46.45%*	*0.00%*	*53.55%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	32	0	37	0	0	0	48	0	0	0	0	56
Subtotal AM Pk Hr. BUILD Volumes	**32**	**0**	**37**	**0**	**0**	**0**	**48**	**101**	**0**	**0**	**101**	**56**
Pass-by Trip Adjustments	*6*	*0*	*14*	*0*	*0*	*0*	*21*	*0*	*0*	*0*	*0*	*5*
Total AM Peak Hour BUILD Volumes	**38**	**0**	**51**	**0**	**0**	**0**	**69**	**101**	**0**	**0**	**101**	**61**

	Eastbound (Driveway)			Westbound (Driveway)			Northbound (Antequera)			Southbound (Antequera)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	100	0	0	100	0
Background Traffic Growth	0	0	0	0	0	0	0	1	0	0	1	0
Subtotal (NO BUILD - P.M.)	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***101***	***0***	***0***	***101***	***0***
Percent Commercial Trips Generated(Entering)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*46.07%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*53.93%*
Percent Commercial Trips Generated(Exiting)	*46.45%*	*0.00%*	*53.55%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Total Trips Generated	58	0	66	0	0	0	50	0	0	0	0	58
Subtotal PM Pk Hr. BUILD Volumes	**58**	**0**	**66**	**0**	**0**	**0**	**50**	**101**	**0**	**0**	**101**	**58**
Pass-by Trip Adjustments	*14*	*0*	*34*	*0*	*0*	*0*	*38*	*0*	*0*	*0*	*0*	*10*
Total PM Peak Hour BUILD Volumes	**72**	**0**	**100**	**0**	**0**	**0**	**88**	**101**	**0**	**0**	**101**	**68**

	Entering	Exiting		
Number of Commercial Trips Generated	**104**	**69**	A.M.	100% Commercial Development
	108	**124**	P.M.	

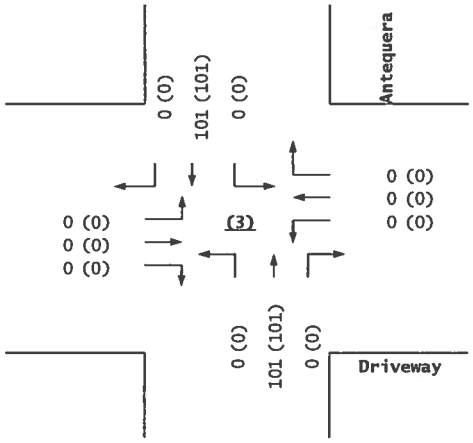
Pass-by Trip Calculations:

AM Pass-by Trips	*Eastbound (Driveway)*			*Westbound (Driveway)*			*Northbound (Antequera)*			*Southbound (Antequera)*		
Percent Entering	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*80.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.00%*
Volume Entering	*0*	*0*	*0*	*0*	*0*	*0*	*21*	*0*	*0*	*0*	*0*	*5*
Percent Exiting	*30.00%*	*0.00%*	*70.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Volume Exiting	*6*	*0*	*14*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net AM Passby Trips	***6***	***0***	***14***	***0***	***0***	***0***	***21***	***0***	***0***	***0***	***0***	***5***

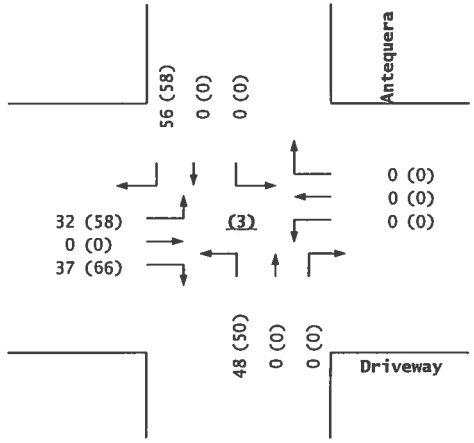
PM Pass-by Trips	*Eastbound (Driveway)*			*Westbound (Driveway)*			*Northbound (Antequera)*			*Southbound (Antequera)*		
Percent Entering	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*80.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*20.00%*
Volume Entering	*0*	*0*	*0*	*0*	*0*	*0*	*38*	*0*	*0*	*0*	*0*	*10*
Percent Exiting	*30.00%*	*0.00%*	*70.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Volume Exiting	*14*	*0*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net PM Passby Trips	***14***	***0***	***34***	***0***	***0***	***0***	***38***	***0***	***0***	***0***	***0***	***10***

	Entering	*Exiting*	
Pass-by Trips	***26***	***20***	*AM*
	48	***48***	*PM*

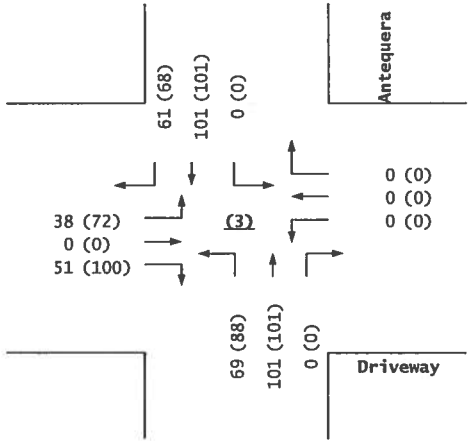
2012
NO BUILD



Trips



2012
BUILD



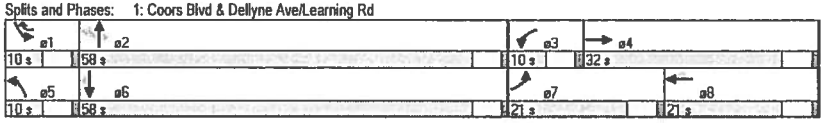
Driveway / Antequera

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	234	30	52	8	8	60	1634	70	40	2102	29
Turn Type	Prot	NA	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	8	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	32.0	10.0	21.0	10.0	10.0	58.0	58.0	10.0	58.0	58.0
Total Split (%)	19.1%	29.1%	9.1%	19.1%	9.1%	9.1%	52.7%	52.7%	9.1%	52.7%	52.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	C-Max	C-Max	Min	C-Max	C-Max
Act Effct Green (s)	14.8	26.7	5.0	16.9	27.0	58.4	53.2	53.2	5.1	53.2	53.2
Actuated g/C Ratio	0.13	0.24	0.05	0.15	0.25	0.53	0.48	0.48	0.05	0.48	0.48
v/c Ratio	0.73	0.97	0.47	0.04	0.03	0.47	0.79	0.10	0.28	0.95	0.04
Control Delay	55.2	67.9	61.6	40.9	16.4	22.1	26.7	4.7	55.4	37.3	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	67.9	61.6	40.9	16.4	22.1	26.7	4.7	55.4	37.3	6.1
LOS	E	E	E	D	B	C	C	A	E	D	A
Approach Delay		62.5		54.0			25.7			37.2	
Approach LOS		E		D			C			D	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 36.7 — Intersection LOS: D
Intersection Capacity Utilization 79.5% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & Dellyne Ave/Learning Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	234	30	285	52	8	8	60	1634	70	40	2102	29
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	1	0	2	1	1	1	3	1	2	3	1
Lane Assignment												
Capacity, veh/h	463	37	352	156	286	316	156	2462	767	159	2457	765
Proportion Arriving On Green	0.13	0.24	0.24	0.05	0.15	0.15	0.05	0.48	0.48	0.05	0.48	0.48
Movement Delay, s/veh	51.2	0.0	136.8	53.5	39.7	35.6	27.4	26.4	15.8	51.7	37.0	15.1
Movement LOS	D		F	D	D	D	C	C	B	D	D	B
Approach Volume, veh/h		784			97			2100			2412	
Approach Delay, s/veh		100.3			49.8			26.0			36.9	
Approach LOS		F			D			C			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Case No	2.0	3.0	2.0	4.0	1.1	3.0	2.0	3.0
Phase Duration (G+Y+Rc), s	10.10	58.30	10.00	31.70	10.20	58.20	19.80	21.90
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max. Allowable Headway (MAH), s	3.81	5.21	3.81	5.50	3.81	5.21	3.81	5.50
Maximum Green Setting (Gmax), s	5.10	53.20	5.00	26.70	5.20	53.20	14.80	16.90
Max. Queue Clearance Time (g_c+I1), s	3.37	37.19	4.32	28.70	4.16	50.33	12.25	2.64
Green Extension Time (g_e), s	0.01	15.84	0.01	0.00	0.01	2.86	0.32	2.77
Probability of Phase Call (p_c)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Probability of Max Out (p_x)	1.000	0.989	1.000	1.000	1.000	1.000	1.000	0.124

Left-Turn Movement Data

Assigned Movement	1		3		5		7	
Mvmt. Sat Flow, veh/h	3441.64		3441.64		1774.04		3441.64	

Through Movement Data

Assigned Movement		2		4		6		8
Mvmt. Sat Flow, veh/h		5085.29		152.98		5085.29		1862.75

Right-Turn Movement Data

Assigned Movement		12		14		16		18
Mvmt. Sat Flow, veh/h		1583.33		1453.30		1583.33		1583.33

Left Lane Group Data

Assigned Movement	1	0	3	0	5	0	7	0
Lane Assignment	L (Prot)		L (Prot)		L (Pr/Pm)		L (Prot)	
Lanes in Group	2	0	2	0	1	0	2	0
Group Volume (v), veh/h	44.4	0.0	74.3	0.0	71.4	0.0	334.3	0.0
Group Sat. Flow (s), veh/h/ln	1720.8	0.0	1720.8	0.0	1774.0	0.0	1720.8	0.0
Queue Serve Time (g_s), s	1.4	0.0	2.3	0.0	2.2	0.0	10.3	0.0
Cycle Queue Clear Time (g_c), s	1.4	0.0	2.3	0.0	2.2	0.0	10.3	0.0

Perm LT Sat Flow Rate (s_l), veh/h/ln	0.0	0.0	0.0	0.0	154.0	0.0	0.0	0.0
Shared LT Sat Flow (s_sh), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g_p), s	0.0	0.0	0.0	0.0	53.3	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0
Perm LT Que Serve Time (g_ps), s	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P_L)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	159.4	0.0	156.3	0.0	156.0	0.0	462.6	0.0
Volume-to-Capacity Ratio (X)	0.279	0.000	0.475	0.000	0.458	0.000	0.723	0.000
Available Capacity (c_a), veh/h	159.4	0.0	156.3	0.0	156.0	0.0	462.6	0.0
Upstream Filter Factor (I)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	50.7	0.0	51.3	0.0	25.3	0.0	45.7	0.0
Incremental Delay (d2), s/veh	0.9	0.0	2.2	0.0	2.1	0.0	5.5	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	51.7	0.0	53.5	0.0	27.4	0.0	51.2	0.0
First-Term Queue (Q1), veh/ln	0.6	0.0	1.0	0.0	1.1	0.0	4.4	0.0
Second-Term Queue (Q2), veh/ln	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/ln	0.6	0.0	1.0	0.0	1.1	0.0	4.7	0.0
Percentile Storage Ratio (RQ%)	0.06	0.00	0.13	0.00	0.10	0.00	0.96	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment		T				T		T
Lanes in Group	0	3	0	0	0	3	0	1
Group Volume (v), veh/h	0.0	1945.2	0.0	0.0	0.0	2335.6	0.0	11.4
Group Sat. Flow (s), veh/h/ln	0.0	1695.1	0.0	0.0	0.0	1695.1	0.0	1862.7
Queue Serve Time (g_s), s	0.0	35.2	0.0	0.0	0.0	48.3	0.0	0.6
Cycle Queue Clear Time (g_c), s	0.0	35.2	0.0	0.0	0.0	48.3	0.0	0.6
Lane Group Capacity (c), veh/h	0.0	2461.8	0.0	0.0	0.0	2457.2	0.0	285.9
Volume-to-Capacity Ratio (X)	0.000	0.790	0.000	0.000	0.000	0.950	0.000	0.040
Available Capacity (c_a), veh/h	0.0	2461.8	0.0	0.0	0.0	2457.2	0.0	285.9
Upstream Filter Factor (I)	0.000	1.000	0.000	0.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	23.7	0.0	0.0	0.0	27.2	0.0	39.7
Incremental Delay (d2), s/veh	0.0	2.7	0.0	0.0	0.0	9.8	0.0	0.1
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	26.4	0.0	0.0	0.0	37.0	0.0	39.7
First-Term Queue (Q1), veh/ln	0.0	13.5	0.0	0.0	0.0	18.6	0.0	0.3
Second-Term Queue (Q2), veh/ln	0.0	0.6	0.0	0.0	0.0	2.2	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	14.1	0.0	0.0	0.0	20.8	0.0	0.3
Percentile Storage Ratio (RQ%)	0.00	0.29	0.00	0.00	0.00	0.48	0.00	0.01

HCM 2010 Signalized Intersection Capacity Analysis
1: Coors Blvd & Dellyne Ave/Learning Rd
Terry O. Brown, PE
10/26/2011 - Synchro 8

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment		R		T+R		R		R
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (v), veh/h	0.0	83.3	0.0	450.0	0.0	32.2	0.0	11.4
Group Sat. Flow (s), veh/h/ln	0.0	1583.3	0.0	1606.3	0.0	1583.3	0.0	1583.3
Queue Serve Time (g_s), s	0.0	3.2	0.0	26.7	0.0	1.2	0.0	0.6
Cycle Queue Clear Time (g_c), s	0.0	3.2	0.0	26.7	0.0	1.2	0.0	0.6
Prot RT Sat Flow Rate (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1583.3
Prot RT Eff. Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1
Proportion RT Outside Lane (P_R)	0.000	1.000	0.000	0.905	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	766.5	0.0	389.5	0.0	765.1	0.0	316.4
Volume-to-Capacity Ratio (X)	0.000	0.109	0.000	1.155	0.000	0.042	0.000	0.036
Available Capacity (c_a), veh/h	0.0	766.5	0.0	389.5	0.0	765.1	0.0	316.4
Upstream Filter Factor (I)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	15.5	0.0	41.7	0.0	15.0	0.0	35.5
Incremental Delay (d2), s/veh	0.0	0.3	0.0	95.1	0.0	0.1	0.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	15.8	0.0	136.8	0.0	15.1	0.0	35.6
First-Term Queue (Q1), veh/ln	0.0	1.1	0.0	10.4	0.0	0.4	0.0	0.2
Second-Term Queue (Q2), veh/ln	0.0	0.1	0.0	10.3	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	1.2	0.0	20.7	0.0	0.4	0.0	0.3
Percentile Storage Ratio (RQ%)	0.00	0.13	0.00	1.99	0.00	0.04	0.00	0.03
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	15.1	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Intersection Summary								
HCM Average Control Delay		42.1						
HCM Level of Service		D						

2012 AM Peak NOBUILD Conditions
2012 AM Peak NOBUILD Conditions
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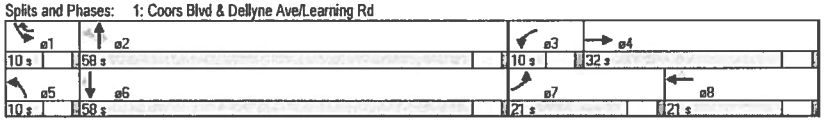
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	234	42	77	16	26	60	1634	105	62	2089	29
Turn Type	Prot	NA	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	21.0	32.0	10.0	21.0	10.0	10.0	58.0	58.0	10.0	58.0	58.0
Total Split (%)	19.1%	29.1%	9.1%	19.1%	9.1%	9.1%	52.7%	52.7%	9.1%	52.7%	52.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	C-Max	C-Max	Min	C-Max	C-Max
Act Effct Green (s)	14.8	27.0	5.0	17.2	27.2	58.0	53.0	53.0	5.0	53.0	53.0
Actuated g/C Ratio	0.13	0.25	0.05	0.16	0.25	0.53	0.48	0.48	0.05	0.48	0.48
v/c Ratio	0.73	1.00	0.71	0.08	0.09	0.48	0.79	0.15	0.44	0.95	0.04
Control Delay	55.2	76.6	75.8	41.5	25.3	22.6	27.0	4.3	60.4	37.1	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	76.6	75.8	41.5	25.3	22.6	27.0	4.3	60.4	37.1	6.1
LOS	E	E	E	D	C	C	C	A	E	D	A
Approach Delay		67.7		60.2			25.5			37.3	
Approach LOS		E		E			C			D	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 37.8 — Intersection LOS: D
Intersection Capacity Utilization 85.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & Dellyne Ave/Learning Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	234	42	285	77	16	26	60	1634	105	62	2089	29
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	1	0	2	1	1	1	3	1	2	3	1
Lane Assignment												
Capacity, veh/h	463	51	345	156	291	320	153	2450	763	156	2450	763
Proportion Arriving On Green	0.13	0.25	0.25	0.05	0.16	0.16	0.05	0.48	0.48	0.05	0.48	0.48
Movement Delay, s/veh	51.1	0.0	145.2	65.0	39.7	36.0	27.5	26.7	16.5	53.1	36.6	15.2
Movement LOS	D		F	E	D	D	C	C	B	D	D	B
Approach Volume, veh/h		801			170			2142			2422	
Approach Delay, s/veh		106.0			55.3			26.1			36.8	
Approach LOS		F			E			C			D	
Timer:		1	2	3	4	5	6	7	8			
Assigned Phase		1	2	3	4	5	6	7	8			
Case No		2.0	3.0	2.0	4.0	1.1	3.0	2.0	3.0			
Phase Duration (G+Y+Rc), s		10.00	58.00	10.00	32.00	10.00	58.00	19.80	22.20			
Change Period (Y+Rc), s		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00			
Max. Allowable Headway (MAH), s		3.81	5.20	3.81	5.42	3.81	5.20	3.81	5.42			
Maximum Green Setting (Gmax), s		5.00	53.00	5.00	27.00	5.00	53.00	14.80	17.20			
Max. Queue Clearance Time (g_c+I1), s		4.14	37.31	5.47	29.00	4.18	49.86	12.24	4.11			
Green Extension Time (g_e), s		0.01	15.52	0.00	0.00	0.01	3.13	0.32	2.90			
Probability of Phase Call (p_c)		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Probability of Max Out (p_x)		1.000	0.989	1.000	1.000	1.000	1.000	1.000	0.183			
Left-Turn Movement Data												
Assigned Movement		1		3		5		7				
Mvmt. Sat Flow, veh/h		3441.64		3441.64		1774.04		3441.64				
Through Movement Data												
Assigned Movement			2		4		6		8			
Mvmt. Sat Flow, veh/h			5085.29		207.36		5085.29		1862.75			
Right-Turn Movement Data												
Assigned Movement			12		14		16		18			
Mvmt. Sat Flow, veh/h			1583.33		1407.08		1583.33		1583.33			
Left Lane Group Data												
Assigned Movement		1	0	3	0	5	0	7	0			
Lane Assignment		L (Prot)		L (Prot)		L (Pr/Pm)		L (Prot)				
Lanes in Group		2	0	2	0	1	0	2	0			
Group Volume (v), veh/h		68.9	0.0	110.0	0.0	71.4	0.0	334.3	0.0			
Group Sat. Flow (s), veh/h/ln		1720.8	0.0	1720.8	0.0	1774.0	0.0	1720.8	0.0			
Queue Serve Time (g_s), s		2.1	0.0	3.5	0.0	2.2	0.0	10.2	0.0			
Cycle Queue Clear Time (g_c), s		2.1	0.0	3.5	0.0	2.2	0.0	10.2	0.0			

Perm LT Sat Flow Rate (s_l), veh/h/ln	0.0	0.0	0.0	0.0	156.2	0.0	0.0	0.0
Shared LT Sat Flow (s_sh), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g_p), s	0.0	0.0	0.0	0.0	53.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0
Perm LT Que Serve Time (g_ps), s	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P_L)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	156.4	0.0	156.4	0.0	153.4	0.0	463.1	0.0
Volume-to-Capacity Ratio (X)	0.440	0.000	0.703	0.000	0.466	0.000	0.722	0.000
Available Capacity (c_a), veh/h	156.4	0.0	156.4	0.0	153.4	0.0	463.1	0.0
Upstream Filter Factor (I)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	51.1	0.0	51.8	0.0	25.3	0.0	45.6	0.0
Incremental Delay (d2), s/veh	1.9	0.0	13.3	0.0	2.2	0.0	5.5	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	53.1	0.0	65.0	0.0	27.5	0.0	51.1	0.0
First-Term Queue (Q1), veh/ln	0.9	0.0	1.5	0.0	1.1	0.0	4.4	0.0
Second-Term Queue (Q2), veh/ln	0.0	0.0	0.3	0.0	0.1	0.0	0.4	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/ln	1.0	0.0	1.8	0.0	1.1	0.0	4.7	0.0
Percentile Storage Ratio (RQ%)	0.09	0.00	0.23	0.00	0.10	0.00	0.96	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment		T				T		T
Lanes in Group	0	3	0	0	0	3	0	1
Group Volume (v), veh/h	0.0	1945.2	0.0	0.0	0.0	2321.1	0.0	22.9
Group Sat. Flow (s), veh/h/ln	0.0	1695.1	0.0	0.0	0.0	1695.1	0.0	1862.7
Queue Serve Time (g_s), s	0.0	35.3	0.0	0.0	0.0	47.9	0.0	1.2
Cycle Queue Clear Time (g_c), s	0.0	35.3	0.0	0.0	0.0	47.9	0.0	1.2
Lane Group Capacity (c), veh/h	0.0	2450.2	0.0	0.0	0.0	2450.2	0.0	291.3
Volume-to-Capacity Ratio (X)	0.000	0.794	0.000	0.000	0.000	0.947	0.000	0.078
Available Capacity (c_a), veh/h	0.0	2450.2	0.0	0.0	0.0	2450.2	0.0	291.3
Upstream Filter Factor (I)	0.000	1.000	0.000	0.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	23.9	0.0	0.0	0.0	27.2	0.0	39.6
Incremental Delay (d2), s/veh	0.0	2.7	0.0	0.0	0.0	9.4	0.0	0.1
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	26.7	0.0	0.0	0.0	36.6	0.0	39.7
First-Term Queue (Q1), veh/ln	0.0	13.6	0.0	0.0	0.0	18.4	0.0	0.5
Second-Term Queue (Q2), veh/ln	0.0	0.6	0.0	0.0	0.0	2.1	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	14.2	0.0	0.0	0.0	20.6	0.0	0.5
Percentile Storage Ratio (RQ%)	0.00	0.29	0.00	0.00	0.00	0.47	0.00	0.03

HCM 2010 Signalized Intersection Capacity Analysis
1: Coors Blvd & Dellyne Ave/Learning Rd

Terry O. Brown, PE
10/26/2011 - Synchro 8

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment		R		T+R		R		R
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (v), veh/h	0.0	125.0	0.0	467.1	0.0	32.2	0.0	37.1
Group Sat. Flow (s), veh/h/ln	0.0	1583.3	0.0	1614.4	0.0	1583.3	0.0	1583.3
Queue Serve Time (g_s), s	0.0	4.9	0.0	27.0	0.0	1.2	0.0	2.1
Cycle Queue Clear Time (g_c), s	0.0	4.9	0.0	27.0	0.0	1.2	0.0	2.1
Prot RT Sat Flow Rate (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1583.3
Prot RT Eff. Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Proportion RT Outside Lane (P_R)	0.000	1.000	0.000	0.872	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	762.9	0.0	396.3	0.0	762.9	0.0	319.5
Volume-to-Capacity Ratio (X)	0.000	0.164	0.000	1.179	0.000	0.042	0.000	0.116
Available Capacity (c_a), veh/h	0.0	762.9	0.0	396.3	0.0	762.9	0.0	319.5
Upstream Filter Factor (I)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	16.0	0.0	41.5	0.0	15.1	0.0	35.9
Incremental Delay (d2), s/veh	0.0	0.5	0.0	103.7	0.0	0.1	0.0	0.2
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	16.5	0.0	145.2	0.0	15.2	0.0	36.0
First-Term Queue (Q1), veh/ln	0.0	1.8	0.0	10.6	0.0	0.4	0.0	0.8
Second-Term Queue (Q2), veh/ln	0.0	0.1	0.0	11.4	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	1.9	0.0	22.0	0.0	0.4	0.0	0.8
Percentile Storage Ratio (RQ%)	0.00	0.21	0.00	2.12	0.00	0.04	0.00	0.11
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	17.7	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM Average Control Delay	43.2
HCM Level of Service	D

2012 AM Peak BUILD Conditions

Existing Geometry
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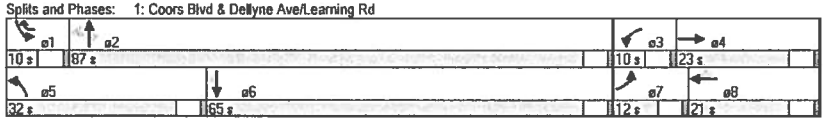
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	110	8	37	7	11	341	2411	20	7	1995	143
Turn Type	Prot	NA	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	12.0	23.0	10.0	21.0	10.0	32.0	87.0	87.0	10.0	65.0	65.0
Total Split (%)	9.2%	17.7%	7.7%	16.2%	7.7%	24.6%	66.9%	66.9%	7.7%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Max	Min	Max	Max
Act Effct Green (s)	7.0	8.8	5.0	6.8	16.8	92.0	82.0	82.0	5.0	63.6	63.6
Actuated g/C Ratio	0.06	0.07	0.04	0.06	0.14	0.76	0.68	0.68	0.04	0.53	0.53
v/c Ratio	0.61	0.55	0.37	0.10	0.07	0.88	0.73	0.02	0.05	0.77	0.16
Control Delay	69.7	21.3	64.6	55.6	33.2	57.2	14.1	3.5	57.3	26.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	21.3	64.6	55.6	33.2	57.2	14.1	3.5	57.3	26.1	4.9
LOS	E	C	E	E	C	E	B	A	E	C	A
Approach Delay		45.5		57.1			19.3			24.8	
Approach LOS		D		E			B			C	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 120.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 23.3 — Intersection LOS: C
Intersection Capacity Utilization 79.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & Dellyne Ave/Learning Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	8	102	37	7	11	341	2411	20	7	1995	143
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	1	0	2	1	1	1	3	1	2	3	1
Lane Assignment												
Capacity, veh/h	176	11	140	139	155	196	387	3373	1050	139	2776	864
Proportion Arriving On Green	0.05	0.09	0.09	0.04	0.08	0.08	0.16	0.66	0.66	0.04	0.55	0.55
Movement Delay, s/veh	66.6	0.0	66.5	59.5	52.4	48.1	59.7	15.4	7.1	57.2	23.2	14.5
Movement LOS	E		E	E	D	D	E	B	A	E	C	B
Approach Volume, veh/h		244			79			2887			2211	
Approach Delay, s/veh		66.6			56.3			20.8			22.8	
Approach LOS		E			E			C			C	
Timer:		1	2	3	4	6	6	7	8			
Assigned Phase		1	2	3	4	5	6	7	8			
Case No		2.0	3.0	2.0	4.0	1.1	3.0	2.0	3.0			
Phase Duration (G+Y+Rc), s		10.00	87.00	10.00	16.62	24.52	72.48	11.34	15.28			
Change Period (Y+Rc), s		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00			
Max. Allowable Headway (MAH), s		3.81	5.20	3.81	5.37	3.81	5.20	3.81	5.37			
Maximum Green Setting (Gmax), s		5.00	82.00	5.00	18.00	27.00	60.00	7.00	16.00			
Max. Queue Clearance Time (g_c+I1), s		2.25	42.61	3.85	11.26	18.79	40.13	6.32	3.09			
Green Extension Time (g_e), s		0.00	38.81	0.01	0.37	0.73	19.72	0.02	0.58			
Probability of Phase Call (p_c)		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Probability of Max Out (p_x)		1.000	0.980	1.000	0.458	0.087	0.991	1.000	0.014			
Left-Turn Movement Data												
Assigned Movement		1		3		5		7				
Mvmt. Sat Flow, veh/h		3441.64		3441.64		1774.04		3441.64				
Through Movement Data												
Assigned Movement			2		4		6		8			
Mvmt. Sat Flow, veh/h			5085.29		116.42		5085.29		1862.75			
Right-Turn Movement Data												
Assigned Movement			12		14		16		18			
Mvmt. Sat Flow, veh/h			1583.33		1484.37		1583.33		1583.33			
Left Lane Group Data												
Assigned Movement		1	0	3	0	5	0	7	0			
Lane Assignment		L (Prot)		L (Prot)		L (Pr/Pm)		L (Prot)				
Lanes in Group		2	0	2	0	1	0	2	0			
Group Volume (v), veh/h		7.2	0.0	52.9	0.0	355.2	0.0	122.2	0.0			
Group Sat. Flow (s), veh/h/ln		1720.8	0.0	1720.8	0.0	1774.0	0.0	1720.8	0.0			
Queue Serve Time (g_s), s		0.2	0.0	1.9	0.0	16.8	0.0	4.3	0.0			
Cycle Queue Clear Time (g_c), s		0.2	0.0	1.9	0.0	16.8	0.0	4.3	0.0			

Perm LT Sat Flow Rate (s_l), veh/h/ln	0.0	0.0	0.0	0.0	202.8	0.0	0.0	0.0
Shared LT Sat Flow (s_sh), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g_p), s	0.0	0.0	0.0	0.0	84.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	29.4	0.0	0.0	0.0
Perm LT Que Serve Time (g_ps), s	0.0	0.0	0.0	0.0	29.4	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P_L)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	139.2	0.0	139.2	0.0	386.5	0.0	176.5	0.0
Volume-to-Capacity Ratio (X)	0.052	0.000	0.380	0.000	0.919	0.000	0.692	0.000
Available Capacity (c_a), veh/h	139.2	0.0	139.2	0.0	493.9	0.0	194.9	0.0
Upstream Filter Factor (I)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	57.0	0.0	57.8	0.0	40.4	0.0	57.7	0.0
Incremental Delay (d2), s/veh	0.2	0.0	1.7	0.0	19.3	0.0	9.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	57.2	0.0	59.5	0.0	59.7	0.0	66.6	0.0
First-Term Queue (Q1), veh/ln	0.1	0.0	0.8	0.0	8.3	0.0	1.9	0.0
Second-Term Queue (Q2), veh/ln	0.0	0.0	0.0	0.0	2.1	0.0	0.2	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/ln	0.1	0.0	0.8	0.0	10.4	0.0	2.1	0.0
Percentile Storage Ratio (RQ%)	0.01	0.00	0.11	0.00	0.88	0.00	0.43	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment		T				T		T
Lanes in Group	0	3	0	0	0	3	0	1
Group Volume (v), veh/h	0.0	2511.5	0.0	0.0	0.0	2056.7	0.0	10.0
Group Sat. Flow (s), veh/h/ln	0.0	1895.1	0.0	0.0	0.0	1695.1	0.0	1862.7
Queue Serve Time (g_s), s	0.0	40.6	0.0	0.0	0.0	38.1	0.0	0.6
Cycle Queue Clear Time (g_c), s	0.0	40.6	0.0	0.0	0.0	38.1	0.0	0.6
Lane Group Capacity (c), veh/h	0.0	3373.1	0.0	0.0	0.0	2775.8	0.0	155.0
Volume-to-Capacity Ratio (X)	0.000	0.745	0.000	0.000	0.000	0.741	0.000	0.065
Available Capacity (c_a), veh/h	0.0	3373.1	0.0	0.0	0.0	2775.8	0.0	241.1
Upstream Filter Factor (I)	0.000	1.000	0.000	0.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	13.8	0.0	0.0	0.0	21.4	0.0	52.2
Incremental Delay (d2), s/veh	0.0	1.5	0.0	0.0	0.0	1.8	0.0	0.2
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	15.4	0.0	0.0	0.0	23.2	0.0	52.4
First-Term Queue (Q1), veh/ln	0.0	14.4	0.0	0.0	0.0	14.6	0.0	0.3
Second-Term Queue (Q2), veh/ln	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	14.8	0.0	0.0	0.0	15.1	0.0	0.3
Percentile Storage Ratio (RQ%)	0.00	0.30	0.00	0.00	0.00	0.34	0.00	0.02

HCM 2010 Signalized Intersection Capacity Analysis
1: Coors Blvd & Dellyne Ave/Learning Rd
Terry O. Brown, PE
10/26/2011 - Synchro 8

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment		R		T+R		R		R
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (v), veh/h	0.0	20.8	0.0	122.2	0.0	147.4	0.0	15.7
Group Sat. Flow (s), veh/h/ln	0.0	1583.3	0.0	1600.8	0.0	1583.3	0.0	1583.3
Queue Serve Time (g_s), s	0.0	0.6	0.0	9.3	0.0	5.8	0.0	1.1
Cycle Queue Clear Time (g_c), s	0.0	0.6	0.0	9.3	0.0	5.8	0.0	1.1
Prot RT Sat Flow Rate (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1583.3
Prot RT Eff. Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Proportion RT Outside Lane (P_R)	0.000	1.000	0.000	0.927	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	1050.2	0.0	150.5	0.0	864.3	0.0	195.8
Volume-to-Capacity Ratio (X)	0.000	0.020	0.000	0.812	0.000	0.171	0.000	0.080
Available Capacity (c_a), veh/h	0.0	1050.2	0.0	233.1	0.0	864.3	0.0	269.0
Upstream Filter Factor (I)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	7.1	0.0	54.9	0.0	14.1	0.0	47.9
Incremental Delay (d2), s/veh	0.0	0.0	0.0	11.6	0.0	0.4	0.0	0.2
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.1	0.0	66.5	0.0	14.5	0.0	48.1
First-Term Queue (Q1), veh/ln	0.0	0.2	0.0	3.7	0.0	2.1	0.0	0.4
Second-Term Queue (Q2), veh/ln	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	0.2	0.0	4.2	0.0	2.2	0.0	0.4
Percentile Storage Ratio (RQ%)	0.00	0.02	0.00	0.41	0.00	0.20	0.00	0.06
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM Average Control Delay	24.2
HCM Level of Service	C

2012 PM Peak NOBUILD Conditions
Existing Geometry
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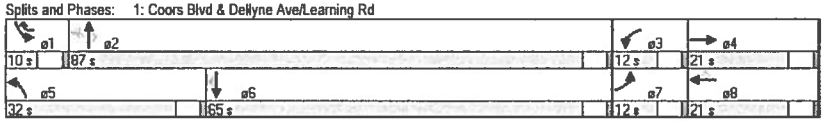
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	110	20	88	21	47	341	2411	67	35	1971	143
Turn Type	Prot	NA	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	12.0	21.0	12.0	21.0	10.0	32.0	87.0	87.0	10.0	65.0	65.0
Total Split (%)	9.2%	16.2%	9.2%	16.2%	7.7%	24.6%	66.9%	66.9%	7.7%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Max	Min	Max	Max
Act Effct Green (s)	7.0	8.5	7.0	8.5	18.5	92.1	82.1	82.1	5.0	63.6	63.6
Actuated g/C Ratio	0.06	0.07	0.06	0.07	0.15	0.75	0.67	0.67	0.04	0.52	0.52
v/c Ratio	0.62	0.62	0.64	0.23	0.27	0.89	0.74	0.06	0.26	0.77	0.17
Control Delay	71.4	26.9	72.5	57.7	43.1	59.7	15.3	2.9	62.7	27.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	26.9	72.5	57.7	43.1	59.7	15.3	2.9	62.7	27.2	5.0
LOS	E	C	E	E	D	E	B	A	E	C	A
Approach Delay		48.0		61.7			20.3			26.3	
Approach LOS		D		E			C			C	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 122.6
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 25.6 — Intersection LOS: C
Intersection Capacity Utilization 85.1% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & Dellyne Ave/Learning Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	20	102	88	21	47	341	2411	67	35	1971	143
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	1	0	2	1	1	1	3	1	2	3	1
Lane Assignment												
Capacity, veh/h	175	27	137	179	189	224	385	3302	1028	136	2691	838
Proportion Arriving On Green	0.05	0.10	0.10	0.05	0.10	0.10	0.16	0.65	0.65	0.04	0.53	0.53
Movement Delay, s/veh	68.6	0.0	75.5	69.2	52.2	49.4	61.8	17.0	8.2	59.9	25.3	15.9
Movement LOS	E		E	E	D	D	E	B	A	E	C	B
Approach Volume, veh/h		258			223			2936			2215	
Approach Delay, s/veh		72.2			61.0			22.2			25.3	
Approach LOS		E			E			C			C	
Timer:		1	2	3	4	5	6	7	8			
Assigned Phase		1	2	3	4	5	6	7	8			
Case No		2.0	3.0	2.0	4.0	1.1	3.0	2.0	3.0			
Phase Duration (G+Y+Rc), s		10.00	87.00	11.55	17.72	25.18	71.82	11.43	17.84			
Change Period (Y+Rc), s		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00			
Max. Allowable Headway (MAH), s		3.81	5.19	3.81	5.06	3.81	5.19	3.81	5.06			
Maximum Green Setting (Gmax), s		5.00	82.00	7.00	16.00	27.00	60.00	7.00	16.00			
Max. Queue Clearance Time (g_c+I1), s		3.28	45.20	6.54	12.35	19.49	41.57	6.41	6.80			
Green Extension Time (g_e), s		0.01	36.30	0.02	0.37	0.69	18.30	0.02	0.74			
Probability of Phase Call (p_c)		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Probability of Max Out (p_x)		1.000	0.982	1.000	1.000	0.129	0.992	1.000	0.135			
Left-Turn Movement Data												
Assigned Movement		1		3		5		7				
Mvmt. Sat Flow, veh/h		3441.64		3441.64		1774.04		3441.64				
Through Movement Data												
Assigned Movement			2		4		6		8			
Mvmt. Sat Flow, veh/h			5085.29		266.11		5085.29		1862.75			
Right-Turn Movement Data												
Assigned Movement			12		14		16		18			
Mvmt. Sat Flow, veh/h			1583.33		1357.14		1583.33		1583.33			
Left Lane Group Data												
Assigned Movement		1	0	3	0	5	0	7	0			
Lane Assignment		L (Prot)		L (Prot)		L (Pr/Pm)		L (Prot)				
Lanes in Group		2	0	2	0	1	0	2	0			
Group Volume (v), veh/h		36.1	0.0	125.7	0.0	355.2	0.0	122.2	0.0			
Group Sat. Flow (s), veh/h/ln		1720.8	0.0	1720.8	0.0	1774.0	0.0	1720.8	0.0			
Queue Serve Time (g_s), s		1.3	0.0	4.5	0.0	17.5	0.0	4.4	0.0			
Cycle Queue Clear Time (g_c), s		1.3	0.0	4.5	0.0	17.5	0.0	4.4	0.0			

Perm LT Sat Flow Rate (s_l), veh/h/ln	0.0	0.0	0.0	0.0	207.8	0.0	0.0	0.0
Shared LT Sat Flow (s_sh), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g_p), s	0.0	0.0	0.0	0.0	84.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	27.3	0.0	0.0	0.0
Perm LT Que Serve Time (g_ps), s	0.0	0.0	0.0	0.0	27.3	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P_L)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	136.3	0.0	178.6	0.0	385.4	0.0	175.3	0.0
Volume-to-Capacity Ratio (X)	0.265	0.000	0.704	0.000	0.922	0.000	0.697	0.000
Available Capacity (c_a), veh/h	136.3	0.0	190.8	0.0	481.2	0.0	190.8	0.0
Upstream Filter Factor (I)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	58.9	0.0	58.9	0.0	41.4	0.0	59.0	0.0
Incremental Delay (d2), s/veh	1.0	0.0	10.3	0.0	20.5	0.0	9.6	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	59.9	0.0	69.2	0.0	61.8	0.0	68.6	0.0
First-Term Queue (Q1), veh/ln	0.6	0.0	2.0	0.0	8.3	0.0	1.9	0.0
Second-Term Queue (Q2), veh/ln	0.0	0.0	0.3	0.0	2.2	0.0	0.2	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/ln	0.6	0.0	2.2	0.0	10.5	0.0	2.2	0.0
Percentile Storage Ratio (RQ%)	0.05	0.00	0.28	0.00	0.89	0.00	0.44	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment		T				T		T
Lanes in Group	0	3	0	0	0	3	0	1
Group Volume (v), veh/h	0.0	2511.5	0.0	0.0	0.0	2032.0	0.0	30.0
Group Sat. Flow (s), veh/h/ln	0.0	1695.1	0.0	0.0	0.0	1695.1	0.0	1862.7
Queue Serve Time (g_s), s	0.0	43.2	0.0	0.0	0.0	39.6	0.0	1.9
Cycle Queue Clear Time (g_c), s	0.0	43.2	0.0	0.0	0.0	39.6	0.0	1.9
Lane Group Capacity (c), veh/h	0.0	3302.4	0.0	0.0	0.0	2690.9	0.0	189.4
Volume-to-Capacity Ratio (X)	0.000	0.760	0.000	0.000	0.000	0.755	0.000	0.158
Available Capacity (c_a), veh/h	0.0	3302.4	0.0	0.0	0.0	2690.9	0.0	236.0
Upstream Filter Factor (I)	0.000	1.000	0.000	0.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	15.3	0.0	0.0	0.0	23.3	0.0	51.8
Incremental Delay (d2), s/veh	0.0	1.7	0.0	0.0	0.0	2.0	0.0	0.4
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	17.0	0.0	0.0	0.0	25.3	0.0	52.2
First-Term Queue (Q1), veh/ln	0.0	15.6	0.0	0.0	0.0	15.4	0.0	0.9
Second-Term Queue (Q2), veh/ln	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	16.1	0.0	0.0	0.0	15.9	0.0	0.9
Percentile Storage Ratio (RQ%)	0.00	0.33	0.00	0.00	0.00	0.36	0.00	0.05

HCM 2010 Signalized Intersection Capacity Analysis
1: Coors Blvd & Dellyne Ave/Learning Rd
Terry O. Brown, PE
10/26/2011 - Synchro 8

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment		R		T+R		R		R
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (v), veh/h	0.0	69.8	0.0	135.6	0.0	147.4	0.0	67.1
Group Sat. Flow (s), veh/h/ln	0.0	1583.3	0.0	1623.2	0.0	1583.3	0.0	1583.3
Queue Serve Time (g_s), s	0.0	2.0	0.0	10.3	0.0	6.1	0.0	4.8
Cycle Queue Clear Time (g_c), s	0.0	2.0	0.0	10.3	0.0	6.1	0.0	4.8
Prot RT Sat Flow Rate (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1583.3
Prot RT Eff. Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Proportion RT Outside Lane (P_R)	0.000	1.000	0.000	0.836	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	1028.2	0.0	163.5	0.0	837.8	0.0	223.7
Volume-to-Capacity Ratio (X)	0.000	0.068	0.000	0.829	0.000	0.176	0.000	0.300
Available Capacity (c_a), veh/h	0.0	1028.2	0.0	205.7	0.0	837.8	0.0	263.3
Upstream Filter Factor (I)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	8.1	0.0	55.7	0.0	15.4	0.0	48.6
Incremental Delay (d2), s/veh	0.0	0.1	0.0	19.8	0.0	0.5	0.0	0.7
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.2	0.0	75.5	0.0	15.9	0.0	49.4
First-Term Queue (Q1), veh/ln	0.0	0.7	0.0	4.2	0.0	2.2	0.0	1.9
Second-Term Queue (Q2), veh/ln	0.0	0.0	0.0	0.9	0.0	0.1	0.0	0.0
Third-Term Queue (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f_B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/ln	0.0	0.7	0.0	5.1	0.0	2.3	0.0	2.0
Percentile Storage Ratio (RQ%)	0.00	0.08	0.00	0.49	0.00	0.21	0.00	0.25
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM Average Control Delay	27.3
HCM Level of Service	C

2012 PM Peak BUILD Conditions
Existing Geometry
D:\ATOBE\PROJECTS\LearningRd_Coors_Credit_Union\Synchro\2012_PBX.syn

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	20	1894	1	19	2181
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.92	0.90	0.90	0.95
Hourly flow rate (vph)	0	22	2059	1	21	2296
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1190			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	2867	515			2060	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2317	0			1369	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			95	
cM capacity (veh/h)	26	923			423	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	22	588	588	588	295	21	765	765	765
Volume Left	0	0	0	0	0	21	0	0	0
Volume Right	22	0	0	0	1	0	0	0	0
cSH	923	1700	1700	1700	1700	423	1700	1700	1700
Volume to Capacity	0.02	0.35	0.35	0.35	0.17	0.05	0.45	0.45	0.45
Queue Length 95th (ft)	2	0	0	0	0	4	0	0	0
Control Delay (s)	9.0	0.0	0.0	0.0	0.0	13.9	0.0	0.0	0.0
Lane LOS	A					B			
Approach Delay (s)	9.0	0.0				0.1			
Approach LOS	A								

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	40	2568	1	24	2148
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.95	0.90	0.90	0.95
Hourly flow rate (vph)	0	44	2703	1	27	2261
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1190			
pX, platoon unblocked	0.76	0.76			0.76	
vC, conflicting volume	3511	676			2704	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2713	0			1649	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			91	
cM capacity (veh/h)	12	821			294	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	44	772	772	772	387	27	754	754	754
Volume Left	0	0	0	0	0	27	0	0	0
Volume Right	44	0	0	0	1	0	0	0	0
cSH	821	1700	1700	1700	1700	294	1700	1700	1700
Volume to Capacity	0.05	0.45	0.45	0.45	0.23	0.09	0.44	0.44	0.44
Queue Length 95th (ft)	4	0	0	0	0	7	0	0	0
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	18.5	0.0	0.0	0.0
Lane LOS	A					C			
Approach Delay (s)	9.6	0.0				0.2			
Approach LOS	A								

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	38	51	59	101	101	61
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	57	66	112	112	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	389	146	180			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	389	146	180			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	94	95			
cM capacity (veh/h)	585	901	1396			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	99	178	180
Volume Left	42	66	0
Volume Right	57	0	68
cSH	732	1396	1700
Volume to Capacity	0.14	0.05	0.11
Queue Length 95th (ft)	12	4	0
Control Delay (s)	10.7	3.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.7	3.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	72	100	88	101	101	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	80	111	98	112	112	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	458	150	188			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	458	150	188			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	88	93			
cM capacity (veh/h)	521	896	1386			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	191	210	188
Volume Left	80	98	0
Volume Right	111	0	76
cSH	689	1386	1700
Volume to Capacity	0.28	0.07	0.11
Queue Length 95th (ft)	28	6	0
Control Delay (s)	12.2	3.9	0.0
Lane LOS	B	A	
Approach Delay (s)	12.2	3.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Traffic Count Data Sheet

Andalucia, Tract 6 Update

Year Counts Taken: **2011**

E-W Street **Dellyne Ave.** **(Learning Rd.)**

N-S Street: **Coors Blvd.**

SIGNALIZED

Speed Limit (Dellyne Ave.)= 25 MPH

Speed Limit (Coors Blvd.)= 45 MPH

Date of Count: 10/20/11

Begin Time	End Time	Eastbound (Dellyne Ave.)			Westbound (Dellyne Ave.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	~~58~~	~~3~~	~~74~~	~~5~~	~~1~~	~~0~~	~~14~~	~~307~~	~~2~~	~~1~~	~~452~~	~~3~~
7:15 AM	7:30 AM	**87**	**3**	**103**	**3**	**1**	**1**	**12**	**346**	**5**	**5**	**554**	**3**
7:30 AM	7:45 AM	**78**	**12**	**81**	**13**	**1**	**1**	**12**	**419**	**20**	**21**	**575**	**8**
7:45 AM	8:00 AM	**47**	**14**	**51**	**16**	**5**	**6**	**24**	**456**	**39**	**13**	**463**	**6**
8:00 AM	8:15 AM	**19**	**1**	**47**	**19**	**1**	**0**	**11**	**394**	**5**	**1**	**485**	**12**
8:15 AM	8:30 AM	~~27~~	~~0~~	~~38~~	~~1~~	~~0~~	~~0~~	~~14~~	~~334~~	~~3~~	~~0~~	~~461~~	~~14~~
8:30 AM	8:45 AM	~~20~~	~~1~~	~~35~~	~~1~~	~~0~~	~~1~~	~~24~~	~~331~~	~~2~~	~~1~~	~~455~~	~~11~~
8:45 AM	9:00 AM	~~22~~	~~0~~	~~41~~	~~4~~	~~0~~	~~0~~	~~20~~	~~362~~	~~1~~	~~0~~	~~464~~	~~13~~
AM Peak Hour Volumes		**231**	**30**	**282**	**51**	**8**	**8**	**59**	**1615**	**69**	**40**	**2077**	**29**
% of Total Traffic		5.1%	0.7%	6.3%	1.1%	0.2%	0.2%	1.3%	35.9%	1.5%	0.9%	46.2%	0.6%
% Directional			12.1%			1.5%			38.7%			47.7%	
AM Peak Hour Factor			*0.70*			*0.62*			*0.84*			*0.89*	

Begin Time	End Time	Eastbound (Dellyne Ave.)			Westbound (Dellyne Ave.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	~~18~~	~~1~~	~~30~~	~~4~~	~~2~~	~~3~~	~~71~~	~~606~~	~~0~~	~~2~~	~~441~~	~~20~~
4:15 PM	4:30 PM	~~23~~	~~2~~	~~21~~	~~1~~	~~1~~	~~0~~	~~72~~	~~568~~	~~4~~	~~1~~	~~490~~	~~23~~
4:30 PM	4:45 PM	~~29~~	~~1~~	~~24~~	~~6~~	~~4~~	~~1~~	~~71~~	~~590~~	~~1~~	~~4~~	~~483~~	~~24~~
4:45 PM	5:00 PM	**30**	**1**	**25**	**9**	**0**	**0**	**70**	**604**	**1**	**2**	**498**	**27**
5:00 PM	5:15 PM	**26**	**0**	**20**	**8**	**1**	**2**	**94**	**574**	**6**	**2**	**487**	**40**
5:15 PM	5:30 PM	**27**	**5**	**29**	**11**	**2**	**2**	**81**	**592**	**7**	**2**	**506**	**40**
5:30 PM	5:45 PM	**26**	**2**	**27**	**9**	**4**	**7**	**92**	**612**	**6**	**1**	**480**	**34**
5:45 PM	6:00 PM	~~18~~	~~1~~	~~28~~	~~2~~	~~2~~	~~2~~	~~70~~	~~617~~	~~2~~	~~2~~	~~456~~	~~31~~
PM Peak Hour Volumes		**109**	**8**	**101**	**37**	**7**	**11**	**337**	**2382**	**20**	**7**	**1971**	**141**
% of Total Traffic		2.1%	0.2%	2.0%	0.7%	0.1%	0.2%	6.6%	46.4%	0.4%	0.1%	38.4%	2.7%
% Directional			4.2%			1.1%			53.4%			41.3%	
PM Peak Hour Factor			*0.89*			*0.69*			*0.96*			*0.97*	

Old Andalucia Trips (South Tract ONLY)

Trip Generation Data

COMMENT	USE (ITE CODE) / DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
S. Tract	High Turnover (Sit-Down) Restaurant (932)	16.00	2,034	96	88	107	68
S. Tract	Drive-In Bank (912)	5.00	2,101	56	41	128	128
	Subtotal		**4,135**	**152**	**129**	**235**	**196**
	Pass-by Trip Reduction	*30%*	*(1,241)*	*(46)*	*(39)*	*(71)*	*(59)*
	Net New Trips to Adjacent Transportation System (Old TIS)		**2,894**	**106**	**90**	**164**	**137**

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

Wednesday, October 26, 2011

Kristal Metro, P.E.
Transportation Section, Planning Department
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Dear Kristal:

As required by the City of Albuquerque Transportation Development Section of the Planning Department, I have prepared this supplemental analysis to the Montano Shoppes / Andalucia, Tract 6 Traffic Impact Study dated June 1, 2007. This supplemental analysis is to specifically address your concerns regarding the proposed U. S. New Mexico Credit Union facility being proposed at the northeast corner of Learning Rd. / Coors Blvd.

Proposed is a 12,380 S.F. Credit Union Facility with four drive-up windows (three standard drive-up windows and one drive-up ATM). Future building will be comprised of an additional 10,000 S.F. General Office Building. The site plan for the Banking Facility is on Page A-3 in the Appendix of the supplemental report. The vacant strip of land along Antequera Rd. is the location of the future General Office Building. This analysis will consider trips generated by both facilities even though there is no definite plan to construct the General Office space yet.

The Trip Generation Summary Table is on Page A-4 of the Appendix. Worksheets for the individual building uses are on Pages A-4a and A-4b. A 30% pass-by trip reduction was made for the trips generated by the Credit Union Facility only – not the office. Note that the trip generation rate for this parcel of land assumed in the June 1, 2007 Traffic Impact Study was somewhat higher than the actual calculated trip generation rate for this plan. The June, 2007 Traffic Impact Study assumed that there would be a banking facility plus two high turnover sit-down restaurants on this particular property. Comparative trip generation rates for the two project are shown below and on Page A-4 in the Appendix:

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

Kristal Metro, P.E.
Wednesday, October 26, 2011

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Credit Union (Learning Rd. / Coors Blvd.)

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

COMMENT	USE (ITE CODE) / DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
Future	General Office Building (710) - Less than 51,000 S	10.00	147	18	2	4	20
Building Size	Drive-In Bank (912)	12.37	1,833	86	67	160	160
	Total Trips - Credit Union Plus Office		**1,980**	**104**	**69**	**164**	**180**
	Pass-by Trip Reduction (Bank)	*30%*	*(550)*	*(26)*	*(20)*	*(48)*	*(48)*
	Net New Trips to Adjacent Transportation System		**1,430**	**78**	**49**	**116**	**132**
	Net New Trips Assumed in 2007 TIS		2,894	106	90	164	137

The primary trips generated by this proposed project were distributed onto the adjacent transportation system based on the Mid-Region Council of Governments Socioeconomic Data (2035 Data Set) considering the population distribution within a two mile radius of the project. Trip Assignments Maps are on Pages S-5 and A-6 in the Appendix showing how the generated primary trips associated with this project were distributed onto the adjacent transportation system. Generated volumes from the project are shown at each intersection on Page A-7 in the Appendix. Pass-by Trip adjustment assignments are shown on Page A-8 in the Appendix.

A recent traffic count was conducted at the intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd. to acquire the current AM and PM Peak Hour turning movement volumes at the intersection to be used as a basis of this study.

Recent Traffic Flow map data along Coors Blvd. demonstrates that an appropriate background traffic growth rate to apply to the existing traffic count volumes is 1.2% annual increase (see Montano Shoppes / Andalucia, Tract 6 Supplemental Study for new Wal-Mart plan). Therefore, the new traffic volumes in this study were increase 1.2% for one year (to the implementation year 2012) to calculate the forecast 2012 AM and PM Peak Hour NO BUILD volumes for this study.

To those 2012 NO BUILD volumes were added the primary and pass-by trips associated with the new U. S. New Mexico Credit Union Development (including 10,000 General Office future use) to calculate the 2012 AM and PM Peak Hour BUILD volumes for this study.

Analysis of the 2012 AM and PM Peak Hour NO BUILD and BUILD volumes were performed using Synchro 8, Build 800 based on the new 2010 Highway Capacity Manual. Analysis will be performed to the intersections of Dellyne Ave. (Learning Rd.) / Coors Blvd. (signalized), Mirandela Rd. / Coors Blvd. (unsignalized – right-in, right-out, left-in only), and the new U. S. New Mexico Credit Union driveway on Antequera Rd.

Kristal Metro, P.E.
Wednesday, October 26, 2011

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Analysis of the signalized intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd.:

The following table summarizes the 2012 AM and PM Peak Hour results of the 2010 HCM analysis for the intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd.

Intersection: **#1 - Dellyne Ave. (Learning Rd.) / C**

	2012 AM Peak Hour			2012 PM Peak Hour		
	BASE GEOMETRY			BASE GEOMETRY		
	NO BUILD		BUILD	NO BUILD		BUILD
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	LOS-Delay
Eastbound - Dellyne Ave. (Learning Rd.)						
L	2	D - 51.2	D - 51.1	2	E - 66.6	E - 68.6
T	1	F - 137	F - 145	1	E - 66.5	E - 75.5
R	>	F - 137	F - 145	>	E - 66.5	E - 75.5
Westbound - Dellyne Ave. (Learning Rd.)						
L	2	D - 53.5	E - 65.0	2	E - 59.5	E - 69.2
T	1	D - 39.7	D - 39.7	1	D - 52.4	D - 52.2
R	1	D - 35.6	D - 36.0	1	D - 48.1	D - 49.4
Northbound - Coors Blvd.						
L	1	C - 27.4	C - 27.5	1	E - 59.7	E - 61.8
T	3	C - 26.4	C - 26.7	3	B - 15.4	B - 17.0
R	1	B - 15.4	B - 16.5	1	A - 7.1	A - 8.2
Southbound - Coors Blvd.						
L	2	D - 51.7	D - 53.1	2	E - 57.2	E - 59.9
T	3	D - 37.0	D - 36.6	3	C - 23.2	C - 25.3
R	1	B - 15.1	B - 15.2	1	B - 14.5	B - 15.9
Intersection:		**D - 42.1**	**D - 43.2**		**C - 24.2**	**C - 27.3**

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The eastbound approach on Dellyne Ave. experiences long delays during the 2012 AM Peak Hour period. This was also the case demonstrated in the 2007 Traffic Impact Study. The 2007 report initially recommended construction of a new eastbound exclusive right turn lane, but after investigating the possibility of acquiring additional right-of-way on Dellyne Ave., it was decided that construction of the new right turn lane was not feasible. Therefore, the City of Albuquerque and the New Mexico Department of Transportation opted to not require construction of the improvement. Other improvements though were constructed by the developer.

Following is a summary of the calculated and available queuing at the intersection. The calculated queues are based on the Poisson's arrival method (95th percentile confidence

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

level) assuming a 110 second cycle length during the AM Peak Hour period and 130 second cycle length during the PM Peak Hour period.

Queueing Analysis Summary Sheet

Project: Credit Union (Dellyne Ave / Coors Blvd)
Intersection: **Dellyne Ave / Coors Blvd**

2012

Approach	Left Turns			Thru Movements				Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*231*	*300*	*1*	*30*	*Cont*		*0*	*282*	*0*
AM NO BUILD Queue	2	234	175	1	30	75		0	285	350
AM BUILD Queue	**2**	**234**	**175**	**1**	**42**	**75**		**0**	**285**	**350**
Existing Lane Length	*2*	*109*	*300*	*1*	*8*	*Cont*		*0*	*101*	*0*
PM NO BUILD Queue	2	110	125	1	8	**25**		0	102	175
PM BUILD Queue	**2**	**110**	**125**	**1**	**20**	**50**		**0**	**102**	**175**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*51*	*125*	*1*	*8*	*Cont*		*1*	*8*	*180*
AM NO BUILD Queue	2	52	75	1	8	25		1	8	25
AM BUILD Queue	**2**	**77**	**75**	**1**	**16**	**50**		**1**	**26**	**50**
Existing Lane Length	*2*	*37*	*125*	*1*	*7*	*Cont*		*1*	*11*	*180*
PM NO BUILD Queue	2	37	**50**	1	7	**25**		1	11	**50**
PM BUILD Queue	**2**	**88**	**100**	**1**	**21**	**50**		**1**	**47**	**100**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*59*	*350*	*3*	*1,615*	*Cont*		*1*	*69*	*150*
AM NO BUILD Queue	1	60	100	3	1,634	675		1	70	125
AM BUILD Queue	**1**	**60**	**100**	**3**	**1,634**	**675**		**1**	**105**	**150**
Existing Lane Length	*1*	*337*	*350*	*3*	*2,382*	*Cont*		*1*	*20*	*150*
PM NO BUILD Queue	1	341	450	3	2,411	>1,000	*	1	20	**50**
PM BUILD Queue	**1**	**341**	**450**	**3**	**2,411**	**>1,000**	*	**1**	**67**	**125**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*40*	*280*	*3*	*2,077*	*Cont*		*1*	*29*	*240*
AM NO BUILD Queue	2	40	50	3	2,102	825		1	29	75
AM BUILD Queue	**2**	**62**	**75**	**3**	**2,089**	**825**		**1**	**29**	**75**
Existing Lane Length	*2*	*7*	*280*	*3*	*1,971*	*Cont*		*1*	*141*	*240*
PM NO BUILD Queue	2	7	**25**	3	1,995	**>1,000**	*	1	143	225
PM BUILD Queue	**2**	**35**	**50**	**3**	**1,971**	**900**		**1**	**143**	**225**

	AM	PM
Cycle Length:	110	130

NOTE: Queue lengths are in feet.

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

There appear to be no major queuing issues at the intersection which need to be addressed.

Analysis of the signalized intersection of Mirandela Ave. / Coors Blvd.:

The following table summarizes the 2012 AM and PM Peak Hour results of the 2010 HCM analysis for the intersection of Mirandela Ave. / Coors Blvd.:

Intersection: **#2 - Mirandela Ave. / Coors Blvd.**

	2012 AM Peak Hour			2012 PM Peak Hour		
	BASE GEOMETRY			BASE GEOMETRY		
	NO BUILD		BUILD	NO BUILD		BUILD
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	LOS-Delay
Westbound - Mirandela Ave.						
L	0	A - 0.0	A - 0.0	0	A - 0.0	A - 0.0
T	0	A - 0.0	A - 0.0	0	A - 0.0	A - 0.0
R	1	A - 0.0	A - 9.0	1	A - 0.0	A - 9.6
Southbound - Coors Blvd.						
L	1	A - 0.0	B - 13.9	1	A - 0.0	C - 18.5
T	3	A - 0.0	A - 0.0	3	A - 0.0	A - 0.0
R	0	A - 0.0	A - 0.0	0	A - 0.0	A - 0.0

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The intersection of Mirandela Ave. / Coors Blvd. is an approved right-in, right-out, left-in only unsignalized intersection that was approved by the Metropolitan Transportation Board of the Mid-Region Council of Governments in 2005. This intersection will provide a secondary access to the new U. S. New Mexico Credit Union project. There are no excessive delays that need to be addressed nor are there excessive queues at the intersection.

Analysis of the signalized intersection of Credit Union Driveway / Antequera Rd.:

The following table summarizes the 2012 AM and PM Peak Hour results of the 2010 HCM analysis for the intersection of Mirandela Ave. / Coors Blvd.:

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

Intersection: **#3 - Credit Union Driveway / Antequ**

	2012 AM Peak Hour			2012 PM Peak Hour		
	BASE GEOMETRY			BASE GEOMETRY		
	NO BUILD		BUILD	NO BUILD		BUILD
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	LOS-Delay
Eastbound - Credit Union Driveway						
L	>	A - 0.0	B - 10.7	>	A - 0.0	B - 12.2
R	1	A - 0.0	B - 10.7	1	A - 0.0	B - 12.2
Northbound - Antequera Rd.						
L	>	A - 0.0	A - 3.1	>	A - 0.0	A - 3.9
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0
Southbound - Antequera Rd.						
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0
R	>	A - 0.0	A - 0.0	>	A - 0.0	A - 0.0

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The projected operation of the proposed U. S. New Mexico Credit Union Driveway / Antequera Rd. are projected to be acceptable for all conditions analyzed in this study. Therefore, no recommendations are made.

In addition to the preceding analysis, the following exhibits and displays are provided in the Appendix of this supplemental report as required by the City:

Pages A-1 and A-2:	Vicinity Maps
Page A-3:	Proposed Site Plan for U. S. New Mexico Credit Union
Page A-4:	Trip Generation Summary Table
Pages A-4a thru A-4b:	Trip Generation Worksheets for Individual Land Uses
Pages A-5 thru A-6:	Trip Assignments Maps
Pages A-7:	Trips Generated Volumes Map (Area wide)
Page A-8:	Pass-by Trip Adjustment Map
Pages A-9 thru A-15:	2012 AM/PM Turning Movements Volumes Worksheets
Pages A-16 thru A-23:	2010 HCM Analysis of Dellyne Ave. (Learning Rd.) / Coors Blvd.
Pages A-24 thru A-25:	2010 HCM Analysis of Mirandela Ave. / Coors Blvd.
Pages A-26 thru A-27:	2010 HCM Analysis of Credit Union Driveway / Antequera
Page A-26:	2011 Traffic Count – Dellyne Ave. (Learning Rd.) / Coors Blvd.
Page A-27:	Trip Generation Rate Table for Parcel in 2007 TIS

The findings of this supplemental analysis conclude that there are no significant operational issues to address associated with the new traffic generated by the proposed

Kristal Metro, P.E.
Wednesday, October 26, 2011

Re: U. S. New Mexico Credit Union (Learning Rd. / Coors Blvd.)

U.S. New Mexico Credit Union development project. The proposed project is expected to generate somewhat less traffic than what was assumed in the 2007 Traffic Impact Study for the Montano Shoppes / Andalucia, Tract 6 for the south commercial tract.

Additionally, it should be kept in mind that the developer of Andalucia, Tract 6 has already constructed significant improvements to the intersection of Dellyne Ave. (Learning Rd.) / Coors Blvd. based on the findings and recommendations of the 2007 Montano Shoppes / Andalucia, Tract 6 Traffic Impact Study.

This supplemental analysis finds that the recommendations and mitigation requirements constructed by the developer based on the 2007 Traffic Impact Study are still valid, and that no further recommendations are made.

Please call me if you have questions.

Best Regards,

Terry O. Brown, P.E.

attachments as noted

cc: Richard Dourte, City of Albuquerque City Engineer
James Topmiller, BHI w/two copies of report
Jackie Fishman, Consensus Planning

E-12 Date 07-22-05
Andalucia, Tract 6

Metro, Kristal D.

From: Terry O. Brown [tobe@swcp.com]
Sent: Thursday, October 20, 2011 2:54 PM
To: Dourte, Richard H.; Metro, Kristal D.; Loyd, Tony J.
Cc: Jackie Fishman; James R. Topmiller
Subject: Proposed Credit Union (NE Corner of Learning Rd. / Coors Blvd.)

Richard / Kristal,

A new 12,370 S.F. Credit Union facility with 4 drive-in windows (3 standard windows plus a ATM drive-up aisle) is being proposed at the northeast corner of Learning Rd. / Coors Blvd. The Andalucia, Tract 6 / Montano Shoppes Traffic Impact Study dated June, 2007 included a banking facility with 5 drive-up windows at this location in the analysis. That traffic impact study was commenced in 2005 and finalized in 2007. The traffic count data utilized in that study was 2003 and 2004 data.

Based on the number of proposed drive-up windows, the proposed new Credit Union facility is expected to generate less traffic than that assumed in the 2007 study for the following reasons:

1) It is a smaller facility than what was assumed in the 2007 TIS (5 windows vs. 4 windows).
2) Update ITE data (from the ITE Trip Generation Manual, 8th Edition, 2008) yields a significantly lower trip generation rate for banking facilities probably due to the impact of online banking, direct deposit, and direct payment plans.

Following is the trip generation comparison table (also attached as a pdf file):

Credit Union (Learning Rd. / Coors Blvd.

Trip Generation Data (ITE Trip Generation Manual - 8th E

COMMENT	USE (ITE CODE) DESCRIPTION		24 HR VOL GROSS	A. M. PEA ENTER
	Summary Sheet	Units		
3 Windows	Drive-In Bank (912)	3	418	16
4 Windows	Drive-In Bank (912)	4	557	22
Building Size	Drive-In Bank (912)	12.37	1,833	86

NOTE: Trips calculated above are based on ITE Trip Generation Manual, 8th Edition, 2008.
Trips below were based on ITE Trip Generation Manual, 7th Edition, 2003

Trips Assumed in 2007 Traffic Impact Study	**5**	**2,101**	**67**

Also, note that calculating the trip generation rate for the Credit Union based on 12,370 S.F. of building yields a higher trip generation rate than using the number of drive-up windows. It also compares favorably with the trip generation rate utilized in the 2007 Traffic Impact Study.

I have attached a trip generation rate summary table and a project preliminary site plan for your review. Jackie Fishman and I would like to meet with you as soon as you and

Kristal are available to discuss your requirements for this project related to the transportation study. Jackie plans to submit the E.P.C. package next Thursday for a December hearing. We are available to meet with you any time tomorrow (Friday) or Monday.

Please call me if you have questions or if you need additional information.

Best Regards,

Terry O. Brown, P.E.
P. O. Box 92051
Albuquerque, NM 87199-2051
(505) 883-8807 – Office
(505) 270-6981 – Cell
(505) 212-0267 – FAX

e-mail: tobe@swcp.com

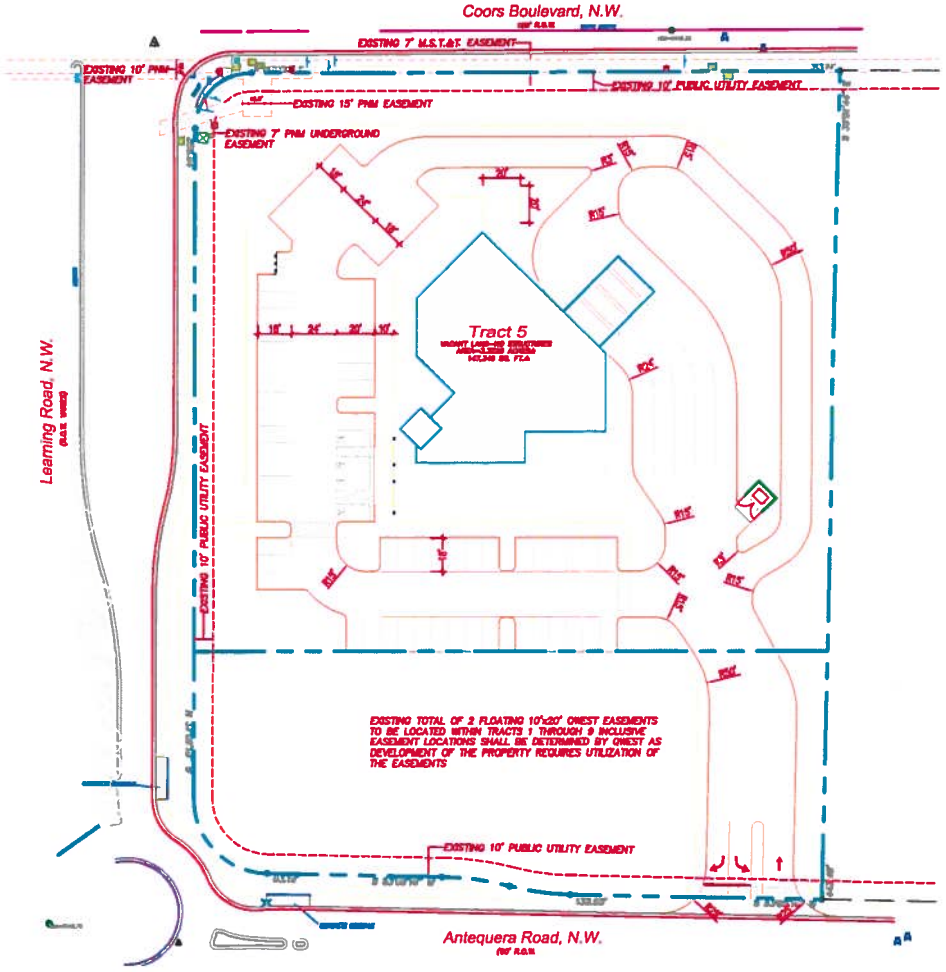
Credit Union (Learning Rd. / Coors Blvd.)

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

COMMENT	USE (ITE CODE) / DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
3 Windows	Drive-In Bank (912)	3	418	16	12	40	42
4 Windows	Drive-In Bank (912)	4	557	22	16	54	56
Building Size	Drive-In Bank (912)	12.37	1,833	86	67	160	160

NOTE: Trips calculated above are based on ITE Trip Generation Manual, 8th Edition, 2008.
Trips below were based on ITE Trip Generation Manual, 7th Edition, 2003

	Trips Assumed in 2007 Traffic Impact Study	**5**	**2,101**	**67**	**51**	**158**	**158**



SITE DATA:

LEGAL DESCRIPTION: TRACT 5 PLAT OF NORTH ANDALUCIA AT LA LUZ.

ZONING: SU-1 FOR FOR C-2, O-1 USES & PRD (20 DU/A).

LAND USE: 1-STORY CREDIT UNION WITH DRIVE IN FACILITIES AND ATM.

BUILDING AREA: 10,000 S.F. (NET LEASABLE)

SETBACK: MINIMUM BUILDING SETBACK FROM HARPER ROAD IS 20 FEET.
MINIMUM LANDSCAPE SETBACK FROM HARPER ROAD IS 20 FEET.

BUILDING HEIGHT: MAXIMUM BUILDING HEIGHT IS 26 FEET.

SITE AREA: 3.3928 ACRES

PARKING: REQUIRED PARKING: 2,914 S.F. 1ST FLOOR @ 1 PER 200 S.F. = 10
2,914 S.F. 2ND FLOOR @ 1 PER 300 S.F. = 10
25
TOTAL PROVIDED PARKING: 15 62

HANDICAPPED REQUIRED: 2
HANDICAPPED PROVIDED: 2
MOTORCYCLE REQUIRED: 2
MOTORCYCLE PROVIDED: 4
BICYCLE REQUIRED: 2
BICYCLE PROVIDED: 2

VEHICULAR ACCESS: VEHICULAR ACCESS TO THIS SITE IS PROVIDED FROM THE EXISTING CURB CUT ON HARPER ROAD AND FROM THE ADJACENT DEL NORTE CENTER.

TRANSIT ACCESS: THERE ARE FOUR BUS STOPS ALONG WYOMING BOULEVARD THAT ARE WITHIN WALKING DISTANCE (LESS THAN ¼ OF A MILE) FROM THE SUBJECT SITE. WYOMING BOULEVARD IS AN ENHANCED TRANSIT CORRIDOR SERVING ABQ RIDE ROUTES 98 AND 31.

INTERNAL CIRCULATION: INTERNAL CIRCULATION AROUND THE PROPOSED BUILDING WILL BE DIRECTED BY TRAFFIC SIGNAGE. PEDESTRIAN CONNECTIONS TO THIS SITE EXIST ALONG HARPER ROAD, AND THERE IS AN EXISTING ASPHALT TRAIL BETWEEN THE SUBJECT SITE AND THE CHERRY HILLS LIBRARY TO THE EAST.

GENERAL NOTES:

1. ALL UTILITIES SERVING THE SITE ARE EXISTING AND WILL NOT REQUIRE ANY MODIFICATION.
2. ONE MONUMENT SIGN IS PROPOSED AT THE SOUTHWEST CORNER OF THE PROPERTY THAT IS LIMITED TO 24 S.F. PER FACE.
3. WALL SIGNS SHALL NOT EXCEED 6% OF "THE AREA OF THE FACADE TO WHICH IT IS RELATED".
4. NO OFF-PREMISE SIGNS ARE PERMITTED.
5. LIGHTING SHALL BE IN COMPLIANCE WITH SECTION 14-16-3-9, AREA LIGHTING REGULATIONS.
6. ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE SCREENED.
7. THE MECHANICAL SYSTEMS (HEATING AND COOLING) AND BUILDING ENVELOPE (WALLS, ROOF, AND WINDOWS) SHALL BE DESIGNED AND MAINTAINED TO PROMOTE THE EFFICIENT USE OF ENERGY.
8. THE SITE DEVELOPMENT PLAN FOR BUILDING PERMIT SHALL COMPLY WITH THE APPROVED SITE DEVELOPMENT PLAN FOR SUBDIVISION FOR TRACTS C1A1A THROUGH C1A5A (Z-83-68).
9. VIDEO SURVEILLANCE CAMERAS SHALL BE INSTALLED TO VIEW EXTERIOR PROPERTY AREAS AND MAIN ENTRANCES.
10. RAINWATER HARVESTING MEASURES, SUCH AS CURB CUTS AND SWALES IN THE LANDSCAPE BUFFER ON HARPER, SHALL BE PROVIDED.
11. ALL SCREENING AND VEGETATION SURROUNDING GROUND-MOUNTED TRANSFORMERS AND UTILITY PADS SHALL ALLOW 10 FEET OF CLEARANCE IN FRONT OF THE EQUIPMENT DOOR AND 5-6 FEET OF CLEARANCE ON THE REMAINING THREE SIDES FOR SAFE OPERATION, MAINTENANCE, AND REPAIR PURPOSES.
12. RECYCLING CARTS SHALL BE PROVIDED IN THE BUILDING AND PICKED UP THROUGH A PRIVATE CONTRACTOR.

PROJECT NUMBER: 1008147
Application Number:

This Plan is consistent with the specific Site Development Plan approved by the Environmental Planning Commission (EPC), dated June 19, 2010 and the Findings and Conditions in the Official Notification of Decision are satisfied.

Is an Infrastructure List required? ( ) Yes (X) No If yes, then a set of approved DRC plans with a work order is required for any construction within Public Right-of-Way or for construction of public improvements.

DRB SITE DEVELOPMENT PLAN SIGNOFF APPROVAL.

Traffic Engineering, Transportation Division	Date
ABCWUA	Date
Parks and Recreation Department	Date
City Engineer	Date
Solid Waste Management	Date
DRB Chairperson, Planning Department	Date

BCI FEDERAL CREDIT UNION

SITE PLAN FOR BUILDING PERMIT

Prepared for:
xxxx
xxxx
Albuquerque, NM 87xxx

Prepared by:
Consensus Planning, Inc.
302 Eighth Street NW
Albuquerque, NM 87102

Scale: 1" = 30'

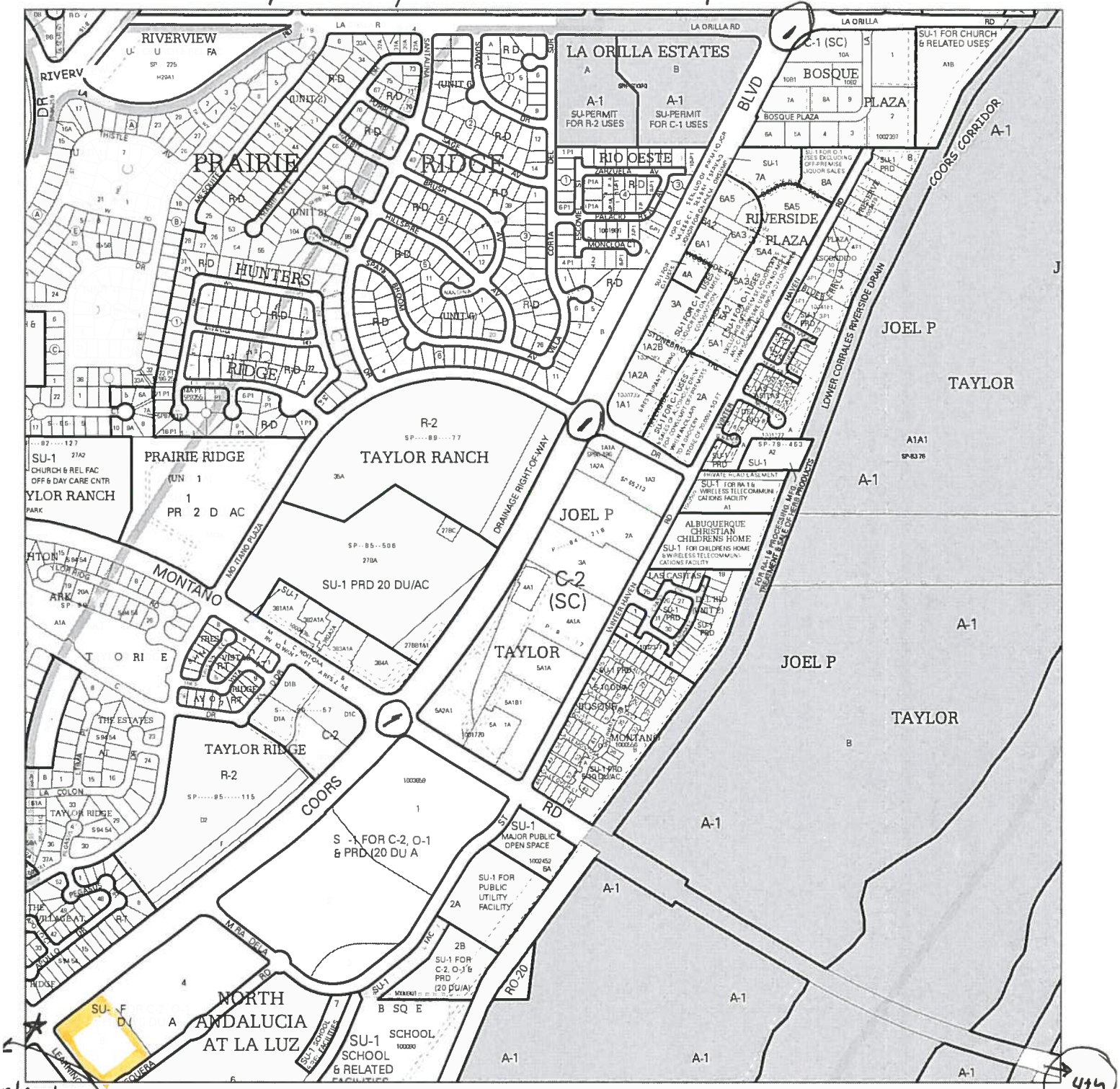
15 0 30 60

NORTH

CONSENSUS PLANNING

October, 2011

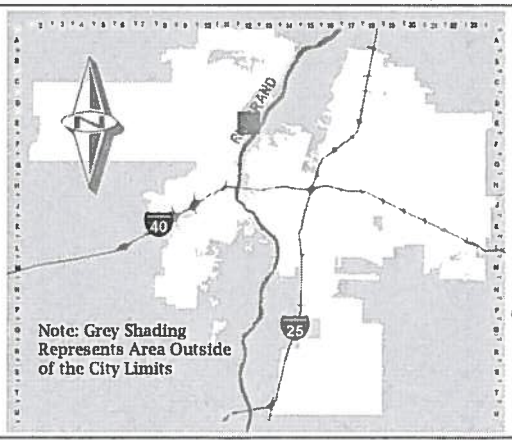
★ – Analysis ○ – trip distribution



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

Albuquerque Geographic Information System

Map amended through: 1/24/2011



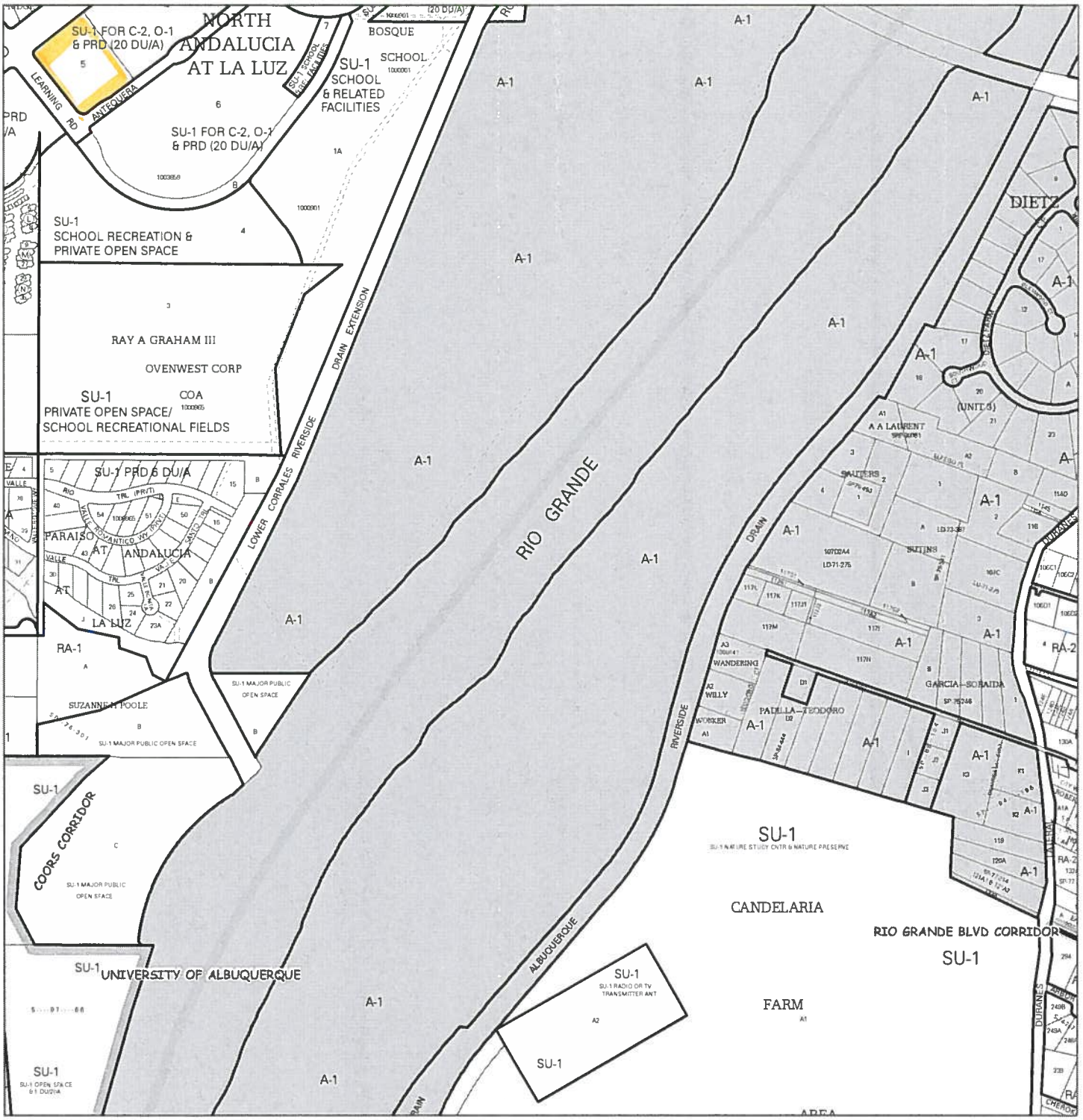
Zone Atlas Page:

E-12-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



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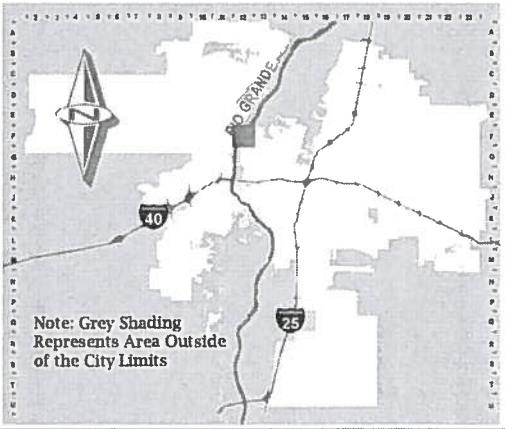
Albuquerque Geographic Information System

Map amended through: 1/24/2011



Zone Atlas Page:

F-12-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