Terry O. Brown P.E.

Sagebrush Community Church

(La Orilla Rd. / Coors Blvd.)

Access Study

April 29, 2013

D R A F T

Presented to:

New Mexico Department of Transportation
District Traffic Engineer

Prepared for:

Sagebrush Community Church
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Sagebrush Church Access
(NE Corner of La Orilla Rd. / Coors Blvd.)
Access Justification Study

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Introduction

The purpose of this study is to evaluate the access to the existing Sagebrush Church located near the northeast corner of La Orilla Rd. / Coors Blvd. to determine if it is feasible and beneficial to improve access to the facility for the most heavily attended Sunday morning services.

Evaluation of the access will include two components. First, will it be beneficial and permissible to implement a new southbound left turn into Roberson Lane from Coors Blvd. at the north side of the church site? Secondly, will it be beneficial and permissible to implement dual northbound left turn lanes, dual southbound left turn lanes, and dual westbound left turn lanes at the intersection of La Orilla Rd. / Coors Blvd. to increase capacity for the Sunday morning church service access.

Study Procedures

When evaluating the alternative access scenarios for the project, it is the case that the only intersections impacted are the signalized intersection of La Orilla Rd. / Coors Blvd. and the intersection of Roberson Lane / Coors Blvd. All other intersections in the area are not significantly affected by the various proposed access scenarios and, therefore, are not considered in this analysis.

Traffic count data was collected for this study on Sunday morning, August 19, 2012 near the beginning of the 9:45 am Church service and again near the beginning of the 11:15 am Church service. Those are the most highly attended services at Sagebrush. Traffic counts were conducted from 9:00 am until 10:00 am to collect the 9:45 am service data. Traffic counts were conducted again from 10:30 am until 11:30 am to collect the peak data associated with the 11:15 am service.

Current schedule for Sagebrush Church includes two Saturday evening services and four Sunday services. Saturday services begin at 4:00 pm and 5:30 pm. Sunday services begin at 8:15 am, 9:45 am, 11:15 am, and 12:45 pm. There are also certain special events at the church scheduled on other days at other times as well (i.e., concerts, guest speakers, etc.).

The intersections impacted were evaluated to calculate level-of-service, delay, and 95th percentile queue length for each intersection and each movement associated with the Cases evaluated. The following cases were analyzed in this study:

Service	Existing Geom.		New Geom.	
9:45 am	**No Left-In**	**Left-In**	**No Left-In**	**Left-In**
11:15 am	**No Left-In**	**Left-In**	**No Left-In**	**Left-In**

Intersection capacity analyses were performed in accordance with the procedures for signalized and unsignalized intersections utilized in the Synchro (Version 8, Build 804) Transportation System analysis software program as required by the New Mexico Department of Transportation and other local governments. The results obtained using Synchro software are generally deemed by the reviewing agencies to be relatively close to those based on the 2010 Highway Capacity Manual.

The results of the analyses of the eight cases were then compared to determine the benefits, if any, of one Case over the other.

Description of Development

Sagebrush Church is an existing Mega-Church that constructed their facility at this location in 2007. The church recently constructed an addition to their campus to facilitate growth in their membership over the past five years. Generated traffic continues to increase resulting in recent expansion of their parking capacity. The Pastor at Sagebrush has seen very strong growth in the church and feels that the growth will continue. He believes that his growth can be as high as 25 percent on any given year but a more manageable 10 percent may be more realistic. . In order to forecast 2023 volumes associated with the 9:45 am and the 11:15 am church services, the more conservative 10% annual growth rate was utilized. However, it should be noted that the 10% growth cannot be accommodated without adding more services on weekends. The potential for growth in the attendance of each service is limited by the seating capacity of the facility. The current peak attendance is approximately 1,800 people. The capacity of the facility is 2,067. Therefore, each service is constrained to a 15% increase based on seating capacity. Therefore, the annual growth rate for traffic generated by Sagebrush Church was established to model a 15% growth to the horizon year analysis (2023). Therefore, the number and times of services held by Sagebrush Church will change from time to time to accommodate the growth, but the traffic characteristics should remain generally within the assumptions held in this study.

For quite some time now, traffic volumes generated by Sagebrush are large enough that City of Albuquerque Police Officers are commissioned each Sunday morning to direct traffic entering and exiting the site at the signalized intersection of La Orilla Rd. / Coors Blvd. They usually set the signal at La Orilla / Coors to flash and begin directing traffic about ten to fifteen minutes before the 9:45 am and the 11:15 am services begin. They direct traffic for about 15 minutes until the traffic obviously dissipates back to normal volumes that can be handled by the traffic signal.

During the time that the Police Officers were directing traffic at La Orilla / Coors, it was observed that the southbound left turn lane on Coors Blvd. at La Orilla backed up approximately 1,000 feet. Thus, the southbound left turn queue on Sunday mornings currently spills into the southbound inside thru lane on multiple occasions. Implementation of dual southbound left turn lanes should significantly reduce that queue length, but by adding the additional turning movement at Robinson Lane (providing essentially three turning lanes) would handle the projected turning movements. The new dual southbound left turn lanes will be designed to contain the 95th percentile queue length.

Trip Generation Rates

The Church generates a very high volume of traffic (entering and exiting) typically for a 15-minute period after which the generated traffic volumes drop sharply. It is during the 12 to 15-minute period before each of the major church services that a very high demand is made to the adjacent transportation system. The turning movement exceeds the green turning movement of the normal signal cycle length as requires Police Officers direct traffic to clear the queue lengths and provide a safe environment. . The primary reason that the intersection of La Orilla / Coors is overloaded is due to the heavy southbound left turn movement and the somewhat heavy westbound left turn movement overlaid onto the Sunday morning background traffic volumes. This problem is expected to increase as the Church grows larger. The Trip Generation rates have taken into account both the background growth and the growth anticipated by the church. s mentioned earlier, there is significant church growth forecast for this facility. A growth rate of 1.5% per year was utilized to model traffic generated by the church (see Page 2).

Trip Distribution / Trip Assignments

There are no hypothetical new forecast trips included in this analysis that require distribution onto the adjacent transportation system. This analysis is for existing traffic volumes and for 2023 forecast volumes, but the distribution of those volumes are assumed to be consistent with the distribution of the existing trips generated by the facility.

Background Traffic Growth

No background traffic growth was considered in the 2012 analysis since the problem analyzed is an existing one. Therefore, current volumes were utilized. The forecast volumes for the year 2023 are grown based on the Mid-Region Council of Governments' Regional Transportation Model (2035 data set). The regional model indicates that background traffic in this area should grow by approximately 3% per year. Church traffic to and from Sagebrush Community Church is projected to grow at a rate of approximately 1.5% per year.

Case Analyses

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

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

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

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

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

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

Additionally, calculated 95th percentile queue lengths at signalized intersections are based on Poisson's arrival equations. The 95th percentile queue lengths at unsignalized intersections are those reported in the Synchro HCM Unsignalized Intersection Analysis reports.

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

Intersection #1 – La Orilla Rd. / Coors Blvd. - Pages A-11 thru A-29

As previously mentioned, the evaluation of the signalized intersection of La Orilla Rd. / Coors Blvd. was conducted for the following eight Cases:

1) 9:45 AM Service, Existing Geometry, No Upstream Left Turn In on Coors Blvd.
2) 9:45 AM Service, Existing Geometry, With Upstream Left Turn In on Coors Blvd.
3) 9:45 AM Service, NEW Geometry, No Upstream Left Turn In on Coors Blvd.
4) 9:45 AM Service, NEW Geometry, With Upstream Left Turn In on Coors Blvd.
5) 11:15 AM Service, Existing Geometry, No Upstream Left Turn In on Coors Blvd.
6) 11:15 AM Service, Existing Geometry, With Upstream Left Turn In on Coors Blvd.
7) 11:15 AM Service, NEW Geometry, No Upstream Left Turn In on Coors Blvd.
8) 11:15 AM Service, NEW Geometry, With Upstream Left Turn In on Coors Blvd.

Currently, the intersection of La Orilla Rd. / Coors Blvd. is constructed with dual northbound and southbound left turn lanes, but one of the left turn lanes is stripped out and not functional on each of the two approaches. Therefore, the northbound / southbound left turn phases are designated as permitted / protected. Implementing the dual northbound and southbound left turn lanes will require some striping modifications on the existing pavement and signal timing modifications and signing to implement protected only left turn movements on Coors Blvd.

The existing southbound left turn bay on Coors Blvd. at La Orilla Rd. is only about 175 feet long. Total anticipated queuing for the southbound movement on Coors Blvd. at La Orilla Rd. is calculated to be approximately 950 feet long using Poisson's Arrival Method with a 95th percentile confidence level. Even by opening up the other turning lane at La Orilla the queue will still back up beyond the constructed turn lanes. By adding the turning movement at Robinson it essentially creates a third turning lane for the southbound left turning movement.

Implementation of the northbound / southbound dual left turn lanes should accomplish two benefits. First, it should increase the capacity of the intersection while reducing the overall intersection delay. Secondly, it should reduce the southbound left turn queue length by queuing the left turning vehicles side-by-side.

The table on the following page demonstrates and summarizes the 2012 analysis for the signalized intersection of La Orilla Rd. / Coors Blvd. for each of the Cases:

Detailed Summary

Intersection No.: 1
Project: **Sagebrush Church Access**
EW Street: **La Orilla Rd.**
NS Street: **Coors Blvd.**
Intersection: 1 - La Orilla Rd. / Coors Blvd.

9:45 AM Service (2012)

		(Existing Geom.) No Left-In at Roberson		(Existing Geom.) With Left-In at Roberson		(NEW Geom.) No Left-In at Roberson		(NEW Geom.) With Left-In at Roberson	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	D - 46.4	1	D - 45.4	1	E - 62.4	1	E - 59.7
	T	1	**F** - 95.6	1	**F** - 84.6	1	E - 58.0	1	D - 52.2
	R	1	A - 0.0	1	A - 0.0	1	A - 0.0	1	A - 0.0
WB	L	1	**F** - 93.6	1	E - 68.0	**2**	E - 62.4	**2**	E - 55.7
	T	1	D - 44.0	1	D - 42.2	1	A - 0.0	1	A - 0.0
	R	1	B - 11.5	1	B - 17.1	>	D - 46.4	>	D - 43.8
NB	L	1	D - 38.2	1	C - 29.6	**2**	E - 62.8	**2**	E - 60.1
	T	3	E - 77.9	3	D - 42.9	3	D - 35.2	3	C - 29.6
	R	1	A - 0.0	1	A - 0.0	1	D - 54.2	1	D - 40.9
SB	L	1	E - 77.8	1	E - 58.4	**2**	D - 49.8	**2**	D - 49.5
	T	3	B - 15.7	3	B - 16.5	3	B - 16.2	3	B - 16.4
	R	1	B - 13.5	1	B - 14.2	1	B - 13.9	1	B - 14.1
Intersection:		***E - 60.6***		***D - 42.7***		***D - 40.8***		***D - 36.2***	

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

11:15 AM Service (2012)

		(Existing Geom.) No Left-In at Roberson		(Existing Geom.) With Left-In at Roberson		(NEW Geom.) No Left-In at Roberson		(NEW Geom.) With Left-In at Roberson		(MITIGATION)* With Left-In at Roberson	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	D - 40.8	1	D - 40.1	1	**F** - 109	1	**F** - 109	1	**F** - 82.9
	T	1	E - 71.9	1	E - 55.4	1	C - 35.0	1	E - 60.4	1	E - 61.4
	R	1	A - 0.0	1	A - 0.0	1	A - 0.0	1	A - 0.0	1	A - 0.0
WB	L	1	D - 52.2	1	D - 40.9	**2**	E - 67.2	**2**	D - 37.1	**2**	C - 31.2
	T	1	D - 42.8	1	D - 38.8	1	A - 0.0	1	A - 0.0	1	A - 0.0
	R	1	C - 23.0	1	C - 34.3	>	**F** - 127	>	**F** - 107	>	E - 65.7
NB	L	1	C - 31.3	1	C - 23.0	**2**	E - 68.6	**2**	E - 68.6	**2**	E - 66.9
	T	3	D - 48.5	3	C - 33.8	3	E - 55.5	3	D - 47.2	**4**	D - 51.0
	R	1	A - 0.0	1	A - 0.0	1	**F** - 349	1	**F** - 233	**1***	B - 13.2
SB	L	1	E - 62.4	1	D - 45.5	**2**	E - 78.3	**2**	E - 79.5	**2**	E - 69.9
	T	3	C - 20.2	3	C - 22.9	3	C - 33.4	3	D - 35.2	3	D - 42.2
	R	1	B - 16.6	1	B - 18.7	1	C - 27.0	1	C - 28.4	1	C - 33.2
Intersection:		***D - 40.1***		***C - 33.6***		***F - 102***		***F - 82.0***		***D - 47.1***	

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

* Add Right Turn Overlap Phase / 4th NB Lane

* - Northbound right turn movement to be permitted / overlap (add signal indicator).
Open up fourth northbound thru lane on Coors Blvd. from south of La Orilla to Roberson Lane.

In summary, the existing intersection experiences an average of 60.6 seconds (LOS "E") of control delay before the 9:45 am Service and 40.1 seconds (LOS "D") of control delay before the 11:15 am Service. More importantly, the southbound left turn movement queues back on Coors Blvd. approximately 1,000 (observed in the field), spilling over into the southbound thru lane.

Implementing dual northbound, southbound, and westbound left turn lanes and constructing a new southbound left turn deceleration lane on Coors Blvd. at Roberson Lane will reduce the average delays at the signalized intersection of La Orilla Rd. / Coors Blvd. from 60.6 seconds to 36.2 seconds (LOS "D") for the 9:45 am Service and will increase the average delays for the signalized intersection from 40.1 seconds to 47.1 seconds (LOS "D") for the 11:15 am Service. (Implementation of a northbound permitted / overlap right turn movement is required to maintain LOS "D" for the 11:15 am service). More importantly, the southbound left turn queue length (95th Percentile) will be reduced from approximately 1,000 feet long to 475 feet long and bringing all turning traffic into a turn lane and out of the through lanes on Coors Blvd.

Thus, there are overall significant benefits to the proposed new design of the signalized intersection of La Orilla Rd. / Coors Blvd. and the construction of a southbound left turn lane on Coors Blvd. at Roberson Lane.

For the 2023 analysis, this study assumes that the new geometry will have been constructed with the dual southbound and dual westbound left turn lanes. Therefore, no analysis based on existing geometry was conducted. The following table summarizes the results of the 2023 analysis at the intersection of La Orilla Rd. / Coors Blvd.:

Intersection: 1 - La Orilla Rd. / Coors Blvd.

		9:45 AM Service (2023) (NEW Geometry)					11:15 AM Service (2023) (NEW Geometry)				
		No Left-in		Left-in			No Left-in		Left-in		
		Lanes	LOS-Delay	Lanes	LOS-Delay		Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L	1	F - 82.9	1	E - 74.6	EB	1	F - 253	1	F - 152	EB
	T	1	F - 90.3	1	E - 73.1		1	D - 46.5	1	D - 39.6	
	R	1	D - 40.2	1	D - 37.5		1	D - 35.3	1	C - 30.9	
WB	L	2	E - 78.2	2	E - 57.7	WB	2	E - 61.8	2	E - 59.6	WB
	T	1	E - 55.8	1	D - 50.1		1	F - 218	1	F - 167	
	R	>	E - 55.8	>	D - 50.1		>	F - 218	>	F - 167	
NB	L	1	E - 72.0	1	E - 67.4	NB	1	E - 76.6	1	E - 76.6	NB
	T	3	D - 44.0	3	D - 38.9		3	E - 57.3	3	E - 68.5	
	R	1	D - 42.6	1	D - 36.2		1	F - 109	1	F - 125	
SB	L	2	E - 70.6	2	E - 62.5	SB	2	F - 143	2	F - 116	SB
	T	3	B - 19.3	3	C - 20.1		3	C - 34.2	3	D - 40.9	
	R	1	B - 16.1	1	B - 16.7		1	D - 52.5	1	E - 79.4	
Intersection:		***D - 49.3***		***D - 43.2***			***F - 87.0***		***F - 83.3***		

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

Implementation of the proposed southbound left turn in movement on Coors Blvd. at Roberson Lane is projected to effect a reduction of average delay at the intersection of La Orilla Rd. / Coors Blvd. from 49.3 seconds to 43.2 seconds at the beginning of the 9:45 am service and from 87.0 seconds to 83.3 seconds at the beginning of the 11:15 am service.

Intersection #2 –Roberson Lane / Coors Blvd. - Pages A-18 / 19 and A-28 / 29

The following table summarizes the analysis for the unsignalized intersection of Roberson Ln. / Coors Blvd. for each of the Cases:

Intersection: 2 - Roberson Ln. / Coors Blvd.

9:45 AM Service

		(Left-in (2012)) Existing Geom. Lanes	LOS-Delay	(Left-in (2012)) New Geom. Lanes	LOS-Delay	(Left-in (2023)) New Geom. Lanes	LOS-Delay
WB	T	0	A - 0.0	0	A - 0.0	0	A - 0.0
	R	1	D - 33.3	1	D - 33.3	1	F - 72.5
NB	L	>	A - 0.0	>	A - 0.0	>	A - 0.0
	T	1	A - 0.0	1	A - 0.0	1	A - 0.0
	R	1	A - 0.0	1	A - 0.0	1	A - 0.0
SB	L	>	D - 32.6	>	D - 32.6	>	F - 93.7
	T	1	A - 0.0	1	A - 0.0	1	A - 0.0
	R	>	A - 0.0	>	A - 0.0	>	A - 0.0
Intersection:		*u - 0.0*		*u - 0.0*		*u - 0.0*	

11:15 AM Service

		(Left-in (2012)) Existing Geom. Lanes	LOS-Delay	(Left-in (2012)) New Geom. Lanes	LOS-Delay	(Left-in (2023)) New Geom. Lanes	LOS-Delay
WB	T	0	A - 0.0	0	A - 0.0	0	A - 0.0
	R	1	F - 81.3	1	F - 81.3	1	F - 252
NB	L	>	A - 0.0	>	A - 0.0	>	A - 0.0
	T	1	A - 0.0	1	A - 0.0	1	A - 0.0
	R	1	A - 0.0	1	A - 0.0	1	A - 0.0
SB	L	>	F - 78.8	>	F - 78.8	>	F - 289
	T	1	A - 0.0	1	A - 0.0	1	A - 0.0
	R	>	A - 0.0	>	A - 0.0	>	A - 0.0
Intersection:		*u - 0.0*		*u - 0.0*		*u - 0.0*	

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

The unsignalized intersection of Roberson Lane / Coors Blvd. currently exists as a right-in, right-out only intersection. It is proposed to allow a southbound left-in movement at the intersection. It is recognized that the projected levels-of-service associated with the 11:15 am Service are below the targeted LOS "D". This is true for both the existing westbound right turn movement as well as the proposed southbound left turn movement.

This report recommends that a southbound left turn movement on Coors Blvd. at the intersection of Roberson Lane / Coors Blvd. be permitted with the condition that it be controlled by a police officer directing traffic during the times when Sagebrush Community Church is either initiating or ending a church service or special event.

Improvements proposed for the signalized intersection of La Orilla Rd. / Coors Blvd. suggest that the signalized intersection may be able to handle the entering and exiting traffic associated with Sagebrush Church services and events without the assistance of police officers directing traffic. It seems to be the case that the police officers will be needed to direct traffic at the proposed new Roberson Lane access if the southbound left turn lane is approved by the New

Mexico Department of Transportation. The presence of the police officers during those times will also assist with the safety and efficiency of the operation of the westbound right turn movement on Roberson Lane onto Coors Blvd.

These proposed improvements will greatly benefit the network and the Church operation. Further, it is recommended that the existing fourth northbound thru lane on Coors Blvd. be restriped to open it up for normal traffic.

Access Design Specifications

Access along Coors Blvd. will be required to comply with Table 18.C-1 of the New Mexico Department of Transportation's *State Access Management Manual* to the degree possible. Coors Blvd. is considered as an Urban Principal Arterial Roadway. Spacing of signalized intersections along Coors Blvd. is required to be 5,280 feet minimum with full access points spaced at a minimum of 1,320 feet and partial access points spaced at 625 feet minimum (based on posted speed of 55 MPH).

If approved, the southbound left turn lane on Coors Blvd. at Roberson Lane should be designed and constructed to a minimum length of 750 feet plus transition (16.5:1 taper). As suggested earlier, this study recommends that the unsignalized intersection of Roberson Lane / Coors Blvd. be directed by a police officer during those times when Sagebrush Church has a regularly scheduled major church service or a major event.

Findings and Conclusions

This report finds that the traffic associated with the normal weekly church services at Sagebrush Church or special events at the church impose a severe stress on the existing signalized intersection of La Orilla Rd. / Coors Blvd. Although it is for relatively short periods of time, the traffic entering and exiting Sagebrush Church on Saturday evenings and Sunday mornings trigger long delays and long queuing at the intersection, especially for the southbound left turn movement. Currently, City of Albuquerque Police Officers regularly set the signal to flash and direct traffic for 10 to 15 minutes during the times that one service is letting out and the next service is arriving to begin. Even with the presence of the police officers to direct traffic at the intersection, there are still long delays and very long queues.

The problems associated with the high traffic volumes during the church services and events at Sagebrush Church can be mitigation by following the Recommendations below:

Recommendations

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

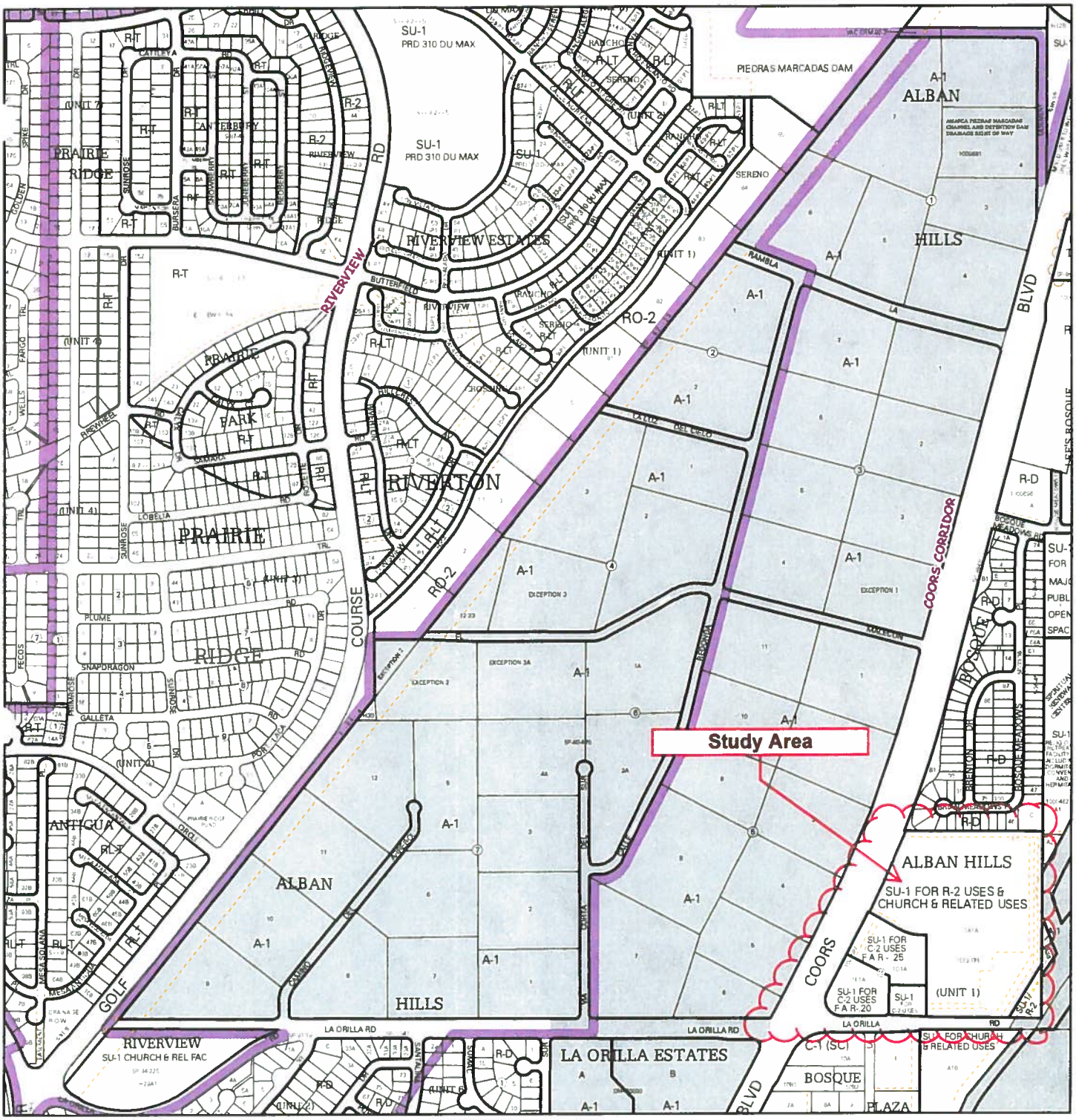
Recommendations for improvements to the adjacent transportation system include:

La Orilla Rd. / Coors Blvd. – Implement the dual northbound and southbound left turn lanes on Coors Blvd. at the intersection by revising the lane striping to open up the existing second left turn lanes. Also construct dual westbound left turn lanes on La Orilla Rd. by converting the westbound thru lane to a left turn lane, and converting the westbound right turn lane to a thru / right turn lane. Revised signal timing to reflect these changes and designate the dual left turn lanes as "protected only" movements. Finally, construct a right turn overlap arrow on the existing signal to designate the northbound right turn movement as a permitted / overlap phase movement. The southbound dual left turn lanes should be extended so as to provide a total of 950 feet of queueing. The inside left turn lane, though, will be somewhat shorter than the outside left turn lane due to constraints imposed by the existing median width on Coors Blvd. Based on current volumes at the intersection of La Orilla Rd. / Coors Blvd., the design and construction of the dual southbound left turn lanes should be 475 feet. Due to the constraint imposed by the width of the existing raised median on Coors Blvd., the dual left turn lanes cannot both be constructed to that length. Therefore, this report recommends that the dual left turn lanes be constructed to provide a total of 950 feet of queue storage. The dual left turn lanes should be constructed to a length of 350 feet (providing a total of 700 feet of storage) plus an extension of the outside left turn lane to provide another 250 feet of storage.

Roberson Lane / Coors Blvd. – Modify the existing intersection to allow a left-turn-in movement. A 750 feet long southbound left turn deceleration lane should be constructed on Coors Blvd. to serve the new southbound left-turn-in movement. A police officer should be employed to direct traffic at the intersection of Roberson Lane / Coors Blvd. during at the beginning and end of normal church services for Sagebrush Community Church as well as for special events at the church.

Appendix

APPENDIX



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

Albuquerque Geographic Information System

Map amended through: 4/2/2012

Zone Atlas Page:

D-12-Z

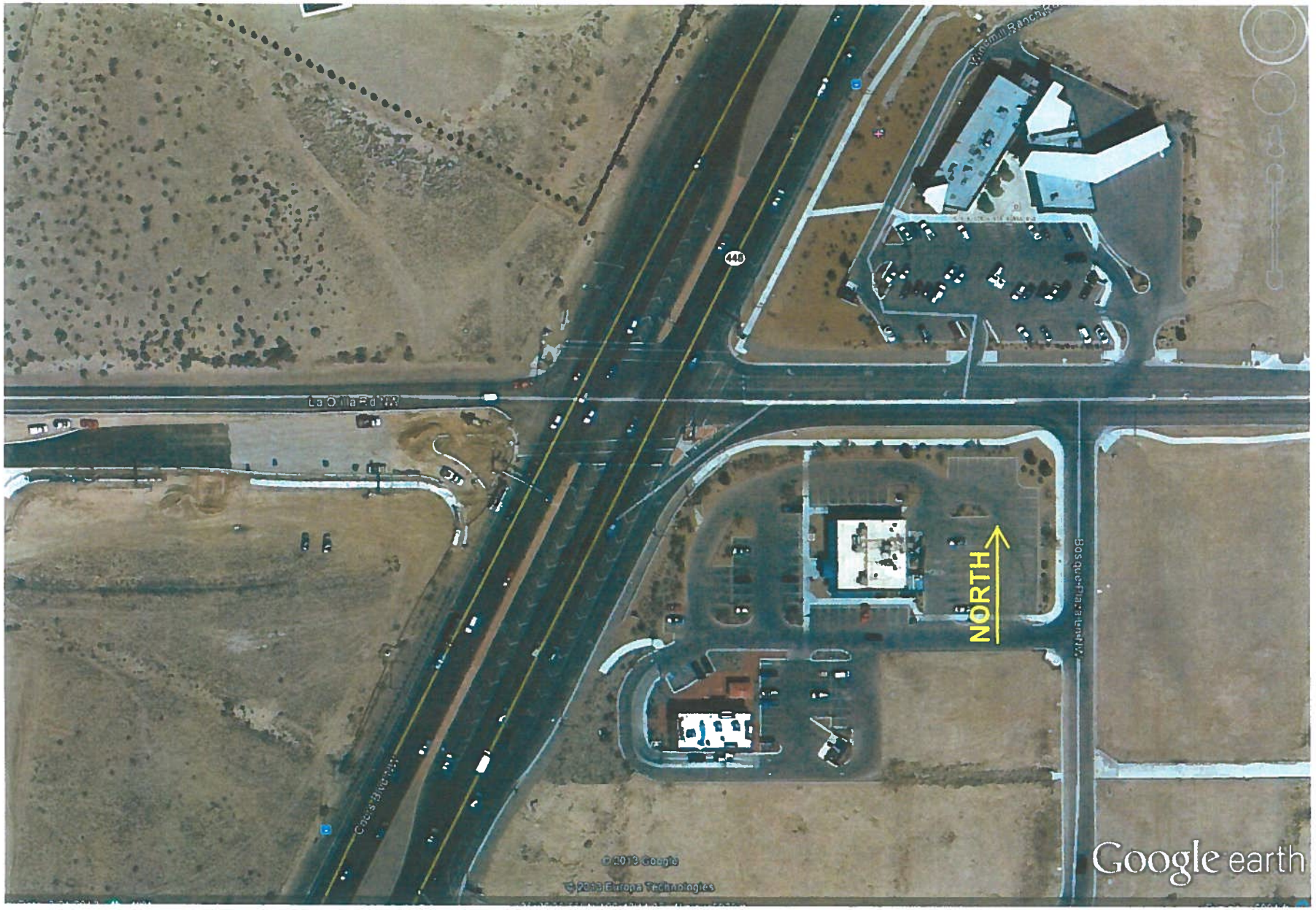
Selected Symbols

- 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 75 Feet

A - 1


North Access
Approx. 1,100'
Coors Blvd.
Sagebrush Community Church
La Orilla Rd.
NORTH
Google earth



Aerial Photo - La Orilla Rd. / Coors Blvd.

Sagebrush Church Access

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2023) - 100% Development

INTERSECTION: **Summary**

La Orilla-Sunday / Coors Blvd

(1)

3.0% Truck

	0.85			0.85			0.85			0.85			PHF
	Eastbound (La Orilla-Sunday)			Westbound (La Orilla-Sunday)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	84	204	36	216	76	76	60	884	376	652	692	44	
2023 (9:45 AM Service)	*98*	*238*	*48*	*252*	*89*	*89*	*79*	*1,160*	*438*	*760*	*933*	*59*	
2023 (Left-in @ N.Drive)	***98***	***238***	***48***	***252***	***89***	***89***	***79***	***1,160***	***438***	***610***	***933***	***59***	

	0.85			0.85			0.85			0.85			PHF
	Eastbound (La Orilla-Sunday)			Westbound (La Orilla-Sunday)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	104	216	72	320	160	392	32	956	556	464	988	352	
2023 (11:15 AM Service)	*121*	*252*	*96*	*373*	*186*	*457*	*42*	*1,255*	*648*	*541*	*1,333*	*475*	
2023 (Left-in @ N.Drive)	***121***	***252***	***96***	***373***	***186***	***457***	***42***	***1,255***	***648***	***401***	***1,333***	***475***	

North Drive / Coors Blvd

(2)

3.0% Truck

	0.85			0.85			0.85			0.85			PHF
	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	0	0	216	0	1,044	124	0	1,388	0	
2023 (9:45 AM Service)	*0*	*0*	*0*	*0*	*0*	*252*	*0*	*1,305*	*144*	*0*	*1,752*	*0*	
2023 (Left-in @ N.Drive)	***0***	***0***	***0***	***0***	***0***	***252***	***0***	***1,305***	***144***	***150***	***1,602***	***0***	

	0.85			0.85			0.85			0.85			PHF
	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	0	0	204	0	1,452	80	0	1,540	0	
2023 (11:15 AM Service)	*0*	*0*	*0*	*0*	*0*	*238*	*0*	*1,731*	*93*	*0*	*2,349*	*0*	
2023 (Left-in @ N.Drive)	***0***	***0***	***0***	***0***	***0***	***238***	***0***	***1,731***	***93***	***140***	***2,209***	***0***	

South Drive / Coors Blvd

(3)

3.0% Truck

	0.85			0.85			0.85			0.85			PHF
	Eastbound (South Drive)			Westbound (South Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	0	0	152	0	788	64	0	1,388	0	
2023 (9:45 AM Service)	*0*	*0*	*0*	*0*	*0*	*177*	*0*	*1,272*	*75*	*0*	*1,752*	*0*	
2023 (Left-in @ N.Drive)	***0***	***0***	***0***	***0***	***0***	***177***	***0***	***1,272***	***75***	***0***	***1,602***	***0***	

	0.85			0.85			0.85			0.85			PHF
	Eastbound (South Drive)			Westbound (South Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2012)	0	0	0	0	0	104	0	1,372	112	0	1,804	0	
2023 (11:15 AM Service)	*0*	*0*	*0*	*0*	*0*	*121*	*0*	*1,703*	*130*	*0*	*2,349*	*0*	
2023 (Left-in @ N.Drive)	***0***	***0***	***0***	***0***	***0***	***121***	***0***	***1,703***	***130***	***0***	***2,209***	***0***	

Sagebrush Church Access

Projected Turning Movements Worksheet

La Orilla-Sunday / Coors Blvd

INTERSECTION: E-W Street: **La Orilla-Sunday** (1)

N-S Street: **Coors Blvd**

Year of Existing Counts 2012

Horizon Year **2023**

Growth Rates	1.50%	1.50%	3.00%	1.50%	1.50%	1.50%	2.84%	2.84%	1.50%	1.50%	3.17%	3.17%
	Eastbound (La Orilla-Sunday)			Westbound (La Orilla-Sunday)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
9:45 AM Service	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	84	204	36	216	76	76	60	884	376	652	692	44
Background Traffic Growth	14	34	12	36	13	13	19	276	62	108	241	15
Subtotal (9:45 AM Service)	***98***	***238***	***48***	***252***	***89***	***89***	***79***	***1,160***	***438***	***760***	***933***	***59***
Adjustment for SB left-in (N.Drive)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*-150*	*0*	*0*
9:45 AM Service w/left-in (N.Drive)	**98**	**238**	**48**	**252**	**89**	**89**	**79**	**1,160**	**438**	**610**	**933**	**59**

	1.50%	1.50%	3.00%	1.50%	1.50%	1.50%	2.84%	2.84%	1.50%	1.50%	3.17%	3.17%
	Eastbound (La Orilla-Sunday)			Westbound (La Orilla-Sunday)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
11:15 Service	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	104	216	72	320	160	392	32	956	556	464	988	352
Background Traffic Growth	17	36	24	53	26	65	10	299	92	77	345	123
Subtotal (11:15 AM Service)	***121***	***252***	***96***	***373***	***186***	***457***	***42***	***1,255***	***648***	***541***	***1,333***	***475***
Adjustment for SB left-in (N.Drive)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*-140*	*0*	*0*
11:15 AM Service w/left-in (N.Drive)	**121**	**252**	**96**	**373**	**186**	**457**	**42**	**1,255**	**648**	**401**	**1,333**	**475**

	Eastbound (La Orilla-Sunday)			Westbound (La Orilla-Sunday)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
2012 AM Peak Hr. Volumes	84	204	36	216	76	76	60	884	376	652	692	44
2012 PM Peak Hr. Volumes	104	216	72	320	160	392	32	956	556	464	988	352

MRCOG Forecast Volumes Worksheet

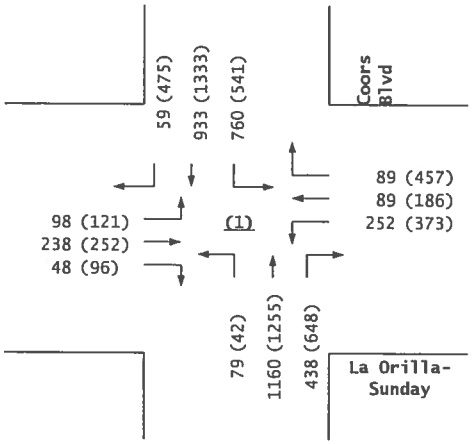
Based on MRCOG Model (2025 Data Set)

2015 AM Link Volume	**47**	**0**	**2609**	**2484**
2015 PM Link Volume	**327**	**0**	**2198**	**2457**
2025 AM Link Volume	**393**	**0**	**3350**	**3272**
2025 PM Link Volume	**774**	**0**	**2873**	**3179**

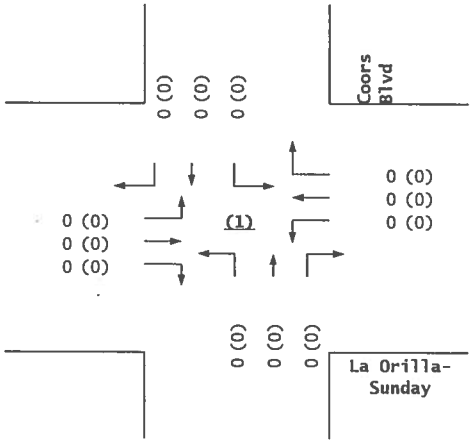
Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

2015-2025 AM Growth Rates	73.62%	#DIV/0!	2.84%	3.17%
2015-2025 PM Growth Rates	13.67%	#DIV/0!	3.07%	2.94%

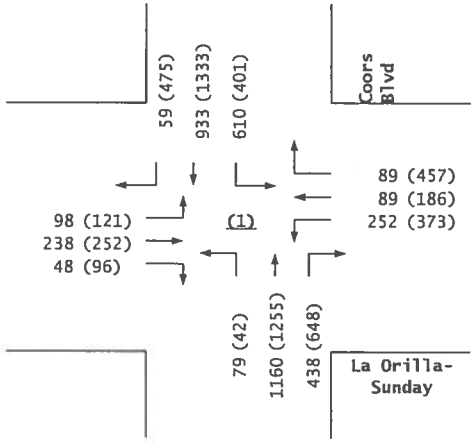
2023
NO BUILD



Trips



2023
BUILD



La Orilla-Sunday / Coors Blvd

Sagebrush Church Access

Projected Turning Movements Worksheet

North Drive / Coors Blvd

INTERSECTION: E-W Street: **North Drive** (2)

N-S Street: **Coors Blvd**

Year of Existing Counts: 2012

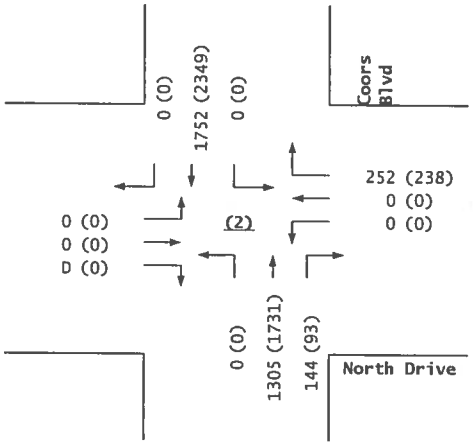
Horizon Year: **2023**

Growth Rates	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	0.00%	3.17%	1.50%	1.50%	3.17%	0.00%
	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
9:45 AM Service	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Subtotal (9:45 AM Service)	*0*	*0*	*0*	*0*	*0*	*252*	*0*	*1,305*	*144*	*0*	*1,752*	*0*
Adjustment for SB left-in (N.Drive)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*150*	*-150*	*0*
9:45 AM Service w/left-in (N.Drive)	0	0	0	0	0	252	0	1,305	144	150	1,602	0

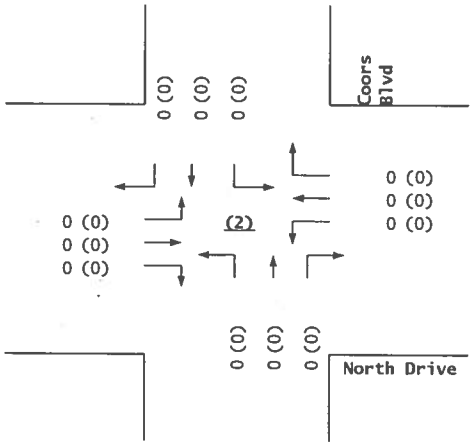
	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	0.00%	3.17%	1.50%	1.50%	3.17%	0.00%
	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
11:15 Service	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Subtotal (11:15 AM Service)	*0*	*0*	*0*	*0*	*0*	*238*	*0*	*1,731*	*93*	*0*	*2,349*	*0*
Adjustment for SB left-in (N.Drive)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*140*	*-140*	*0*
11:15 AM Service w/left-in (N.Drive)	0	0	0	0	0	238	0	1,731	93	140	2,209	0

	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)		
2012 AM Peak Hr. Volumes	0	0	0	0	0	216	0	1,044	124	0	1,388	0
2012 PM Peak Hr. Volumes	0	0	0	0	0	204	0	1,452	80	0	1,540	0

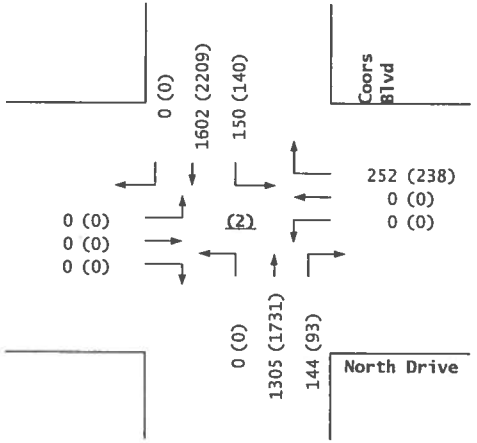
2023
NO BUILD



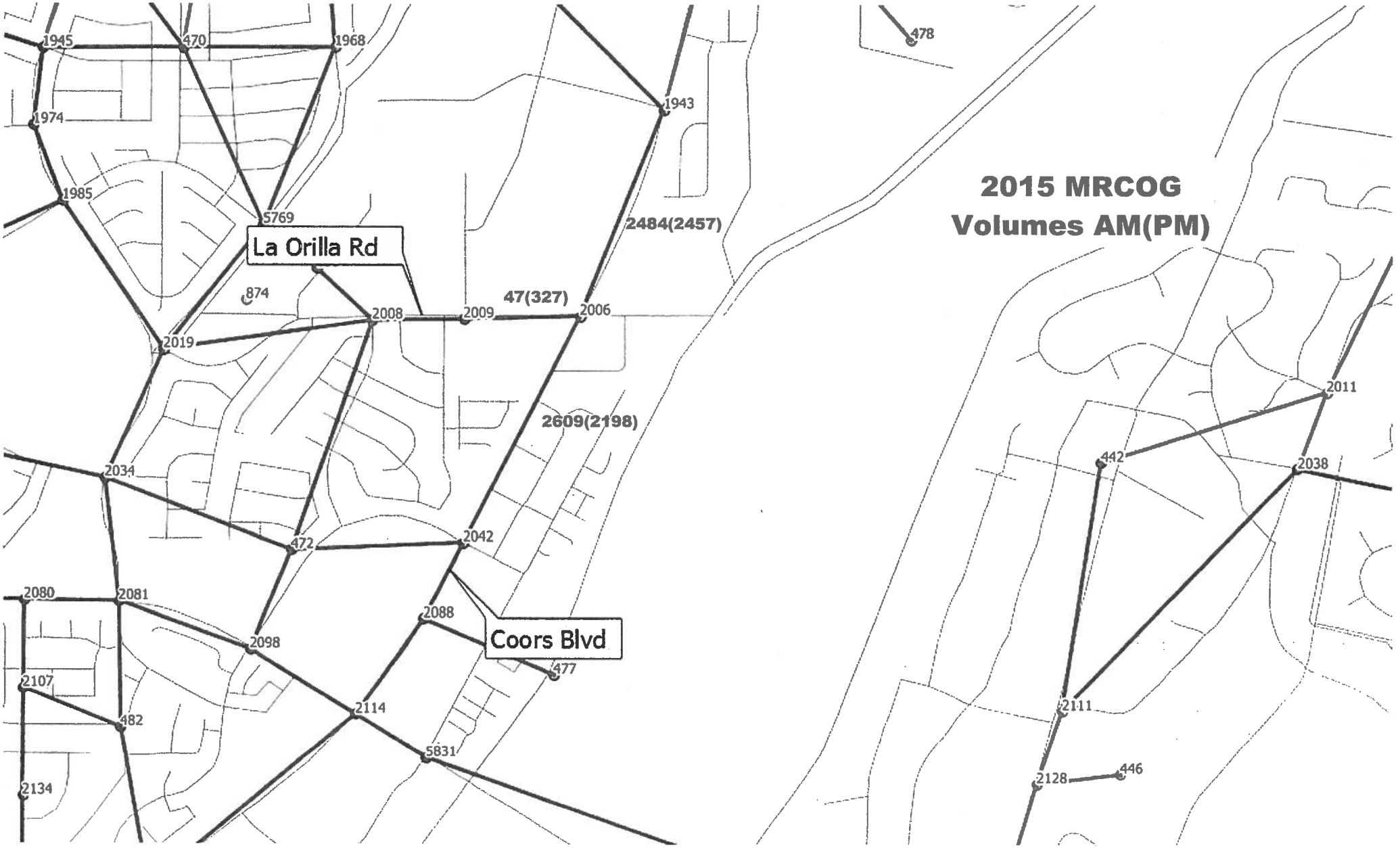
Trips

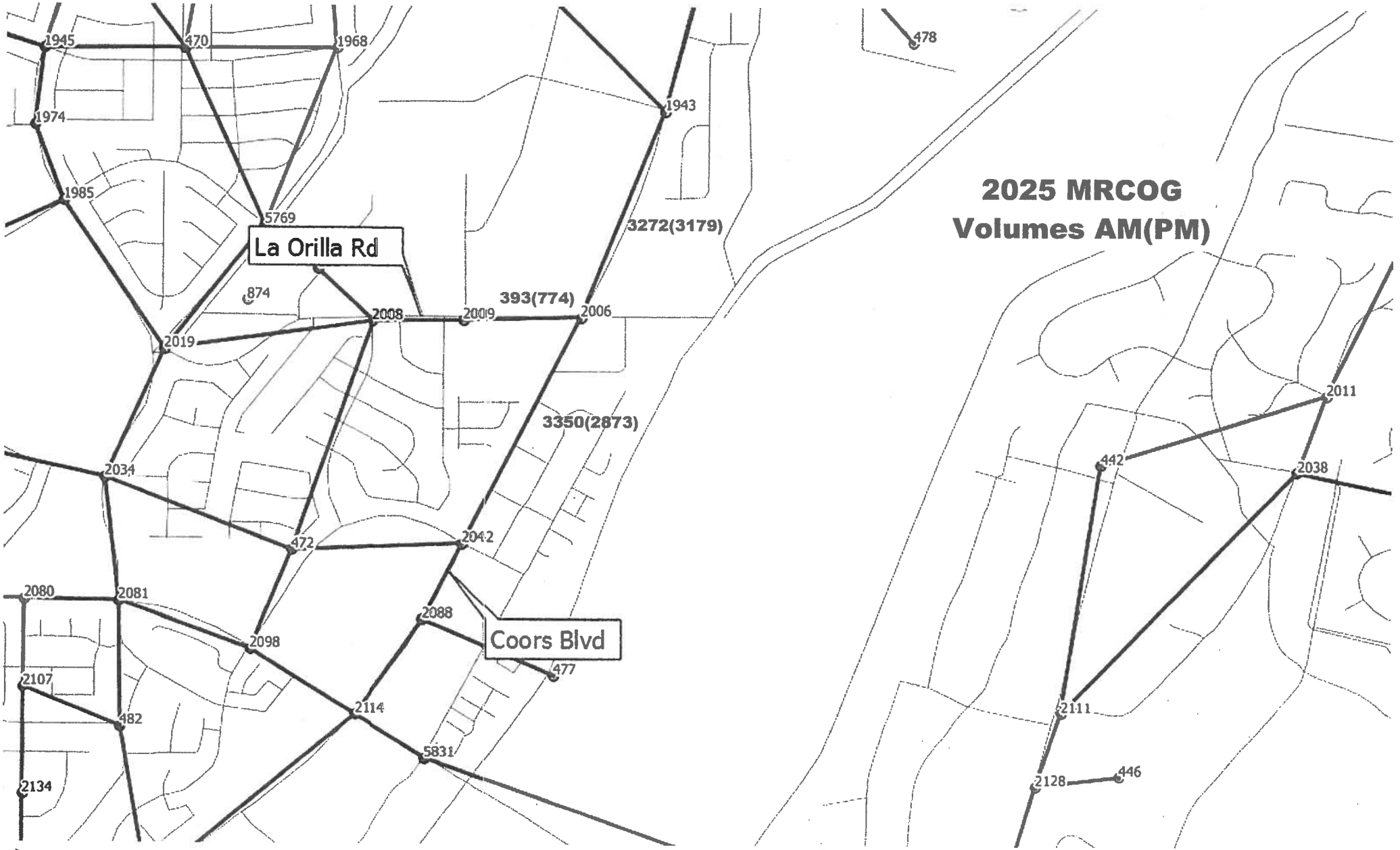


2023
BUILD



North Drive / Coors Blvd


2015 MRCOG
Volumes AM(PM)
1945
470
1968
1974
1985
5769
La Orilla Rd
874
2008
2009
47(327)
2006
2019
1943
2484(2457)
2609(2198)
2034
472
2042
2080
2081
2088
Coors Blvd
2098
477
2107
482
2114
5831
2134
478
2011
442
2038
2111
2128
446


2025 MRCOG
Volumes AM(PM)
1945
470
1968
1974
1985
5769
La Orilla Rd
874
2008
2009
393(774)
2006
1943
3272(3179)
2019
3350(2873)
2034
472
2042
2080
2081
2088
Coors Blvd
2098
477
2107
482
2114
5831
2134
478
2011
442
2038
2111
2128
446

9:45 AM Service Analysis

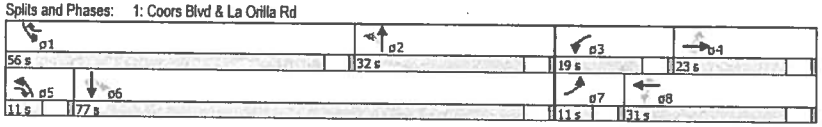
Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	204	36	216	76	76	60	884	376	652	692	44
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	7	4	5	3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0		10.0	21.0	21.0
Total Split (s)	11.0	23.0	11.0	19.0	31.0	56.0	11.0	32.0		56.0	77.0	77.0
Total Split (%)	8.5%	17.7%	8.5%	14.6%	23.8%	43.1%	8.5%	24.6%		43.1%	59.2%	59.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Max		Min	Max	Max
Act Effct Green (s)	24.0	18.0	29.0	37.0	26.0	82.0	33.0	27.0	130.0	83.0	72.0	72.0
Actuated g/C Ratio	0.18	0.14	0.22	0.28	0.20	0 63	0.25	0.21	1.00	0.64	0.55	0.55
v/c Ratio	0.38	0.94	0.09	1.04	0.24	0.09	0.34	1.00	0.28	1.03	0.29	0.06
Control Delay	42.6	98.5	0.4	107.5	45.8	2.3	24.8	78.0	0.4	73.8	15.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	98.5	0.4	107.5	45.8	2.3	24.8	78.0	0.4	73.8	15.8	0.1
LOS	D	F	A	F	D	A	C	E	A	E	B	A
Approach Delay		73.2			73.1			53.5			42.5	
Approach LOS		E			E			D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Natural Cycle: 120	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 53.0	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	84	204	36	216	76	76	60	884	376	652	692	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Cap, veh/h	301	255	289	255	369	929	267	1046	326	745	2789	868
Arrive On Green	0.05	0.14	0.00	0.11	0.20	0.20	0.05	0.21	0.00	0.39	0.55	0.55
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	5036	1568	1757	5036	1568
Grp Volume(v), veh/h	99	240	0	254	89	89	71	1040	0	767	814	52
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1679	1568	1757	1679	1568
Q Serve(g_s), s	6.0	16.8	0.0	14.0	5.3	3.2	4.1	26.8	0.0	51.0	11.2	2.0
Cycle Q Clear(g_c), s	6.0	16.8	0.0	14.0	5.3	3.2	4.1	26.8	0.0	51.0	11.2	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	301	255	289	255	369	929	267	1046	326	745	2789	868
V/C Ratio(X)	0.33	0.94	0.00	0.99	0.24	0.10	0.27	0.99	0.00	1.03	0.29	0.06
Avail Cap(c_a), veh/h	301	255	289	255	369	929	267	1046	326	745	2789	868
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	55.5	0.0	38.9	43.7	11.5	37.7	51.4	0.0	37.2	15.4	13.4
Incr Delay (d2), s/veh	0.6	40.1	0.0	54.7	0.3	0.0	0.5	26.5	0.0	40.6	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.9	10.8	0.0	10.4	2.5	1.2	1.9	14.1	0.0	22.3	4.6	0.8
Lane Grp Delay (d), s/veh	46.4	95.6	0.0	93.6	44.0	11.5	38.2	77.9	0.0	77.8	15.7	13.5
Lane Grp LOS	D	F		F	D	B	D	E		F	B	B
Approach Vol, veh/h		339			432			1111			1633	
Approach Delay, s/veh		81.2			66.5			75.4			44.8	
Approach LOS		F			E			E			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	11.0	23.0		19.0	31.0		11.0	32.0		56.0	77.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	6.0	18.0		14.0	26.0		6.0	27.0		51.0	72.0	
Max Q Clear Time (g_c+I1), s	8.0	18.8		16.0	7.3		6.1	28.8		53.0	13.2	
Green Ext Time (p_c), s	0.0	0.0		0.0	2.1		0.0	0.0		0.0	23.3	

Intersection Summary		
HCM 2010 Ctrl Delay	60.6	
HCM 2010 LOS	E	

Notes

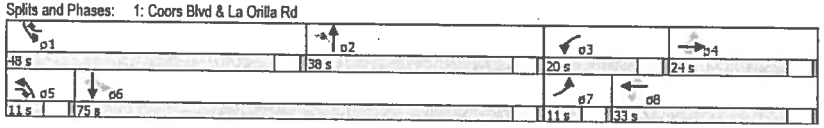
Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	204	36	216	76	76	60	884	376	503	692	44
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	7	4	5	3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0		10.0	21.0	21.0
Total Split (s)	11.0	24.0	11.0	20.0	33.0	48.0	11.0	38.0		48.0	75.0	75.0
Total Split (%)	8.5%	18.5%	8.5%	15.4%	25.4%	36.9%	8.5%	29.2%		36.9%	57.7%	57.7%
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	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Max		Min	Max	Max
Act Effct Green (s)	24.5	18.5	29.5	38.5	27.5	73.7	40.8	34.8	129.5	81.0	70.0	70.0
Actuated g/C Ratio	0.19	0.14	0.23	0.30	0.21	0.57	0.32	0.27	1.00	0.63	0.54	0.54
v/c Ratio	0.37	0.91	0.09	0.98	0.23	0.10	0.29	0.77	0.28	0.97	0.30	0.06
Control Delay	40.9	91.4	0.4	90.0	43.9	3.6	20.6	48.7	0.4	63.7	16.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	91.4	0.4	90.0	43.9	3.6	20.6	48.7	0.4	63.7	16.7	0.1
LOS	D	F	A	F	D	A	C	D	A	E	B	A
Approach Delay		68.3			62.7			33.7			35.2	
Approach LOS		E			E			C			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 129.5			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 41.0		Intersection LOS: D	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	84	204	36	216	76	76	60	884	376	503	692	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Cap, veh/h	309	266	294	278	395	786	319	1498	467	622	2727	849
Arrive On Green	0.05	0.14	0.00	0.12	0.21	0.21	0.04	0.30	0.00	0.29	0.54	0.54
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	5036	1568	1757	5036	1568
Grp Volume(v), veh/h	99	240	0	254	89	89	71	1040	0	592	814	52
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1679	1568	1757	1679	1568
Q Serve(g_s), s	8.0	16.5	0.0	14.3	5.2	3.9	3.6	23.6	0.0	33.8	11.4	2.0
Cycle Q Clear(g_c), s	6.0	16.5	0.0	14.3	5.2	3.9	3.6	23.6	0.0	33.8	11.4	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	266	294	278	395	786	319	1498	467	622	2727	849
V/C Ratio(X)	0.32	0.90	0.00	0.91	0.23	0.11	0.22	0.69	0.00	0.95	0.30	0.06
Avail Cap(c_a), veh/h	309	271	298	278	400	790	325	1498	467	702	2727	849
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	54.4	0.0	35.7	42.0	17.0	29.3	40.2	0.0	36.8	16.2	14.0
Incr Delay (d2), s/veh	0.6	30.2	0.0	32.3	0.3	0.1	0.3	2.7	0.0	21.6	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.9	10.2	0.0	11.0	2.5	1.5	1.6	10.5	0.0	14.4	4.8	0.8
Lane Grp Delay (d), s/veh	45.4	84.6	0.0	68.0	42.2	17.1	29.6	42.9	0.0	58.4	16.5	14.2
Lane Grp LOS	D	F		E	D	B	C	D		E	B	B
Approach Vol, veh/h		339			432			1111			1458	
Approach Delay, s/veh		73.1			52.2			42.0			33.4	
Approach LOS		E			D			D			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	11.0	23.7		20.0	32.7		10.6	43.5		42.1	75.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	6.0	19.0		15.0	28.0		6.0	33.0		43.0	70.0	
Max Q Clear Time (g_c+I1), s	8.0	18.5		16.3	7.2		5.6	25.6		35.6	13.4	
Green Ext Time (p_c), s	0.0	0.1		0.0	2.1		0.0	5.9		1.3	23.0	

Intersection Summary			
HCM 2010 Ctrl Delay		42.7	
HCM 2010 LOS		D	

Notes

Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	84	204	36	216	76	60	884	376	652	692	44
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	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	10.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	19.0	30.0	16.0	18.0	29.0	16.0	40.0	40.0	42.0	66.0	66.0
Total Split (%)	14.6%	23.1%	12.3%	13.8%	22.3%	12.3%	30.8%	30.8%	32.3%	50.8%	50.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	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)	11.5	20.4	34.8	12.4	21.3	9.4	38.6	38.6	32.1	61.2	61.2
Actuated g/C Ratio	0.09	0.17	0.28	0.10	0.17	0.08	0.31	0.31	0.26	0.50	0.50
v/c Ratio	0.61	0.79	0.08	0.74	0.55	0.53	0.66	0.64	0.87	0.33	0.06
Control Delay	70.9	68.6	0.3	68.7	45.1	71.2	40.9	17.9	55.3	20.0	0.1
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	70.9	68.6	0.3	68.7	45.1	71.2	40.9	17.9	55.3	20.0	0.1
LOS	E	E	A	E	D	E	D	B	E	B	A
Approach Delay		61.7			59.0		35.7			35.9	
Approach LOS		E			E		D			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 123.5			
Natural Cycle: 80			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 40.8		Intersection LOS: D	
Intersection Capacity Utilization 69.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd

HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	84	204	36	216	76	76	60	884	376	652	692	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	129	289	335	314	149	149	101	1645	512	863	2632	820
Arrive On Green	0.07	0.16	0.00	0.09	0.18	0.18	0.06	0.33	0.33	0.25	0.52	0.52
Sat Flow, veh/h	1757	1845	1568	3408	848	848	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	99	240	0	254	0	178	71	1040	442	767	814	52
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1695	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	6.5	14.7	0.0	8.5	0.0	11.3	4.6	20.5	30.9	25.3	10.7	1.9
Cycle Q Clear(g_c), s	6.5	14.7	0.0	8.5	0.0	11.3	4.6	20.5	30.9	25.3	10.7	1.9
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	289	335	314	0	297	101	1645	512	863	2632	820
V/C Ratio(X)	0.77	0.83	0.00	0.81	0.00	0.60	0.71	0.63	0.86	0.89	0.31	0.06
Avail Cap(c_a), veh/h	211	395	426	380	0	349	166	1645	512	1080	2632	820
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	47.7	0.0	52.0	0.0	44.3	54.1	33.3	36.9	42.0	15.9	13.8
Incr Delay (d2), s/veh	9.2	10.3	0.0	10.4	0.0	2.1	8.7	1.9	17.3	7.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.3	7.8	0.0	4.2	0.0	5.1	2.4	9.0	14.7	12.0	4.4	0.7
Lane Grp Delay (d), s/veh	62.4	58.0	0.0	62.4	0.0	46.4	62.8	35.2	54.2	49.8	16.2	13.9
Lane Grp LOS	E	E		E		D	E	D	D	D	B	B
Approach Vol, veh/h		339			432			1553			1633	
Approach Delay, s/veh		59.3			55.8			41.9			31.9	
Approach LOS		E			E			D			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	13.6	23.3		15.7	25.5		11.7	43.1		34.6	66.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	14.0	25.0		13.0	24.0		11.0	35.0		37.0	61.0	
Max Q Clear Time (g_c+I1), s	8.5	16.7		10.5	13.3		6.6	32.9		27.3	12.7	
Green Ext Time (p_c), s	0.1	1.6		0.2	1.8		0.0	2.0		2.3	25.9	

Intersection Summary			
HCM 2010 Ctrl Delay		40.8	
HCM 2010 LOS		D	

Notes

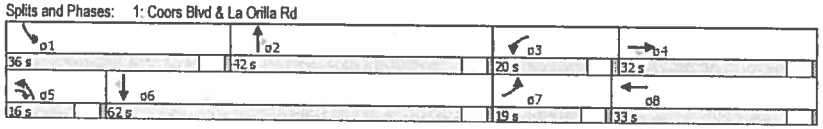
Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	84	204	36	216	76	60	884	376	503	692	44
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	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	10.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	19.0	32.0	16.0	20.0	33.0	16.0	42.0	42.0	36.0	62.0	62.0
Total Split (%)	14.6%	24.6%	12.3%	15.4%	25.4%	12.3%	32.3%	32.3%	27.7%	47.7%	47.7%
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	Lead	Lag	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)	11.4	20.4	34.8	13.3	22.3	9.4	41.2	41.2	25.5	57.3	57.3
Actuated g/C Ratio	0.09	0.17	0.29	0.11	0.19	0.08	0.34	0.34	0.21	0.48	0.48
v/c Ratio	0.60	0.77	0.08	0.68	0.52	0.52	0.60	0.58	0.82	0.34	0.07
Control Delay	68.9	64.7	0.3	82.3	41.3	69.5	36.5	12.3	56.2	21.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	64.7	0.3	82.3	41.3	69.5	36.5	12.3	56.2	21.3	0.2
LOS	E	E	A	E	D	E	D	B	E	C	A
Approach Delay		58.7			53.6		31.1			34.7	
Approach LOS		E			D		C			C	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 120.5			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 37.8		Intersection LOS: D	
Intersection Capacity Utilization 65.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	84	204	36	216	76	76	60	884	376	503	692	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	130	295	342	321	153	153	102	1843	574	685	2564	798
Arrive On Green	0.07	0.16	0.00	0.09	0.18	0.18	0.06	0.37	0.37	0.20	0.51	0.51
Sat Flow, veh/h	1757	1845	1568	3408	848	848	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	99	240	0	254	0	178	71	1040	442	592	814	52
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1695	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	6.2	14.1	0.0	8.2	0.0	10.8	4.4	18.5	27.9	18.8	10.6	1.9
Cycle Q Clear(g_c), s	6.2	14.1	0.0	8.2	0.0	10.8	4.4	18.5	27.9	18.8	10.6	1.9
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	295	342	321	0	305	102	1843	574	685	2564	798
V/C Ratio(X)	0.76	0.81	0.00	0.79	0.00	0.58	0.70	0.56	0.77	0.86	0.32	0.07
Avail Cap(c_a), veh/h	220	445	469	457	0	424	173	1843	574	944	2564	798
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	45.4	0.0	49.6	0.0	42.0	51.8	28.3	31.3	43.2	16.1	13.9
Incr Delay (d2), s/veh	8.8	6.8	0.0	6.1	0.0	1.8	8.3	1.3	9.6	6.3	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.1	7.3	0.0	3.9	0.0	4.8	2.3	7.9	12.5	8.8	4.4	0.7
Lane Grp Delay (d), s/veh	59.7	52.2	0.0	55.7	0.0	43.8	60.1	29.6	40.9	49.5	16.4	14.1
Lane Grp LOS	E	D		E		D	E	C	D	D	B	B
Approach Vol, veh/h		339			432			1553			1458	
Approach Delay, s/veh		54.4			50.8			34.2			29.8	
Approach LOS		D			D			C			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	13.3	22.9		15.5	25.2		11.5	46.0		27.5	62.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	14.0	27.0		15.0	28.0		11.0	37.0		31.0	57.0	
Max Q Clear Time (g_c+I1), s	8.2	16.1		10.2	12.8		6.4	29.9		20.8	12.6	
Green Ext Time (p_c), s	0.1	1.9		0.4	2.2		0.0	6.1		1.7	24.8	

Intersection Summary			
HCM 2010 Ctrl Delay		36.2	
HCM 2010 LOS		D	

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	98	238	48	252	89	79	1160	438	760	933	59
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	3	1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	5	2	3	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	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0
Total Split (s)	17.0	26.0	18.0	18.0	27.0	18.0	46.0	18.0	40.0	68.0	68.0
Total Split (%)	13.1%	20.0%	13.8%	13.8%	20.8%	13.8%	35.4%	13.8%	30.8%	52.3%	52.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Min	Min	Max	Max
Act Effct Green (s)	11.4	20.9	37.1	13.0	22.5	11.2	41.0	59.0	35.0	64.8	64.8
Actuated g/C Ratio	0.09	0.16	0.29	0.10	0.17	0.09	0.32	0.45	0.27	0.50	0.50
v/c Ratio	0.75	0.94	0.11	0.87	0.65	0.62	0.86	0.67	0.98	0.44	0.08
Control Delay	86.4	93.4	1.0	82.6	52.7	74.7	48.3	27.1	71.6	21.8	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.4	93.4	1.0	82.6	52.7	74.7	48.3	27.1	71.6	21.8	1.4
LOS	F	F	A	F	D	E	D	C	E	C	A
Approach Delay		80.2			70.2		44.0			42.7	
Approach LOS		F			E		D			D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 129.9
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 49.4 — Intersection LOS: D
Intersection Capacity Utilization 80.5% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & La Orilla Rd

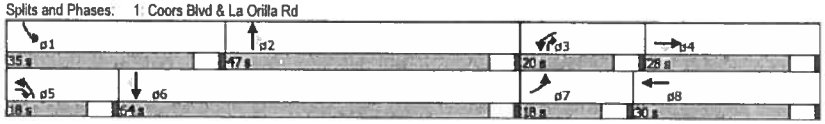
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	98	238	48	252	89	89	79	1160	438	760	933	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	190.0	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	141	298	360	341	154	154	119	1745	651	918	2859	810
Arrive On Green	0.08	0.16	0.16	0.10	0.18	0.18	0.07	0.32	0.32	0.27	0.52	0.52
Sat Flow, veh/h	1757	1845	1568	3408	848	848	1757	5534	1568	3408	5534	1568
Grp Volume(v), veh/h	115	280	56	296	0	210	93	1365	515	894	1098	69
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1695	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	8.4	19.5	3.7	11.1	0.0	15.0	6.8	29.1	37.2	33.8	15.6	2.9
Cycle Q Clear(g_c), s	8.4	19.5	3.7	11.1	0.0	15.0	6.8	29.1	37.2	33.8	15.6	2.9
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	298	360	341	0	308	119	1745	651	918	2859	810
V/C Ratio(X)	0.82	0.94	0.16	0.87	0.00	0.68	0.78	0.78	0.79	0.97	0.38	0.09
Avail Cap(c_a), veh/h	162	298	360	341	0	308	176	1745	651	918	2859	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.9	53.9	40.0	57.7	0.0	49.7	59.6	40.4	33.1	47.1	18.9	15.9
Incr Delay (d2), s/veh	24.0	36.4	0.2	20.5	0.0	6.1	12.4	3.6	9.5	23.5	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	4.8	12.3	1.5	5.9	0.0	7.2	3.5	14.2	16.3	17.8	7.1	1.1
Lane Grp Delay (d), s/veh	82.9	90.3	40.2	78.2	0.0	55.8	72.0	44.0	42.6	70.6	19.3	16.1
Lane Grp LOS	F	F	D	E		E	E	D	D	E	B	B
Approach Vol, veh/h		451			506			1973			2061	
Approach Delay, s/veh		82.2			68.9			45.0			41.5	
Approach LOS		F			E			D			D	
Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.4	26.0		18.0	28.6		13.8	46.0		40.0	72.2	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	12.0	21.0		13.0	22.0		13.0	41.0		35.0	63.0	
Max Q Clear Time (g_c+I1), s	10.4	21.5		13.1	17.0		8.8	39.2		35.8	17.6	
Green Ext Time (p_c), s	0.0	0.0		0.0	1.4		0.1	1.8		0.0	34.6	
Intersection Summary												
HCM 2010 Ctrl Delay			49.3									
HCM 2010 LOS			D									
Notes												

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	98	238	48	252	89	79	1160	438	610	933	59
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	3	1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	5	2	3	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	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0
Total Split (s)	18.0	28.0	18.0	20.0	30.0	18.0	47.0	20.0	35.0	64.0	64.0
Total Split (%)	13.8%	21.5%	13.8%	15.4%	23.1%	13.8%	36.2%	15.4%	26.9%	49.2%	49.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Min	Min	Max	Max
Act Effct Green (s)	11.8	21.8	37.9	14.3	24.4	11.1	42.1	61.4	29.0	60.0	60.0
Actuated g/C Ratio	0.09	0.17	0.30	0.11	0.19	0.09	0.33	0.48	0.23	0.47	0.47
v/c Ratio	0.71	0.89	0.10	0.77	0.59	0.61	0.82	0.64	0.93	0.46	0.09
Control Delay	80.0	80.5	0.9	69.8	47.3	73.8	44.6	24.0	67.3	24.1	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	80.5	0.9	69.8	47.3	73.8	44.6	24.0	67.3	24.1	1.6
LOS	E	F	A	E	D	E	D	C	E	C	A
Approach Delay		70.5			60.5		40.6			39.7	
Approach LOS		E			E		D			D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 127.3
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 45.1 — Intersection LOS: D
Intersection Capacity Utilization 76.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & La Orilla Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	98	238	48	252	89	89	79	1160	438	610	933	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	190.0	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	142	315	376	352	164	164	121	1865	691	778	2748	779
Arrive On Green	0.08	0.17	0.17	0.10	0.19	0.19	0.07	0.34	0.34	0.23	0.50	0.50
Sat Flow, veh/h	1757	1845	1568	3408	848	848	1757	5534	1568	3408	5534	1568
Grp Volume(v), veh/h	115	280	56	296	0	210	93	1365	515	718	1098	69
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1695	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	8.0	18.5	3.5	10.6	0.0	14.2	6.5	27.0	34.1	25.7	15.5	2.9
Cycle Q Clear(g_c), s	8.0	18.5	3.5	10.6	0.0	14.2	6.5	27.0	34.1	25.7	15.5	2.9
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	315	376	352	0	328	121	1865	691	778	2748	779
V/C Ratio(X)	0.81	0.89	0.15	0.84	0.00	0.64	0.77	0.73	0.75	0.92	0.40	0.09
Avail Cap(c_a), veh/h	183	341	397	410	0	340	183	1865	691	821	2748	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	50.5	37.4	54.8	0.0	46.3	57.1	36.3	29.0	47.0	19.7	16.5
Incr Delay (d2), s/veh	18.3	22.6	0.2	12.8	0.0	3.8	10.4	2.6	7.2	15.5	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	4.4	10.8	1.4	5.3	0.0	6.6	3.3	13.1	14.6	13.0	7.1	1.1
Lane Grp Delay (d), s/veh	74.6	73.1	37.5	67.7	0.0	50.1	57.4	38.9	36.2	62.5	20.1	16.7
Lane Grp LOS	E	E	D	E		D	E	D	D	E	C	B
Approach Vol, veh/h		451			506			1973			1885	
Approach Delay, s/veh		69.1			60.4			39.6			36.1	
Approach LOS		E			E			D			D	
Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.1	26.3		17.9	29.1		13.6	47.0		33.4	66.9	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	13.0	23.0		15.0	25.0		13.0	42.0		30.0	59.0	
Max Q Clear Time (g_c+I1), s	10.0	20.5		12.6	16.2		8.5	36.1		27.7	17.5	
Green Ext Time (p_c), s	0.1	0.8		0.3	2.1		0.1	5.6		0.8	32.2	
Intersection Summary												
HCM 2010 Ctrl Delay			43.2									
HCM 2010 LOS			D									
Notes												

Intersection	
Intersection Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	216	1044	124	150	1238
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	250	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	254	1228	146	176	1456

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2164	614	0	0	1228	0
Stage 1	1228	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Follow-up Headway	4	4	-	-	3	-
Pot Capacity-1 Maneuver	75	371	-	-	301	-
Stage 1	174	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	31	371	-	-	301	-
Mov Capacity-2 Maneuver	31	-	-	-	-	-
Stage 1	174	-	-	-	-	-
Stage 2	127	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33	0	4

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	371	301	-
HCM Lane V/C Ratio	-	-	0.685	0.586	-
HCM Control Delay (s)	-	-	33.3	32.596	-
HCM Lane LOS			D	D	
HCM 95th %tile Q(veh)	-	-	4.887	3.475	-

Notes

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

Intersection	
Intersection Delay, s/veh	10

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	252	1305	144	150	1602
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	250	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	296	1535	169	176	1885

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2642	768	0	0	1535	0
Stage 1	1535	-	-	-	-	-
Stage 2	1107	-	-	-	-	-
Follow-up Headway	4	4	-	-	3	-
Pot Capacity-1 Maneuver	41	# 294	-	-	212	-
Stage 1	111	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	41	# 294	-	-	212	-
Mov Capacity-2 Maneuver	41	-	-	-	-	-
Stage 1	111	-	-	-	-	-
Stage 2	248	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	94	0	6

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	294	212	-
HCM Lane V/C Ratio	-	-	1.008	0.832	-
HCM Control Delay (s)	-	-	93.7	72.493	0
HCM Lane LOS			F	F	A
HCM 95th %tile Q(veh)	-	-	10.7	6.212	-

Notes

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

11:15 AM Service Analysis

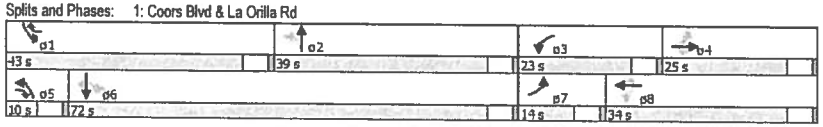
Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	216	72	240	160	392	32	956	556	464	988	88
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	7	4	5	3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0		10.0	21.0	21.0
Total Split (s)	14.0	25.0	10.0	23.0	34.0	43.0	10.0	39.0		43.0	72.0	72.0
Total Split (%)	10.8%	19.2%	7.7%	17.7%	26.2%	33.1%	7.7%	30.0%		33.1%	55.4%	55.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	Min
Act Effct Green (s)	28.1	19.4	29.4	42.4	28.7	70.6	38.1	33.1	127.5	75.1	65.1	65.1
Actuated g/C Ratio	0.22	0.15	0.23	0.33	0.23	0.55	0.30	0.26	1.00	0.59	0.51	0.51
v/c Ratio	0.41	0.91	0.18	0.92	0.45	0.51	0.21	0.86	0.42	0.97	0.45	0.12
Control Delay	37.1	88.3	1.2	71.8	47.4	16.0	20.3	52.9	0.8	65.9	20.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	88.3	1.2	71.8	47.4	16.0	20.3	52.9	0.8	65.9	20.5	1.2
LOS	D	F	A	E	D	B	C	D	A	E	C	A
Approach Delay		58.7			39.2			33.5			33.1	
Approach LOS		E			D			C			C	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 127.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 36.7		Intersection LOS: D	
Intersection Capacity Utilization 85.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	216	72	240	160	392	32	956	556	464	988	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Cap, veh/h	289	298	315	326	416	790	242	1340	417	573	2539	791
Arrive On Green	0.07	0.16	0.00	0.14	0.23	0.23	0.04	0.27	0.00	0.28	0.50	0.50
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	5036	1568	1757	5036	1568
Grp Volume(v), veh/h	122	254	0	282	188	461	38	1125	0	546	1162	104
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1679	1568	1757	1679	1568
Q Serve(g_s), s	7.2	16.9	0.0	15.0	11.1	26.0	1.9	26.8	0.0	32.2	18.7	4.4
Cycle Q Clear(g_c), s	7.2	16.9	0.0	15.0	11.1	26.0	1.9	26.6	0.0	32.2	18.7	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	298	315	326	416	790	242	1340	417	573	2539	791
V/C Ratio(X)	0.42	0.85	0.00	0.86	0.45	0.58	0.16	0.84	0.00	0.95	0.46	0.13
Avail Cap(c_a), veh/h	289	298	315	339	425	797	242	1360	424	615	2681	835
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	51.3	0.0	32.6	42.0	22.0	31.0	43.6	0.0	37.9	20.1	16.6
Incr Delay (d2), s/veh	1.0	20.6	0.0	19.6	0.8	1.1	0.3	4.8	0.0	24.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.3	9.7	0.0	11.0	5.4	10.3	0.9	12.1	0.0	21.8	7.8	1.7
Lane Grp Delay (d), s/veh	40.8	71.9	0.0	52.2	42.8	23.0	31.3	48.5	0.0	62.4	20.2	16.6
Lane Grp LOS	D	E		D	D	C	C	D		E	C	B
Approach Vol, veh/h		376			931			1163			1812	
Approach Delay, s/veh		61.8			35.9			47.9			32.7	
Approach LOS		E			D			D			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	14.0	25.3		22.1	33.4		10.0	38.5		40.0	68.5	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	9.0	20.0		18.0	29.0		5.0	34.0		38.0	67.0	
Max Q Clear Time (g_c+I1), s	9.2	18.9		17.0	28.0		3.9	28.8		34.2	20.7	
Green Ext Time (p_c), s	0.0	0.6		0.1	0.4		0.0	4.9		0.8	28.8	

Intersection Summary		
HCM 2010 Ctrl Delay	40.1	
HCM 2010 LOS	D	

Notes

Timings
1: Coors Blvd & La Orilla Rd

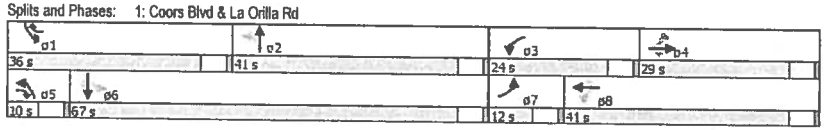
Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	216	72	240	160	392	32	956	556	324	988	88
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		6
Detector Phase	7	4	5	3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0		10.0	21.0	21.0
Total Split (s)	12.0	29.0	10.0	24.0	41.0	36.0	10.0	41.0		36.0	67.0	67.0
Total Split (%)	9.2%	22.3%	7.7%	18.5%	31.5%	27.7%	7.7%	31.5%		27.7%	51.5%	51.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Max		Min	Max	Max
Act Effct Green (s)	28.1	21.1	31.1	44.3	32.2	63.6	45.8	40.7	126.4	72.1	62.1	62.1
Actuated g/C Ratio	0.22	0.17	0.25	0.35	0.25	0.50	0.36	0.32	1.00	0.57	0.49	0.49
v/c Ratio	0.41	0.83	0.17	0.86	0.40	0.56	0.18	0.69	0.42	0.87	0.47	0.12
Control Delay	35.9	73.1	1.1	56.8	41.5	19.6	19.2	41.8	0.8	52.5	22.5	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	73.1	1.1	56.8	41.5	19.6	19.2	41.8	0.8	52.5	22.5	1.4
LOS	D	E	A	E	D	B	B	D	A	D	C	A
Approach Delay		50.0			35.3			26.6			28.1	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 126.4
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	216	72	240	160	392	32	956	556	324	988	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Cap, veh/h	294	354	362	354	493	652	266	1881	586	413	2435	758
Arrive On Green	0.05	0.19	0.00	0.13	0.27	0.27	0.04	0.37	0.00	0.15	0.48	0.48
Sat Flow, veh/h	1757	1845	1568	1757	1845	1568	1757	5036	1568	1757	5036	1568
Grp Volume(v), veh/h	122	254	0	282	188	461	38	1125	0	381	1162	104
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1568	1757	1679	1568	1757	1679	1568
Q Serve(g_s), s	7.0	16.5	0.0	14.4	10.7	31.2	1.7	23.1	0.0	16.1	19.9	4.7
Cycle Q Clear(g_c), s	7.0	16.5	0.0	14.4	10.7	31.2	1.7	23.1	0.0	16.1	19.9	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	354	362	354	493	652	266	1881	586	413	2435	758
V/C Ratio(X)	0.42	0.72	0.00	0.80	0.38	0.71	0.14	0.60	0.00	0.92	0.48	0.14
Avail Cap(c_a), veh/h	294	354	362	386	518	674	266	1881	586	576	2435	758
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	48.6	0.0	30.5	38.4	31.0	22.8	32.4	0.0	29.0	22.2	18.3
Incr Delay (d2), s/veh	0.9	6.8	0.0	10.4	0.5	3.3	0.2	1.4	0.0	16.5	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.3	8.6	0.0	7.8	5.1	12.9	0.7	10.1	0.0	7.9	8.4	1.9
Lane Grp Delay (d), s/veh	40.1	55.4	0.0	40.9	38.8	34.3	23.0	33.8	0.0	45.5	22.9	18.7
Lane Grp LOS	D	E		D	D	C	C	C		D	C	B
Approach Vol, veh/h		376			931			1163			1647	
Approach Delay, s/veh		50.4			37.2			33.5			27.9	
Approach LOS		D			D			C			C	

Timer

Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	12.0	29.6		21.6	39.2		10.0	52.9		24.1	67.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	7.0	24.0		19.0	36.0		5.0	36.0		31.0	62.0	
Max Q Clear Time (g_c+I1), s	9.0	18.5		16.4	33.2		3.7	25.1		18.1	21.9	
Green Ext Time (p_c), s	0.0	2.2		0.2	1.0		0.0	9.3		1.0	26.3	

Intersection Summary

HCM 2010 Ctrl Delay			33.6									
HCM 2010 LOS			C									

Notes

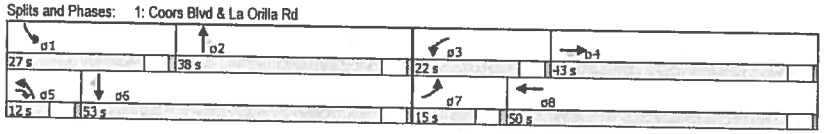
Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	104	216	72	240	160	32	956	556	464	988	88
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	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	10.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	15.0	43.0	12.0	22.0	50.0	12.0	38.0	38.0	27.0	53.0	53.0
Total Split (%)	11.5%	33.1%	9.2%	16.9%	38.5%	9.2%	29.2%	29.2%	20.8%	40.8%	40.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	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)	10.0	39.8	51.5	15.2	45.0	6.7	33.0	33.0	22.0	48.3	48.3
Actuated g/C Ratio	0.08	0.31	0.40	0.12	0.35	0.05	0.25	0.25	0.17	0.37	0.37
v/c Ratio	0.91	0.45	0.12	0.71	1.02	0.42	0.88	0.94	0.95	0.62	0.15
Control Delay	116.1	39.9	0.8	65.4	75.5	74.0	55.7	40.8	80.4	35.2	2.0
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	116.1	39.9	0.8	65.4	75.5	74.0	55.7	40.8	80.4	35.2	2.0
LOS	F	D	A	E	E	E	E	D	F	D	A
Approach Delay		52.9			72.5		50.7			46.9	
Approach LOS		D			E		D			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Natural Cycle: 100			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 53.6		Intersection LOS: D	
Intersection Capacity Utilization 86.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/16/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	216	72	240	160	392	32	958	556	464	988	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	135	597	567	340	164	403	68	1278	398	577	1937	603
Arrive On Green	0.08	0.32	0.00	0.10	0.35	0.35	0.04	0.25	0.25	0.17	0.38	0.38
Sat Flow, veh/h	1757	1845	1568	3408	475	1164	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	122	254	0	282	0	849	38	1125	654	548	1162	104
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1639	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	9.0	14.0	0.0	10.6	0.0	45.0	2.8	27.9	33.0	20.6	24.0	5.7
Cycle Q Clear(g_c), s	9.0	14.0	0.0	10.6	0.0	45.0	2.8	27.9	33.0	20.6	24.0	5.7
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	597	567	340	0	567	68	1278	398	577	1937	603
V/C Ratio(X)	0.90	0.43	0.00	0.83	0.00	1.14	0.56	0.88	1.64	0.95	0.60	0.17
Avail Cap(c_a), veh/h	135	597	567	446	0	567	95	1278	398	577	1937	603
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	34.5	0.0	57.4	0.0	42.5	61.4	46.6	48.5	53.4	32.0	26.4
Incr Delay (d2), s/veh	49.3	0.5	0.0	9.7	0.0	84.1	7.1	8.9	300.5	24.9	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	6.0	6.6	0.0	5.2	0.0	32.0	1.4	13.0	46.5	11.1	10.4	2.4
Lane Grp Delay (d), s/veh	108.8	35.0	0.0	67.2	0.0	126.6	68.6	55.5	349.0	78.3	33.4	27.0
Lane Grp LOS	F	C		E		F	E	E	F	E	C	C
Approach Vol, veh/h		376			931			1817			1812	
Approach Delay, s/veh		58.9			108.6			161.4			46.6	
Approach LOS		E			F			F			D	
Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.0	47.0		18.0	50.0		10.0	38.0		27.0	55.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	38.0		17.0	45.0		7.0	33.0		22.0	48.0	
Max Q Clear Time (g_c+I1), s	11.0	16.0		12.6	47.0		4.8	35.0		22.8	26.0	
Green Ext Time (p_c), s	0.0	6.7		0.4	0.0		0.0	0.0		0.0	18.8	

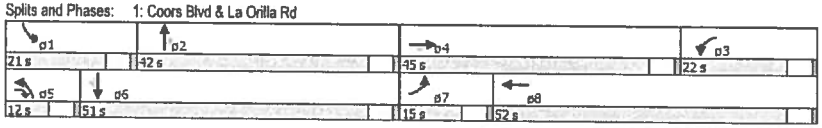
Intersection Summary			
HCM 2010 Ctrl Delay		101.5	
HCM 2010 LOS		F	

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	104	216	72	240	160	32	956	556	324	988	88
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	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	10.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	15.0	45.0	12.0	22.0	52.0	12.0	42.0	42.0	21.0	51.0	51.0
Total Split (%)	11.5%	34.6%	9.2%	16.9%	40.0%	9.2%	32.3%	32.3%	16.2%	39.2%	39.2%
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	Lead	Lead	Lag	Lag	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)	10.0	23.3	30.0	33.6	46.9	6.7	37.0	37.0	16.0	46.3	46.3
Actuated g/C Ratio	0.08	0.18	0.23	0.26	0.36	0.05	0.28	0.28	0.12	0.36	0.36
v/c Ratio	0.91	0.77	0.19	0.32	0.98	0.42	0.78	0.81	0.91	0.65	0.16
Control Delay	115.8	65.5	3.3	41.6	65.0	74.0	47.4	18.7	82.7	37.1	2.1
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	115.8	65.5	3.3	41.6	65.0	74.0	47.4	18.7	82.7	37.1	2.1
LOS	F	E	A	D	E	E	D	B	F	D	A
Approach Delay		67.3			57.9		37.7			45.4	
Approach LOS		E			E		D			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 129.9			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 47.0		Intersection LOS: D	
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	216	72	240	160	392	32	956	556	324	988	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	135	295	311	948	172	421	68	1433	446	419	1859	579
Arrive On Green	0.08	0.16	0.00	0.28	0.36	0.36	0.04	0.28	0.28	0.12	0.37	0.37
Sat Flow, veh/h	1757	1845	1568	3408	475	1164	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	122	254	0	282	0	849	38	1125	654	381	1162	104
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1639	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	9.0	17.4	0.0	8.5	0.0	47.0	2.8	26.8	18.6	14.3	24.8	5.8
Cycle Q Clear(g_c), s	9.0	17.4	0.0	8.5	0.0	47.0	2.8	26.8	18.6	14.3	24.6	5.8
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	295	311	948	0	593	68	1433	446	419	1859	579
V/C Ratio(X)	0.90	0.86	0.00	0.30	0.00	1.10	0.56	0.78	1.47	0.91	0.62	0.18
Avail Cap(c_a), veh/h	135	568	543	948	0	593	95	1433	446	419	1859	579
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	53.2	0.0	36.9	0.0	41.5	61.4	42.8	11.8	56.3	33.6	27.7
Incr Delay (d2), s/veh	49.3	7.2	0.0	0.2	0.0	65.6	7.1	4.4	221.5	23.3	1.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	6.0	9.0	0.0	3.7	0.0	30.4	1.4	12.0	34.3	7.7	10.7	2.4
Lane Grp Delay (d), s/veh	108.8	60.4	0.0	37.1	0.0	107.1	68.6	47.2	233.3	79.5	35.2	28.4
Lane Grp LOS	F	E		D		F	E	D	F	E	D	C
Approach Vol, veh/h		376			931			1817			1647	
Approach Delay, s/veh		76.1			85.9			114.6			45.0	
Approach LOS		E			F			F			D	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.0	25.8		41.2	52.0		10.0	42.0		21.0	53.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	40.0		17.0	47.0		7.0	37.0		16.0	46.0	
Max Q Clear Time (g_c+I1), s	11.0	19.4		10.5	49.0		4.8	28.8		16.3	26.8	
Green Ext Time (p_c), s	0.0	1.4		3.1	0.0		0.0	7.7		0.0	16.8	

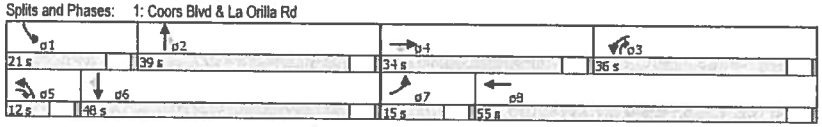
Intersection Summary			
HCM 2010 Ctrl Delay		82.0	
HCM 2010 LOS		F	

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	104	216	72	240	160	32	956	556	324	988	88
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	3	1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	5	2	3	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	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0
Total Split (s)	15.0	34.0	12.0	36.0	55.0	12.0	39.0	36.0	21.0	48.0	48.0
Total Split (%)	11.5%	26.2%	9.2%	27.7%	42.3%	9.2%	30.0%	27.7%	16.2%	36.9%	36.9%
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	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Min	Min	Max	Max
Act Effct Green (s)	10.0	22.4	29.0	34.7	47.0	6.7	34.1	68.7	15.9	43.2	43.2
Actuated g/C Ratio	0.08	0.18	0.23	0.27	0.37	0.05	0.27	0.54	0.13	0.34	0.34
v/c Ratio	0.88	0.78	0.19	0.30	0.96	0.41	0.83	0.70	0.90	0.68	0.17
Control Delay	109.9	66.9	3.3	38.7	57.9	73.3	50.7	13.3	79.8	38.9	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.9	66.9	3.3	38.7	57.9	73.3	50.7	13.3	79.8	38.9	2.3
LOS	F	E	A	D	E	E	D	B	E	D	A
Approach Delay		66.6			52.0		37.7			46.0	
Approach LOS		E			D		D			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 127			
Natural Cycle: 90			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 46.0		Intersection LOS: D	
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Coors Blvd & La Orilla Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	216	72	240	160	392	32	956	556	324	988	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	135	290	307	1037	183	448	68	1317	887	419	1743	543
Arrive On Green	0.08	0.18	0.00	0.30	0.38	0.38	0.04	0.26	0.26	0.12	0.35	0.35
Sat Flow, veh/h	1757	1845	1568	3408	475	1164	1757	5036	1568	3408	5036	1568
Grp Volume(v), veh/h	122	254	0	282	0	849	38	1125	654	381	1162	104
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1639	1757	1679	1568	1704	1679	1568
Q Serve(g_s), s	9.0	17.5	0.0	8.2	0.0	50.0	2.8	27.6	15.0	14.3	25.5	6.0
Cycle Q Clear(g_c), s	9.0	17.5	0.0	8.2	0.0	50.0	2.8	27.6	15.0	14.3	25.5	6.0
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	290	307	1037	0	630	68	1317	887	419	1743	543
V/C Ratio(X)	0.90	0.88	0.00	0.27	0.00	1.03	0.56	0.85	0.74	0.91	0.67	0.19
Avail Cap(c_a), veh/h	135	412	410	1037	0	630	95	1317	887	419	1743	543
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	53.5	0.0	34.3	0.0	40.0	61.4	45.6	7.2	56.3	36.1	29.8
Incr Delay (d2), s/veh	49.3	14.0	0.0	0.1	0.0	43.6	7.1	7.2	5.4	23.3	2.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	6.0	9.5	0.0	3.6	0.0	28.3	1.4	12.8	7.2	7.7	11.2	2.5
Lane Grp Delay (d), s/veh	108.8	67.6	0.0	34.4	0.0	83.6	68.6	52.9	12.6	79.5	38.2	30.5
Lane Grp LOS	F	E		C		F	E	D	B	E	D	C
Approach Vol, veh/h		376			931			1817			1647	
Approach Delay, s/veh		80.9			68.7			38.7			47.3	
Approach LOS		F			E			D			D	

Timer									
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.0	25.4		44.6	55.0		10.0	39.0		21.0	50.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	29.0		31.0	50.0		7.0	34.0		16.0	43.0	
Max Q Clear Time (g_c+I1), s	11.0	19.5		10.2	52.0		4.8	29.6		16.3	27.5	
Green Ext Time (p_c), s	0.0	0.9		6.0	0.0		0.0	4.2		0.0	13.8	

Intersection Summary		
HCM 2010 Ctrl Delay	50.8	
HCM 2010 LOS	D	

Notes

Timings
1: Coors Blvd & La Orilla Rd

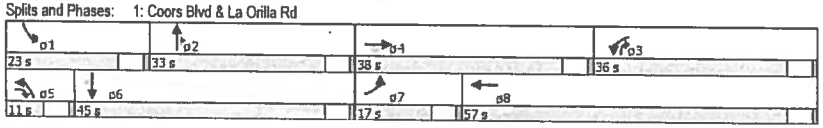
Terry O. Brown, P.E.
2/19/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	104	216	72	240	160	32	956	556	324	988	88
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	3	1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	5	2	3	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	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0
Total Split (s)	17.0	38.0	11.0	36.0	57.0	11.0	33.0	36.0	23.0	45.0	45.0
Total Split (%)	13.1%	29.2%	8.5%	27.7%	43.8%	8.5%	25.4%	27.7%	17.7%	34.6%	34.6%
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	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Min	Min	Max	Max
Act Effct Green (s)	11.4	22.3	28.3	35.7	46.7	5.9	29.2	64.9	17.0	40.2	40.2
Actuated g/C Ratio	0.09	0.18	0.23	0.29	0.38	0.05	0.23	0.52	0.14	0.32	0.32
v/c Ratio	0.76	0.77	0.20	0.29	0.94	0.46	0.76	0.71	0.82	0.71	0.17
Control Delay	85.7	64.2	3.3	36.2	53.8	78.1	49.3	12.9	68.3	40.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	64.2	3.3	36.2	53.8	78.1	49.3	12.9	68.3	40.9	2.5
LOS	F	E	A	D	D	E	D	B	E	D	A
Approach Delay		58.6			48.5		36.8			44.8	
Approach LOS		E			D		D			D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 124.3
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 43.8 Intersection LOS: D
Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
2/19/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	216	72	240	160	392	32	956	556	324	988	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	4	1	2	3	1
Cap, veh/h	148	294	311	1129	193	473	69	1427	872	436	1579	492
Arrive On Green	0.08	0.18	0.00	0.33	0.41	0.41	0.04	0.22	0.22	0.13	0.31	0.31
Sat Flow, veh/h	1757	1845	1568	3408	475	1164	1757	6346	1568	3408	5036	1568
Grp Volume(v), veh/h	122	254	0	282	0	849	38	1125	654	381	1162	104
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1639	1757	1586	1568	1704	1679	1568
Q Serve(g_s), s	8.7	17.1	0.0	7.7	0.0	49.6	2.7	21.3	15.2	14.0	26.3	6.2
Cycle Q Clear(g_c), s	8.7	17.1	0.0	7.7	0.0	49.6	2.7	21.3	15.2	14.0	26.3	6.2
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	294	311	1129	0	666	69	1427	872	436	1579	492
V/C Ratio(X)	0.82	0.87	0.00	0.25	0.00	0.97	0.55	0.79	0.75	0.87	0.74	0.21
Avail Cap(c_a), veh/h	165	477	467	1129	0	668	83	1427	872	481	1579	492
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	52.3	0.0	31.1	0.0	37.2	60.2	46.6	7.4	54.6	39.1	32.2
Incr Delay (d2), s/veh	25.4	9.1	0.0	0.1	0.0	28.5	6.7	4.5	5.9	15.3	3.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	5.0	9.0	0.0	3.4	0.0	25.8	1.4	9.1	6.9	7.2	11.7	2.6
Lane Grp Delay (d), s/veh	82.9	61.4	0.0	31.2	0.0	65.7	66.9	51.0	13.2	69.9	42.2	33.2
Lane Grp LOS	F	E		C		E	E	D	B	E	D	C
Approach Vol, veh/h		376			931			1817			1647	
Approach Delay, s/veh		68.4			55.3			37.8			48.0	
Approach LOS		E			E			D			D	
Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.8	25.3		47.3	56.8		10.0	33.7		21.3	45.0	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	12.0	33.0		31.0	52.0		6.0	28.0		18.0	40.0	
Max Q Clear Time (g_c+I1), s	10.7	19.1		9.7	51.6		4.7	23.3		16.0	28.3	
Green Ext Time (p_c), s	0.0	1.2		6.1	0.2		0.0	4.5		0.3	10.7	
Intersection Summary												
HCM 2010 Ctrl Delay			47.1									
HCM 2010 LOS			D									
Notes												

4.25a

Timings
1: Coors Blvd & La Orilla Rd

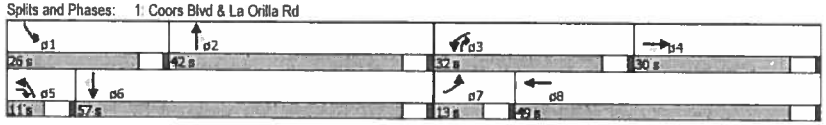
Terry O. Brown, P.E.
4/27/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	121	252	96	373	186	42	1255	648	541	1333	475
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	3	1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	5	2	3	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	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0
Total Split (s)	13.0	30.0	11.0	32.0	49.0	11.0	42.0	32.0	26.0	57.0	57.0
Total Split (%)	10.0%	23.1%	8.5%	24.6%	37.7%	8.5%	32.3%	24.6%	20.0%	43.8%	43.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Min	Min	Max	Max
Act Effct Green (s)	8.0	27.8	38.8	24.2	44.0	6.0	37.0	66.2	21.0	52.0	52.0
Actuated g/C Ratio	0.06	0.21	0.30	0.19	0.34	0.05	0.28	0.51	0.16	0.40	0.40
v/c Ratio	1.33	0.75	0.20	0.69	1.21	0.61	1.03	0.90	1.16	0.78	0.59
Control Delay	243.5	61.8	3.4	55.2	142.5	91.8	77.2	39.5	137.8	37.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	243.5	61.8	3.4	55.2	142.5	91.8	77.2	39.5	137.8	37.3	5.3
LOS	F	E	A	E	F	F	E	D	F	D	A
Approach Delay		96.7			110.4		65.0			54.0	
Approach LOS		F			F		E			D	

Intersection Summary

Cycle Length. 130
Actuated Cycle Length: 130
Natural Cycle. 130
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 71.1 — Intersection LOS: E
Intersection Capacity Utilization 100.9% — ICU Level of Service G
Analysis Period (mn) 15

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
4/27/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	121	252	96	373	186	457	42	1255	648	541	1333	475
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	190.0	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	108	462	460	510	160	394	75	1575	681	551	2232	632
Arrive On Green	0.06	0.25	0.25	0.15	0.34	0.34	0.04	0.28	0.28	0.16	0.40	0.40
Sat Flow, veh/h	1757	1845	1568	3408	474	1165	1757	5534	1568	3408	5534	1568
Grp Volume(v), veh/h	142	296	113	439	0	757	49	1476	762	636	1568	559
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1639	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	8.0	18.6	7.1	16.3	0.0	44.0	3.6	33.8	37.0	21.0	30.7	43.0
Cycle Q Clear(g_c), s	8.0	18.6	7.1	16.3	0.0	44.0	3.6	33.8	37.0	21.0	30.7	43.0
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	462	460	510	0	555	75	1575	681	551	2232	632
V/C Ratio(X)	1.31	0.64	0.25	0.86	0.00	1.36	0.65	0.94	1.12	1.16	0.70	0.88
Avail Cap(c_a), veh/h	108	462	460	708	0	555	81	1575	681	551	2232	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.0	43.5	35.0	54.0	0.0	43.0	61.3	45.4	36.8	54.5	32.3	36.0
Incr Delay (d2), s/veh	192.2	3.0	0.3	7.9	0.0	175.4	15.4	12.0	72.1	88.9	1.9	16.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	9.4	9.3	2.9	7.8	0.0	45.4	2.0	17.7	35.9	16.1	14.8	19.9
Lane Grp Delay (d), s/veh	253.2	46.5	35.3	61.8	0.0	218.4	76.6	57.3	108.9	143.4	34.2	52.5
Lane Grp LOS	F	D	D	E		F	E	E	F	F	C	D
Approach Vol, veh/h		551			1196			2287			2763	
Approach Delay, s/veh		97.5			160.9			74.9			63.0	
Approach LOS		F			F			E			E	
Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	13.0	37.6		24.4	49.0		10.6	42.0		26.0	57.4	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	8.0	25.0		27.0	44.0		6.0	37.0		21.0	52.0	
Max Q Clear Time (g_c+I1), s	10.0	20.6		18.3	46.0		5.6	39.0		23.0	45.0	
Green Ext Time (p_c), s	0.0	2.8		1.1	0.0		0.0	0.0		0.0	6.9	
Intersection Summary												
HCM 2010 Ctrl Delay			87.0									
HCM 2010 LOS			F									
Notes												

Timings
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
4/27/2013

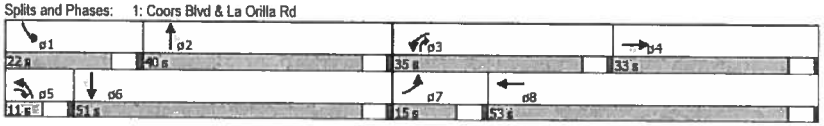
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	121	252	96	373	186	42	1255	648	401	1333	475
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	3	1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	5	3	8	5	2	3	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	10.0	21.0	10.0	21.0	10.0	10.0	21.0	21.0
Total Split (s)	15.0	33.0	11.0	35.0	53.0	11.0	40.0	35.0	22.0	51.0	51.0
Total Split (%)	11.5%	25.4%	8.5%	26.9%	40.8%	8.5%	30.8%	26.9%	16.9%	39.2%	39.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Min	Min	Max	Max
Act Effct Green (s)	10.0	32.0	43.0	26.0	48.0	6.0	35.0	66.0	17.0	46.0	46.0
Actuated g/C Ratio	0.08	0.25	0.33	0.20	0.37	0.05	0.27	0.51	0.13	0.35	0.35
v/c Ratio	1.06	0.65	0.18	0.65	1.12	0.61	1.09	0.89	1.06	0.88	0.62
Control Delay	150.8	53.1	3.1	51.9	105.7	91.8	97.0	36.8	113.6	46.3	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	150.8	53.1	3.1	51.9	105.7	91.8	97.0	36.8	113.6	46.3	6.2
LOS	F	D	A	D	F	F	F	D	F	D	A
Approach Delay		68.0			85.9		76.9			49.9	
Approach LOS		E			F		E			D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Natural Cycle: 100
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 67.2
Intersection Capacity Utilization 96.9%
Analysis Period (min) 15

Intersection LOS: E
ICU Level of Service F

Splits and Phases: 1: Coors Blvd & La Orilla Rd



HCM 2010 Signalized Intersection Summary
1: Coors Blvd & La Orilla Rd

Terry O. Brown, P.E.
4/27/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	121	252	96	373	186	457	42	1255	648	401	1333	475
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	184.5	184.5	184.5	184.5	184.5	190.0	184.5	184.5	184.5	184.5	184.5	184.5
Lanes	1	1	1	2	1	0	1	3	1	2	3	1
Cap, veh/h	135	545	530	514	175	430	75	1490	659	446	1976	560
Arrive On Green	0.08	0.30	0.30	0.15	0.37	0.37	0.04	0.27	0.27	0.13	0.36	0.36
Sat Flow, veh/h	1757	1845	1568	3408	474	1165	1757	5534	1568	3408	5534	1568
Grp Volume(v), veh/h	142	296	113	439	0	757	49	1476	762	472	1568	559
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1704	0	1639	1757	1845	1568	1704	1845	1568
Q Serve(g_s), s	10.0	17.5	6.7	16.3	0.0	48.0	3.6	34.6	35.0	17.0	33.0	46.3
Cycle Q Clear(g_c), s	10.0	17.5	6.7	16.3	0.0	48.0	3.6	34.6	35.0	17.0	33.0	46.3
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	545	530	514	0	605	75	1490	659	446	1976	560
V/C Ratio(X)	1.05	0.54	0.21	0.85	0.00	1.25	0.65	0.99	1.16	1.06	0.79	1.00
Avail Cap(c_a), veh/h	135	545	530	787	0	605	81	1490	659	446	1976	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.0	38.4	30.7	53.8	0.0	41.0	61.3	47.3	37.7	56.5	37.5	41.7
Incr Delay (d2), s/veh	91.6	1.1	0.2	5.8	0.0	126.1	15.4	21.2	87.0	59.1	3.4	37.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	8.0	8.5	2.7	7.7	0.0	41.0	2.0	19.3	37.4	11.1	16.2	24.3
Lane Grp Delay (d), s/veh	151.6	39.6	30.9	59.6	0.0	167.1	76.6	68.5	124.7	115.6	40.9	79.4
Lane Grp LOS	F	D	C	E		F	E	E	F	F	D	E
Approach Vol, veh/h		551			1196			2287			2599	
Approach Delay, s/veh		66.6			127.7			87.4			62.7	
Approach LOS		E			F			F			E	
Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	15.0	43.4		24.6	53.0		10.6	40.0		22.0	51.4	
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Max Green Setting (Gmax), s	10.0	28.0		30.0	48.0		6.0	35.0		17.0	46.0	
Max Q Clear Time (g_c+I1), s	12.0	19.5		18.3	50.0		5.6	37.0		19.0	48.3	
Green Ext Time (p_c), s	0.0	4.8		1.3	0.0		0.0	0.0		0.0	0.0	
Intersection Summary												
HCM 2010 Ctrl Delay			83.3									
HCM 2010 LOS			F									
Notes												

Intersection	
Intersection Delay, s/veh	8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	204	1452	80	140	1400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		250	0	
Median Width	0		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	1.00	0.85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	240	1708	94	140	1647
Number of Lanes	0	1	3	1	1	3

Major/Minor			Major 1		Major 2	
Conflicting Flow All	2647	854	0	0	1708	0
Stage 1	1708	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Follow-up Headway	3.83	3.93	-	-	3.13	-
Pot Capacity-1 Maneuver	41	258	-	-	174	-
Stage 1	87	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	8	258	-	-	174	-
Mov Capacity-2 Maneuver	8	-	-	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	60	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	81.3	0	6.2
HCM LOS	F	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	258	174	-
HCM Control Delay, s	-	-	81.3	78.802	-
HCM Lane V/C Ratio	-	-	0.93	0.81	-
HCM Lane LOS	-	-	F	F	-
HCM 95th-tile Q, veh	-	-	8.4	5.4	-

Notes

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

Intersection	
Intersection Delay, s/veh	144.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	238	1731	93	140	2209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	250	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	280	2036	109	165	2599

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3405	1018	0	0	2036	0
Stage 1	2036	-	-	-	-	-
Stage 2	1369	-	-	-	-	-
Follow-up Headway	4	4	-	-	3	-
Pot Capacity-1 Maneuver	15	# 200	-	-	# 118	-
Stage 1	53	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	15	# 200	-	-	# 118	-
Mov Capacity-2 Maneuver	15	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	178	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	252	0	246

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	200	# 118	-
HCM Lane V/C Ratio	-	-	1.4	1.396	-
HCM Control Delay (s)	-	-	252.4	289.169	243
HCM Lane LOS			F	F	F
HCM 95th %tile Q(veh)	-	-	16.402	11.303	-

Notes

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

Queueing Analysis Summary Sheet

Project: Sagebrush Church
Intersection: **La Orilla Rd. / Coors Blvd.**

2012

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
9:30 Service Queue	1	84	150	1	204	300	1	36	75
11:00 Service Queue	1	104	175	1	216	325	1	72	125
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
9:30 Service Queue	1	216	325	1	76	150	1	76	150
11:00 Service Queue	1	320	425	1	160	250	1	392	525
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
9:30 Service Queue	1	60	125	3	884	450	1	376	500
11:00 Service Queue	1	32	75	3	956	475	1	556	700
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
9:30 Service Queue	2	652	475	3	692	375	1	44	100
11:00 Service Queue	2	464	350	3	988	500	1	88	150

	AM	PM
Cycle Length:	130	130

NOTE: Queue lengths are in feet.

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **La Orilla Rd**
N-S Street: **Coors Blvd**

Speed Limit (La Orilla Rd)= **35** MPH
Speed Limit (Coors Blvd)= **55** MPH

15 min interval multiplied by 4

UNSIGNALIZED

Date of Count: 8/19/12 **Sunday service**

Begin Time	End Time	Eastbound (La Orilla Rd)			Westbound (La Orilla Rd)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
9:30 AM	9:45 AM	84	204	36	216	76	76	60	884	376	652	692	44	0	0	0	0
9:45 AM	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Peak Hour Volumes		**84**	**204**	**36**	**216**	**76**	**76**	**60**	**884**	**376**	**652**	**692**	**44**	**0**	**0**	**0**	**0**
% of Total Traffic		2.5%	6.0%	1.1%	6.4%	2.2%	2.2%	1.8%	26.0%	11.1%	19.2%	20.4%	1.3%	0.0%	0.0%	0.0%	0.0%
% Directional			9.5%			10.8%			38.8%			40.8%					
AM Peak Hour Factor			*0.25*			*0.25*			*0.25*			*0.25*					

Begin Time	End Time	Eastbound (La Orilla Rd)			Westbound (La Orilla Rd)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
11:00 AM	11:15 AM	104	216	72	320	160	392	32	956	556	464	988	352	0	0	0	0
11:15 AM	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Peak Hour Volumes		**104**	**216**	**72**	**320**	**160**	**392**	**32**	**956**	**556**	**464**	**988**	**352**	**0**	**0**	**0**	**0**
% of Total Traffic		2.3%	4.7%	1.6%	6.9%	3.5%	8.5%	0.7%	20.7%	12.1%	10.1%	21.4%	7.6%	0.0%	0.0%	0.0%	0.0%
% Directional			8.5%			18.9%			33.5%			39.1%					
PM Peak Hour Factor			*0.25*			*0.25*			*0.25*			*0.25*					

Traffic Count Data Sheet

Year Counts Taken: **2012**

E-W Street **North Drive**
N-S Street: **Coors Blvd**

Speed Limit (North Drive)= **25** MPH
Speed Limit (Coors Blvd)= **55** MPH

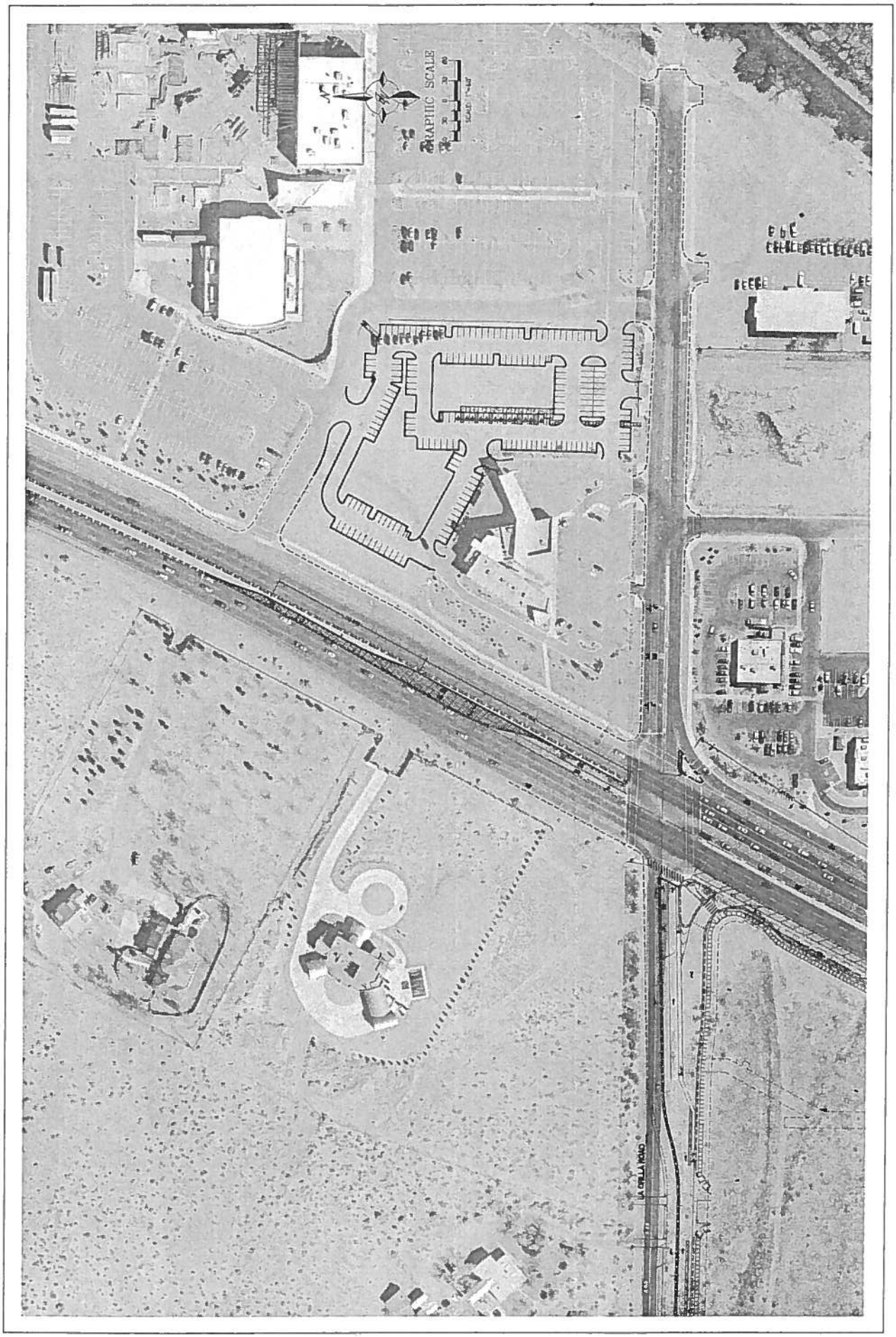
15 min interval multiplied by 4

UNSIGNALIZED

Date of Count: 8/19/12 **Sunday service**

Begin Time	End Time	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
9:30 AM	9:45 AM	0	0	0	0	0	216	0	1,044	124	0	1,388	0	0	0	0	3
9:45 AM	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Peak Hour Volumes		**0**	**0**	**0**	**0**	**0**	**216**	**0**	**1044**	**124**	**0**	**1388**	**0**	**0**	**0**	**0**	**3**
% of Total Traffic		0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	0.0%	37.7%	4.5%	0.0%	50.1%	0.0%	0.0%	0.0%	0.0%	0.1%
% Directional			0.0%			7.8%			42.1%			50.1%					
AM Peak Hour Factor			*#DIV/0!*			*0.25*			*0.25*			*0.25*					

Begin Time	End Time	Eastbound (North Drive)			Westbound (North Drive)			Northbound (Coors Blvd)			Southbound (Coors Blvd)			Pedestrians		Bicycles	
		L	T	R	L	T	R	L	T	R	L	T	R	E-W	N-S	E-W	N-S
11:00 AM	11:15 AM	0	0	0	0	0	204	0	1452	80	0	1540	0	0	0	0	1
11:15 AM	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Peak Hour Volumes		**0**	**0**	**0**	**0**	**0**	**204**	**0**	**1452**	**80**	**0**	**1540**	**0**	**0**	**0**	**0**	**1**
% of Total Traffic		0.0%	0.0%	0.0%	0.0%	0.0%	6.2%	0.0%	44.3%	2.4%	0.0%	47.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% Directional			0.0%			6.2%			46.8%			47.0%					
PM Peak Hour Factor			*#DIV/0!*			*0.25*			*0.25*			*0.25*					


GRAPHIC SCALE
LA ORILLA ROAD