

Terry O. Brown P.E.

Las Estancias Update
(Coors Blvd. South of Lamonica Dr.)

Update to the Traffic Impact Study

February 21, 2011

FINAL

FINAL

Signature

Date

Presented to:

Bernalillo County Public Works Dept.
New Mexico Department of Transportation
City of Albuquerque

Prepared for:

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Revised Scoping Report

**BERNALILLO COUNTY PUBLIC WORKS DIVISION
TRAFFIC IMPACT ANALYSIS UPDATE SCOPING STUDY**

Prepared by: Terry O Brown, P.E.

Date: July 11, 2010

Project Name: Las Estancias Development

Location: Coors Blvd. South of Lamonica Dr.

Zone Atlas Page: P-10-Z

(Zone Atlas Page w/property highlighted attached)

(Proposed Project Plan attached)

Proposed land use and development phasing:

A Traffic Impact Study for this project was conducted beginning in 2007 and finalized on June 30, 2008. The study was approved by the Bernalillo County Public Works Department and the New Mexico Department of Transportation, District 3 Office. Proposed land uses assumed in the 2008 Traffic Impact Study were various neighborhood commercial uses. This property is currently vacant.

The proposed uses assumed in the 2008 Traffic Impact Study which was started in early 2007 are listed as follows:

Shopping Center (Retail Commercial)	262,800 S.F.
Home Improvement Superstore	167,000 S.F.
Auto Parts Sales Store	7,500 S.F.
Medical / Healthcare	10,300 S.F.
Specialty Retail	24,000 S.F.
Pharmacy	16,500 S.F.
Fast Food Restaurant w/Drive-Thru	3,500 S.F.
Restaurant	23,100 S.F.
Bank w/Drive-In Windows	5,500 S.F.
Residential Component	28 Units

The specific uses were fluid at the time the 2008 Traffic Impact Study was started. Therefore, broad land use categories were utilized to classify a majority of the project. The total commercial building area in the 2008 Traffic Impact Study was 520,200 S.F.

During the approval process which took place in 2007 and 2008, various changes were made to the proposed site plan for the project and the site plan was refined for specific users. The changes and refinements reflected in the site plan associated with the approved use permit significantly reduced the calculated trip generation rate resulting from implementation of the plan. However, there was no update to the Traffic Impact Study to reflect the reduced number of trips. The land uses reflected in the final site plan from the approval process are demonstrated in the following table:

Department Store	82,500 S.F.
Apparel Store	56,300 S.F.
Pet Supply Store	12,300 S.F.
Office Supply Store	20,400 S.F.
Arts and Crafts Store	34,100 S.F.
Home Improvement Superstore	140,000 S.F.
Shopping Center	82,400 S.F.
Medical-Dental Office Building	11,200 S.F.
Bed and Linen Superstore	30,800 S.F.
Specialty Retail	6,200 S.F.
Pharmacy	16,500 S.F.
Fast Food Restaurant w/Drive-Thru	3,500 S.F.
High Turnover Sit-Down Restaurant	18,500 S.F.
Bank w/Drive-In Windows	5,500 S.F.
Residential Condo / Townhouses	25 D.U.'s

The approved Las Estancias Site Development Plan is attached.

Also, due to the current economic atmosphere in this area, alternates to the proposed land uses are being considered. The second land use proposal is somewhat of a change from the site plan that was approved with the use permit. However, all of these uses are allowed under the approved use permit. This land use concept also significantly reduces the calculated trip generation rate, similar to the specific land uses associated with the approved site plan. The land use table under this scenario is demonstrated in the following table:

Shopping Center	121,300 S.F.
Apparel Store	28,000 S.F.
Office Supply Store	21,000 S.F.
Pet Supply Store	21,000 S.F.
Specialty Retail	6,200 S.F.
Pharmacy	16,500 S.F.
Fast Food Restaurant w/Drive-Thru	3,500 S.F.
High Turnover Sit-Down Restaurant	18,000 S.F.
Bank w/Drive-In Windows	5,500 S.F.
Residential Condo / Townhouses	25 D.U.'s
Hospital	60,000 S.F.
Church	50,000 S.F.
Medical-Dental Office Building	27,200 S.F.
Junior / Community College	280 Students
General Office Building	21,000 S.F.

The proposed alternate conceptual Las Estancias Site Development Plan is attached.

Based on the significant reduction in the calculated number of trips generated by the project from the above land use scenarios, it is proposed that the Traffic Impact Study be updated to reflect a reduction in trip generation rates.

Proposed Roadway Access:

The project access is primarily via three proposed driveways on Coors Blvd. along the frontage of the property. The project is also accessed by existing and proposed driveways on Lamonica Dr. The Lamonica Dr. driveways are accessed from two intersections. The primary access to Lamonica Dr. is the existing intersection of Lamonica Dr. / Coors Blvd. A secondary access is via the intersection of Rio Bravo Blvd. / Loris Dr. Both Rio Bravo / Loris Dr. and Lamonica Dr. / Coors Blvd. are existing signalized intersections. There is a primary proposed access on Coors Blvd. near the south end of the development that is planned as a signalized intersection. That proposed signalized access point is approximately 2,250 feet south of Lamonica Dr. The other two proposed driveways accessing the development are planned as partial access driveways. They will be right-turn-in, right-turn-out driveways with possibly one being left-turn-in also, but only with full concurrence of the Bernalillo County Public Works Department and the New Mexico Department of Transportation.

Consistency with Area and Regional Transportation Plans:

Surrounding properties are a mix of residential and commercial uses. A relatively new Walmart Supercenter exists immediately to the north of this project. Associated with the Walmart development are a couple of retail pad sites. The existing Rio Bravo Square Shopping Center exists at the northwest corner of Rio Bravo / Coors. The approved site development plan for the Rio Bravo Square is approximately 110,000 S.F. of retail commercial floor space.

Rio Bravo Blvd. and Coors Blvd. are Limited Access Arterial Roadways on the Long Range Roadway Plan for the Albuquerque Metropolitan Area. Rio Bravo is designated as a "Smart Corridor" targeted to carry large volumes of traffic in the east-west direction connecting to I-25.

Previously Conducted Relevant Traffic Impact Studies in the Area:

Other previously submitted Traffic Impact Studies in the area include the Southwest Mesa Subdivisions TIS (including Ceja Vista), 50% of Anderson Heights, Rio Bravo Square, Rio Bravo Commons (Commercial Component), Neilson Industrial Park, Schwartzman's Development, Neilson Commercial Development, KAN Industrial Park, and Central / Coors Commercial Development. These traffic studies are at or beyond three years old and have not been updated recently. Many of these proposed land development projects are on hold due to the current worldwide economic environment. The 2008 Traffic Impact Study for the Las Estancias project considered an implantation year of 2012 at which time it was assumed in the study that 80% of Southwest Mesa Subdivision, all of the Rio Bravo Square Development, all of Neilson Industrial Park Development, all of Neilson Commercial Development (SW Corner of Rio Bravo / Broadway), all of KAN Industrial Park Development (Murray Rd. / Broadway Blvd.), and all of Louis Herrera Commercial Development (NE Corner of Rio Bravo / Broadway) would be implemented. In fact, it appears that none of these projects will be implemented as projected. Land development projects are expected to remain virtually stagnant for the next two years. As a result of these projections, it is proposed that re-analysis of key intersections associated with the Las Estancias Development be

considered in the absence of the assumed additional background traffic from the other approved developments.

Pertinent Programmed Highway Improvements in the Current MTP:

There are no Transportation Improvement Program projects in the immediate vicinity of the Rio Bravo / Coors Commercial Development project at this time. The New Mexico Department of Transportation is conducting a study of the Coors Corridor from Arenal south to Gun Club Rd. to define improvements needed to provide the needed capacity of the roadway corridor. There have been recent geometric improvements to the intersection of Arenal Rd. / Coors Blvd. under this program. There are also plans to widen the westbound segment of Rio Bravo Blvd. from I-25 to Broadway Blvd. to add a new westbound lane on Rio Bravo. Additionally, there is a currently construction project on Unser Blvd. that will provide continuous paved connection on Unser Blvd. from Dennis Chavez Blvd. north to I-25 and beyond. This updated study will make adjustments for that new paved connection on Unser Blvd.

TIA Study Area:

The study area was established with the original Traffic Impact Study.

The following table reflected the trip generation data that was utilized in the 2008 Traffic Impact Study:

Rio Bravo / Coors Commercial Development (Final Land Uses) **Trip Generation Data**

USE (ITE CODE)	DESCRIPTION	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
		GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet		Units					
	Shopping Center (820)	262.80	12,726	170	109	570	618
	Home Improvement Superstore (862)	167.00	6,011	133	114	225	254
	Automobile Parts Sales (943)	7.50	457	8	8	22	23
	Medical-Dental Office Building (720)	10.30	206	20	5	10	28
	Specialty Retail Center (814)	24.00	1,064	103	131	35	44
	Walgreen's (Local Data)	16.50	2,063	37	26	136	142
	Fast Food Restaurant w/ Drive-Thru Window (934)	3.50	1,736	95	91	63	58
	High Turnover (Sit-Down) Restaurant (932)	23.10	2,937	138	128	154	98
	Drive-In Bank (912)	4.00	1,563	45	33	102	102
	Residential Condominium / Townhouse (230)	28.00	218	3	15	14	7
	Subtotal		28,981	752	660	1,331	1,374
Pass-by Trip Reduction		20%				(266)	(275)
Net New Trips to System			28,981	752	660	1,065	1,099

The calculated trip generation rate based on the final approved site plan is summarized in the following table based on the ITE Trip Generation Manual (8th Edition) which is very similar to the 7th Edition:

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
(Final Approved Site Plan Specific Users vs TIS)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
DESCRIPTION		GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units				
Department Store (875)	82.50	1,888	26	17	73	73
Apparel Store (876)	56.30	3,738	45	11	108	108
Pet Supply Superstore (866)	12.30	-	-	-	21	21
Office Supply Superstore (867)	20.40	-	-	-	37	33
Arts and Crafts Store (879)	34.10	1,928	78	81	97	114
Home Improvement Superstore (862)	140.00	4,061	101	76	159	173
Shopping Center (820)	82.40	5,988	84	54	274	285
Bed and Linen Superstore (872)	30.80	-	-	-	28	40
Medical-Dental Office Building (720)	11.20	243	20	5	11	30
Specialty Retail Center (814)	6.20	303	64	82	16	20
Pharmacy/Drugstore w/Drive-Through Window (881)	16.50	1,455	25	19	85	85
Fast Food Restaurant w/ Drive-Thru Window (934)	3.50	1,736	88	85	62	57
High Turnover (Sit-Down) Restaurant (932)	18.50	2,352	111	102	122	85
Drive-In Bank (912)	3.00	418	16	12	40	42
Residential Condominium / Townhouse (230)	25.00	193	3	14	13	6
Subtotal		24,303	661	558	1,146	1,172
Pass-by Trip Reduction		20%			224	224
Net New Trips to System		24,303	661	558	922	948
Primary/Diverted Link Trips in Original TIS		28,981	752	660	1,065	1,099
Net Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		4,678	91	102	143	151
% Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		16%	12%	15%	13%	14%

Note that there is an average of an approximately 13% reduction in the traffic generation rate assumed in the 2008 Traffic Impact Study approved by the County and by the State.

Under the alternate land use proposal, the calculated trip generation rates are summarized in the following table:

<i>Las Estancias Comparative Trip Generation Rates (Rev. Site Plan)</i>						
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)						
USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
DESCRIPTION		GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units				
Shopping Center (820)	121.30	7,699	105	67	355	369
Apparel Store (876)	28.00	1,859	22	6	54	54
Office Supply Superstore (867)	21.00	-	-	-	38	34
Pet Supply Superstore (866)	21.00	-	-	-	35	35
Specialty Retail Center (814)	6.20	303	64	82	16	20
Pharmacy/Drugstore w/Drive-Through Window (881)	16.50	1,455	25	19	85	85
Fast Food Restaurant w/ Drive-Thru Window (934)	3.50	1,736	88	85	62	57
High Turnover (Sit-Down) Restaurant (932)	18.00	2,289	108	100	118	82
Drive-In Bank (912)	3.00	418	16	12	40	42
Residential Condominium / Townhouse (230)	25.00	193	3	14	13	6
Hospital (610)	60.00	2,800	109	76	98	135
Church (560)	50.00	456	17	11	11	12
Medical-Dental Office Building (720)	27.20	897	49	13	24	66
Junior / Community College (540)	280.00	521	112	25	122	68
General Office Building (710) - Less than 51,000 S.F.	21.00	309	38	5	8	41
Subtotal		20,935	756	515	1,079	1,106
Pass-by Trip Reduction	20%				161	156
Net New Trips to System		20,935	756	515	918	950
Primary/Diverted Link Trips in Original TIS		28,981	752	660	1,065	1,099
Net Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		8,046	(4)	145	147	149
% Decrease (Increase) In Trips (Original TIS vs Revised Site Plan)		28%	-1%	22%	14%	14%

Note that there is an average of an approximately 14% reduction in the traffic generation rate assumed in the 2008 Traffic Impact Study approved by the County and by the State.

Under either land use scenario (C.P.C. approved or alternate), there is a significant and similar reduction in trip generation rates for the project. Therefore, it can be concluded that the impact the adjacent transportation system will be reduced. It is proposed that the update to the Traffic Impact Study utilize the trip generation from the final approved site plan unless the proposed alternate plan has a significantly higher trip generation rate. In that case, the higher value should be utilized so the either option may be pursued with respect to the transportation impact to the adjacent roadway system. Under that proposal, the trips utilized for the updated study will utilize those associated with the approved site plan except for the AM Peak Hour Entering Volume of 756 trips per hour which will be taken from the Trip Generation rate from the Alternate Plan.

Analytical Tool Proposed for Conduct of the TIA:

Trip generation rates shall be established based in ITE Trip Generation Manual (8th Edition) as depicted in the above tables.

Trip distribution of the newly generated trips shall be proportional to the distribution of the Albuquerque Metropolitan population within a four-mile radius of the project. Since most of the uses are for the purposed of serving the local community, then a four-mile radius should accurately reflect the trip distribution in the service area for this site. The four-mile radius extends north of Central Ave. to about Bluewater Rd. and east to I-25. It extends west beyond 118th St. and south almost to Los Padillos Rd. Attached is a four-mile radius circle overlaid on the MRCOG DASZ map.

Signalized and unsignalized intersection analyses shall be performed utilizing Synchro Version 7 for both signalized and unsignalized intersections included in the analysis.

Queuing at signalized intersections shall be calculated utilizing methodology based on Poisson's arrivals with a 95th percentile confidence level. Queuing at unsignalized intersections shall be based on Synchro 7 Methodology.

Other analytical tools utilized shall conform to the 2000 Highway Capacity Manual and / or the 2004 AASHTO Manual.

Anticipated Level of Traffic Analysis:

Based on the size of the proposed project and the area in which it is located, it was determined that the level of traffic analysis for the 2008 Traffic Impact Study be an implementation year as well as the horizon year analysis. The implementation year was projected to be 2012. A background traffic growth rate was calculated based on Mid-Region Council of Governments regional model data and applied to recent traffic count data to project the 2012 volumes.

For this Traffic Impact Study Update, only an implementation year analysis is proposed. Also, due to the slowdown in the regional economy and the fact that the 2008 Traffic Impact Study made no recommendations for most of the intersection in the analysis, a revised analysis is proposed to update the analysis to reflect 1) the current approved and / or alternate site plan with reduced traffic, 2) reduced background traffic volumes resulting from lack of anticipated land development projects over the past two years and the next two years, 3) current traffic data for the existing roadways and intersections, 4) current geometric improvements at the intersections to be analyzed, and 5) the addition of Unser Blvd. connection to the traffic system.

Anticipated Traffic Monitoring and / or Field Data Collection:

It is anticipated that new field traffic counts may need to be collected for the Traffic Impact Analysis Update for this project for critical intersections that were flagged in the 2008 study. The turning movements counts volumes for the intersection analyzed in the 2008 study were collected in 2006 and 2007. More recent 2008 link volume data has been obtained for parts of Dennis Chavez Blvd., Rio Bravo Blvd., Coors Blvd., Isleta

Blvd., and 2nd St. to consider to determine the short term growth rates for those links from the time that data was collected for the 2008 study (2006 or 2007) to verify whether or not the growth rates utilized in the 2008 study accurately reflect actual roadway volume characteristics. It is proposed that the 2006 and 2007 turning movements volumes collected for the 2008 study be adjusted to conform to the 2008 link volume data or that new traffic counts be conducted for the following intersections and utilized as a basis for the Traffic Impact Study Update:

- 1) Rio Bravo Blvd. (Dennis Chavez Blvd.) / Coors Blvd.
- 2) Rio Bravo Blvd. / Isleta Blvd.
- 3) Rio Bravo Blvd. / 2nd St.
- 4) Arenal Rd. / Coors Blvd.

Analysis of the above four intersections is proposed to determine the appropriate recommended mitigation improvements under the changed conditions associated with this project.

Minor adjustments in turning movement volumes will be manually made to the intersections of Rio Bravo Blvd. (Dennis Chavez Blvd.) / Coors Blvd. and Arenal Rd. / Coors Blvd. to account for the new Unser connection being constructed north of Anderson Farms Subdivision which will complete the paved link of Unser Blvd. between Dennis Chavez Blvd. to Interstate 40 and beyond. The new Unser Blvd. connection will impact the eastbound left turn volumes and the southbound right turn volumes at Dennis Chavez Blvd. (Rio Bravo Blvd.) / Coors Blvd. as well as the eastbound left turn volumes, the northbound thru volumes, and the southbound thru and right turn volumes at Arenal Rd. / Coors Blvd. Volume adjustments at those intersections will need to be presented to the New Mexico Department of Transportation and the Bernalillo County Public Works Department for review and approval before the Traffic Impact Study Update is completed.

The attached Exhibit "A" lists all of the intersections analyzed in the 2008 Traffic Study and categorizes whether each intersection should be re-analyzed, or if the recommended mitigation measure (in the 2008 study) for the each intersection should be eliminated, or if the recommended mitigation measure for each intersection should be maintained based on changed conditions associated with the project. (See attached Exhibit "A")

Format of Traffic Monitoring Summary Statistics and Base Data:

To be determined by BCPWD during the scoping meeting.

Anticipated Level of Safety Analysis:

The proposed access to the project will be evaluated for sight distance restrictions due to horizontal and / or vertical alignment of Coors Blvd. consistent with the 2008 Traffic Study.

Analysis Years and Peak Periods:

The analysis year will continue to be the implementation year (2012). The TIA will evaluate the AM Peak Hour and the PM Peak Hour (weekdays).

Initial Assessment of Development Impact on Other Modes of Transportation Including Pedestrian, Bicycle, and Transit:

The 2008 study considered the presence of Bicycle and Pedestrian facilities as outlined in the Long Range Bikeway System for the Albuquerque Urban Area and describe how the site plan for the project makes provisions to comply with the Bikeway Plan. Additionally, the 2008 study described current transit routes to and from the proposed project and discussed the impacts of the project on the transit system and vice versa. Therefore, the Traffic Impact Study Update will not address those issues again.

Review of TIA Documentation Requirements:

The TIA Update will be reviewed by both the Bernalillo County Public Works Department, the New Mexico Department of Transportation, District 3 office, and the City of Albuquerque Transportation Development Section of the Development Services Division of the Planning Department.

Special Conditions:

The TIA Update will be required to comply with standards established by the Bernalillo County Public Works Department, the New Mexico Department of Transportation District 3 Office, and the City of Albuquerque.

Las Estancias Development (Update)

Recommendations for Traffic Impact Study Update

Intersection:		Mitigation Measure Recommended in 2008 TIS	Comment / Recommendation
1	Rio Bravo / Coors Blvd.	Construct new EB right turn lane (300' plus transition) DMS Sign	This intersection is close to the project and expected to be impacted. Recommend re-analysis.
2	Rio Bravo / Loris Dr.	None	No recommendations based 2008 Traffic Study.
3	Rio Bravo / Isleta	Implement dual EB / WB left turn lanes DMS Sign	Intersection falls in the 2012 NO BUILD Condition. New volumes still expected to have reduced impact on the intersection. Recommend re-analysis.
4	Rio Bravo / Poco Loco	None	No recommendations based 2008 Traffic Study.
5	Rio Bravo / 2nd St.	Construct new NB right turn lane (250' plus transition) Extend NB left turn lane to a total length of 175' plus transition.	Intersection falls in the 2012 NO BUILD Condition. New volumes still expected to have reduced impact on the intersection. Recommend re-analysis.
6	Rio Bravo / Prince St.	None	No recommendations based 2008 Traffic Study.
7	Rio Bravo / Broadway Blvd.	Extend SB right turn lane from 300' to 450' plus transition.	Previous recommendation to extend length of SB right turn lane would not be expected to significantly improve the operation of the intersection. With reduced volumes and consideration of distance from project, recommendation is to eliminate the requirement.
8	Rio Bravo / I-25 West Ramp	None	No recommendations based 2008 Traffic Study.
9	Rio Bravo / I-25 East Ramp	None	No recommendations based 2008 Traffic Study.
10	Central Ave. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
11	Bridge Blvd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
12	Tower Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
13	Sage Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
14	Eduardo Dr. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
15	Arenal Rd. / Coors Blvd.	Extend dual NB left turn lanes from 150' to 225' plus transition.	Due to reduction in projected trip generation rate for project and adjustments to volumes at intersection to account for Unser connection, it is recommended that this intersection be re-analyzed.
16	Blake Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
17	Barcelona Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
18	Gun Club Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
19	Lamonica Rd. / Coors Blvd.	Construct WB right turn overlap phase in signal	This intersection works acceptably during the AM and PM Peak Hour NO BUILD Conditions and is impacted significantly by the proposed Las Estancias Development. A reduction in volumes generated should not result in a change of recommended mitigation measures for this intersection.
20	Driveway "A" / Coors Blvd.	Signalize - Construct dual WB left turn lanes and one right turn lane.	The reduction in volumes generated by the project should not result in a change of recommendations, but probably a change in timing of implementation of signalization of the driveway. Signalization should be determined based on actual turning movement volumes counts applied to signal warrant criteria. Therefore, intersection volumes at Driveway "A" should be monitored to test to determine if signal is warranted.
21	Driveway "B" / Coors Blvd.	(Not Used)	N/A
22	Driveway "C" / Coors Blvd.	Right-in, right-out driveway	Reduction in project volumes generated should have no impact on the recommendations for Driveway "C".
23	Driveway "D" / Coors Blvd.	Right-in, right-out driveway	Reduction in project volumes generated should have no impact on the recommendations for Driveway "D".
24	Lamonica Dr. / Driveway "E"	Full Access	Reduction in project volumes generated should have no impact on the recommendations for Driveway "E".
25	Lamonica Dr. / Driveway "F"	Full Access	Reduction in project volumes generated should have no impact on the recommendations for Driveway "F".
26	Dennis Chavez Blvd. / 118th St.	None	No recommendations based 2008 Traffic Study.
27	Dennis Chavez Blvd. / 98th St.	None	No recommendations based 2008 Traffic Study.
28	Dennis Chavez Bd. / Unser Blvd.	None	No recommendations based 2008 Traffic Study.

XXX

Recommended re-analysis of intersection based on changed conditions.

XXX

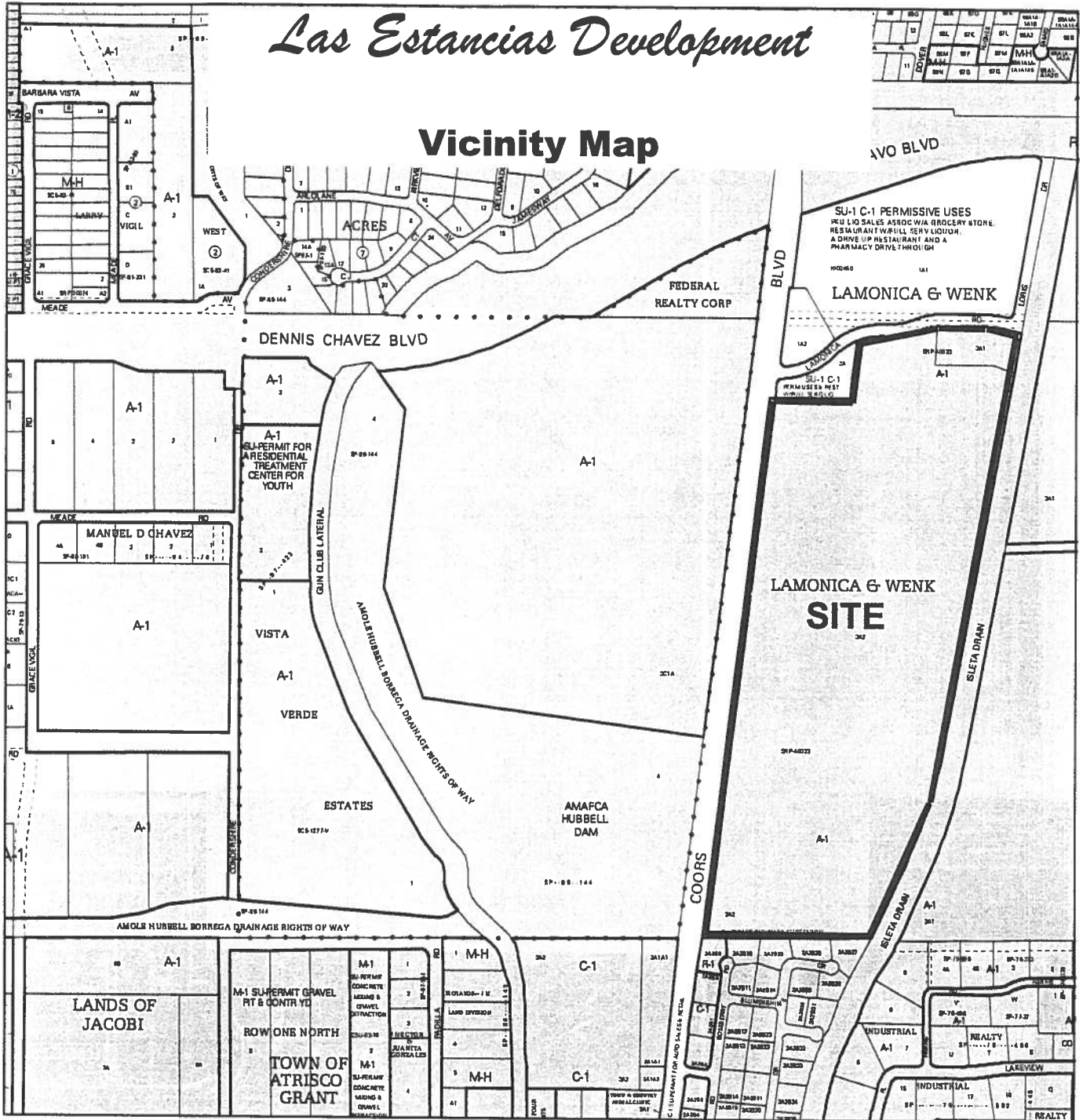
Recommend elimination of requirement mitigation measures based on changed conditions.

XXX

Recommend mitigation measures be consistent with 2008 Study.

Las Estancias Development

Vicinity Map



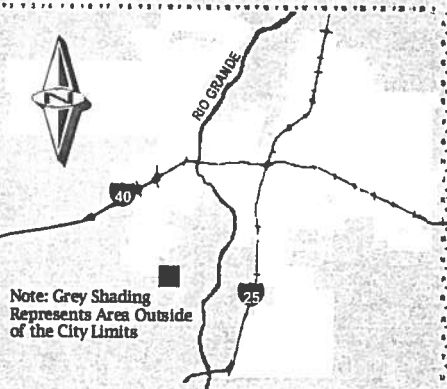
For more current information and more details visit: <http://www.cabq.gov/gis>

Zone Atlas Page:

P-10-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



Note: Grey Shading Represents Area Outside of the City Limits

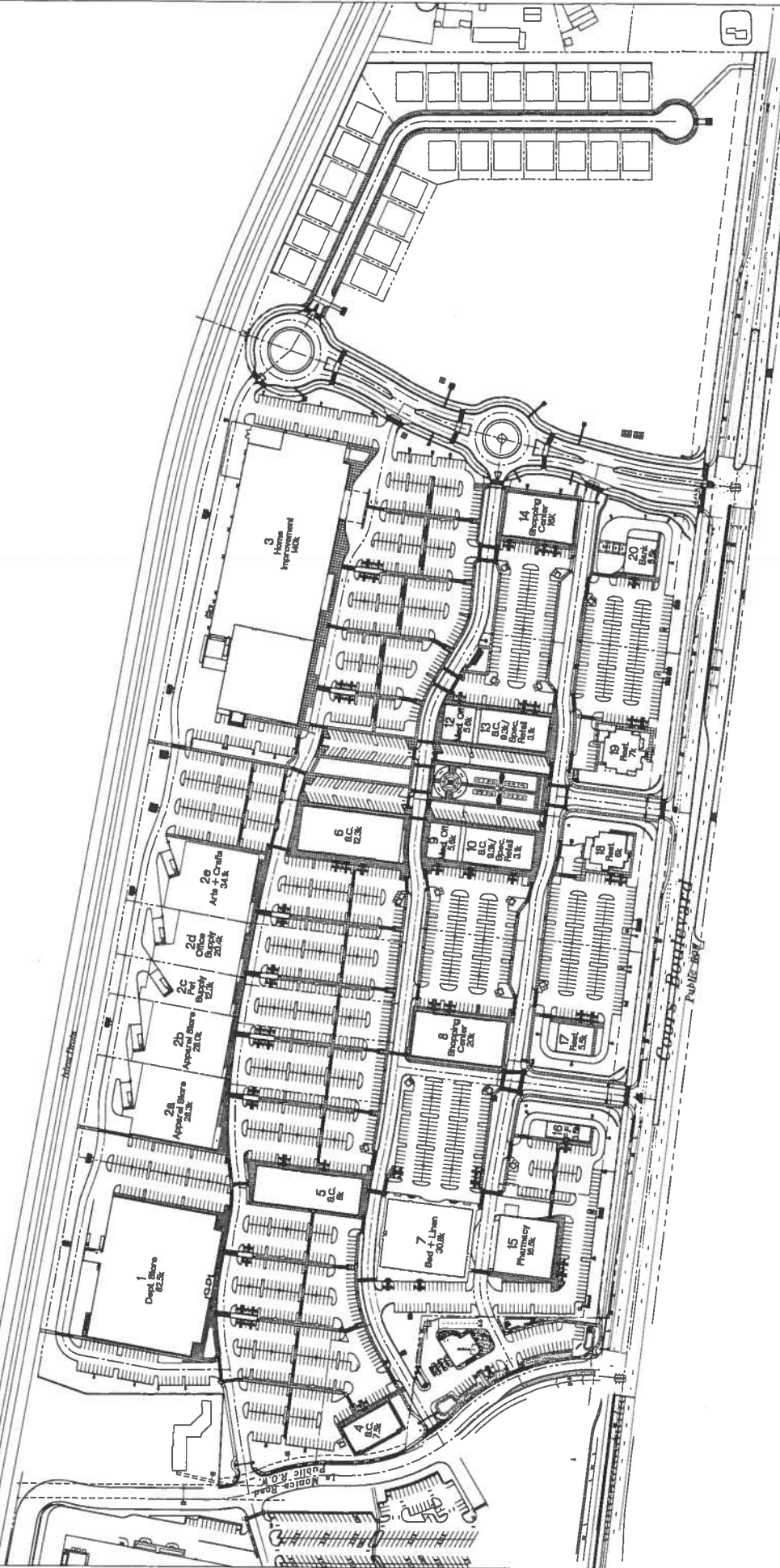
0 750 1,600 Feet



Map amended through: 3/22/2007

Las Estancias

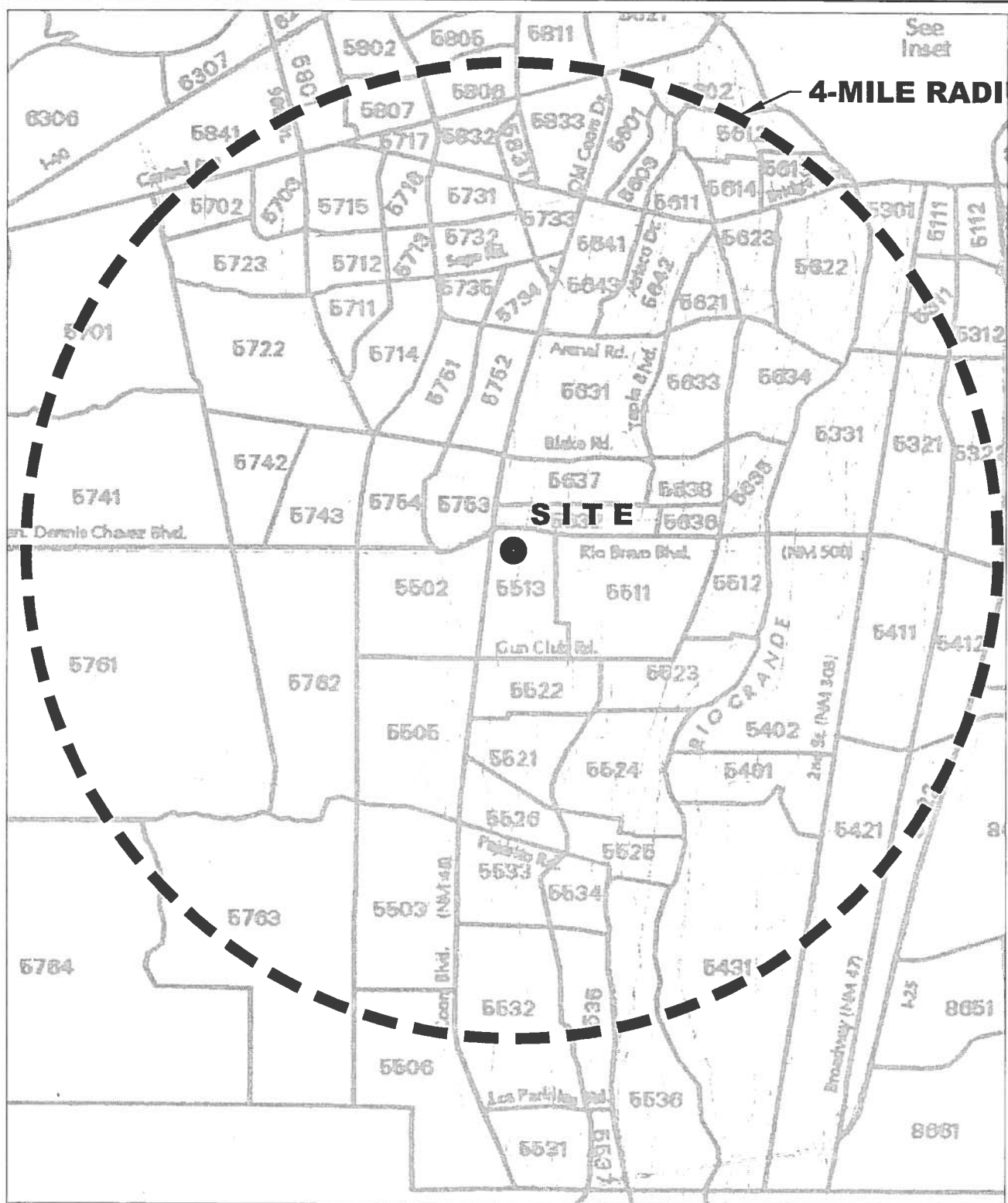
Approved Site Plan



SCALE
0 50 100

Site Plan-05/05/10
Los Estancias
Bernillo County, New Mexico

Conceptual Plan
Subject to Change



DATA ANALYSIS SUBZONE (DASZ) MAP

Rio Bravo / Coors Commercial Development

Revised Analysis

LAS ESTANCIAS (COORS BLVD. S. OF LA MONICA DR.) UPDATE RESULTS

RESULTS AND DISCUSSION OF INTERSECTION CAPACITY ANALYSES

Signalized Intersection Capacity Analyses

1. Rio Bravo Blvd. / Coors Blvd. – Appendix

The results of the implementation year analysis of the signalized intersection of Rio Bravo Blvd. / Coors Blvd. are summarized in the following table:

Rio Bravo Blvd. / Coors Blvd.	2012 No Build		2012 BUILD	
	A.M.	P.M.	A.M.	P.M.
Existing Geometry	D - 36.9	C - 32.5	D - 40.2	D - 52.5

Base Geometry (Rio Bravo Blvd. / Coors Blvd.)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Dennis Chavez Blvd.	1	0	1	1	0
WB Rio Bravo Blvd.	1	0	1	0	1
NB Coors Blvd.	1	0	2	0	1
SB Coors Blvd.	2	0	1	1	0

This study demonstrates that this signalized intersection will operate at acceptable levels-of-service for the 2012 AM and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will not have a significant adverse impact on this intersection.

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

Queueing Analysis Summary Sheet

Project:

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)

Intersection:

Rio Bravo Blvd. / Coors Blvd.

2012

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	61	375	2	473	Cont	0	118	0
AM NO BUILD Queue	1	79	150	2	616	450	0	154	250
AM BUILD Queue	1	79	150	2	616	450	0	160	250
Existing Lane Length	1	50	375	2	135	Cont	0	175	0
PM NO BUILD Queue	1	59	125	2	160	150	0	208	300
PM BUILD Queue	1	59	125	2	160	150	0	293	400
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	79	490	1	108	Cont	1	172	700
AM NO BUILD Queue	1	82	150	1	113	200	1	179	275
AM BUILD Queue	1	82	150	1	113	200	1	179	275
Existing Lane Length	1	310	490	1	325	Cont	1	402	700
PM NO BUILD Queue	1	328	450	1	343	450	1	425	550
PM BUILD Queue	1	328	450	1	343	450	1	425	550
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	79	275	2	469	Cont	1	279	200
AM NO BUILD Queue	1	85	150	2	506	400	1	301	425
AM BUILD Queue	1	137	225	2	873	600	1	301	425
Existing Lane Length	1	193	275	2	511	Cont	1	94	200
PM NO BUILD Queue	1	206	300	2	546	425	1	100	175
PM BUILD Queue	1	294	400	2	1,169	775	1	100	175
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	2	317	290	2	281	Cont	0	29	0
AM NO BUILD Queue	2	317	275	2	281	250	0	29	75
AM BUILD Queue	2	317	275	2	321	275	0	29	75
Existing Lane Length	2	276	290	2	698	Cont	0	73	0
PM NO BUILD Queue	2	286	250	2	724	525	0	76	150
PM BUILD Queue	2	286	250	2	1,330	875	0	76	150

AM **PM**
 Cycle Length: 130 130

NOTE: Queue lengths are in feet.

The analysis recommends that the northbound left turn lane be extended to 400 feet plus transition. This cannot be done without adversely impacting the southbound left turn lane at La Monica Dr. Therefore, no recommendations are made.

2. Rio Bravo Blvd. / Isleta Blvd. – Appendix

The results of the implementation year analysis of the signalized intersection of Rio Bravo Blvd. / Isleta Blvd. are summarized in the following table:

Rio Bravo Blvd. / Isleta Blvd.	2012 No Build		2012 BUILD	
	A.M.	P.M.	A.M.	P.M.
Base Geometry	C - 31.3	C - 33.0	C - 30.8	C - 33.9

Base Geometry (Rio Bravo Blvd. / Isleta Blvd.)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Rio Bravo Blvd.	1	0	2	0	1
WB Rio Bravo Blvd.	1	0	2	0	1
NB Isleta Blvd.	1	0	2	0	1
SB Isleta Blvd.	2	0	2	0	1

This study demonstrates that this signalized intersection will operate at acceptable levels-of-service for the 2012 AM and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will not have a significant adverse impact on this intersection. Therefore, no recommendations are made for the intersection of Rio Bravo Blvd. / Isleta Blvd.

The results of the queuing analysis for this intersection is summarized in the following table:

Queueing Analysis Summary Sheet

Project:

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)

Intersection:

Rio Bravo Blvd. / Isleta Blvd.

2012

Approach				Left Turns			Thru Movements			Right Turns		
Eastbound				# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length				1	112	200	2	910	Cont	1	62	190
AM NO BUILD Queue				1	118	200	2	955	650	1	65	125
AM BUILD Queue				1	135	225	2	1,002	700	1	87	150
Existing Lane Length				1	114	200	2	314	Cont	1	97	190
PM NO BUILD Queue				1	119	200	2	327	275	1	101	175
PM BUILD Queue				1	148	225	2	407	325	1	139	225
Westbound				# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length				1	167	725	2	207	Cont	1	146	400
AM NO BUILD Queue				1	178	275	2	221	200	1	156	250
AM BUILD Queue				1	178	275	2	226	200	1	156	250
Existing Lane Length				1	417	725	2	791	Cont	1	305	400
PM NO BUILD Queue				1	444	575	2	841	600	1	324	450
PM BUILD Queue				1	444	575	2	919	650	1	324	450
Northbound				# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length				1	72	90	2	190	Cont	1	346	170
AM NO BUILD Queue				1	74	150	2	196	175	1	357	475
AM BUILD Queue				1	76	150	2	196	175	1	357	475
Existing Lane Length				1	152	90	2	224	Cont	1	143	170
PM NO BUILD Queue				1	158	250	2	233	200	1	149	225
PM BUILD Queue				1	195	300	2	233	200	1	149	225
Southbound				# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length				2	255	200	2	133	Cont	1	48	200
AM NO BUILD Queue				2	274	250	2	143	150	1	52	100
AM BUILD Queue				2	274	250	2	143	150	1	54	100
Existing Lane Length				2	253	200	2	253	Cont	1	135	200
PM NO BUILD Queue				2	253	225	2	253	225	1	135	225
PM BUILD Queue				2	253	225	2	253	225	1	163	250

AM **PM**
 Cycle Length: 130 130

NOTE: Queue lengths are in feet.

This analysis recommends lengthening the northbound left turn to 300 feet plus transition for both the NO BUILD and BUILD Conditions; however, this is not feasible without adversely impacting the southbound left turn at the next street south (La Mora Ln). The analysis also recommends lengthening the northbound right turn lane to 240 feet plus transition. This analysis does not take into account the acceleration lane east of the intersection which probably eliminates queueing. According to the analysis, the southbound left turn lane should be lengthened to 250 feet plus transition. This would adversely impact the northbound left turn lane at Del Norte Dr. (Kelsey Rd.) No recommendations are made for the intersection.

3. Rio Bravo Blvd. / 2nd St. – Appendix

The results of the implementation year analysis of the signalized intersection of Rio Bravo Blvd. / 2nd St. are summarized in the following table:

Rio Bravo Blvd. / 2 nd St.	2012 No Build		2012 BUILD	
	A.M.	P.M.	A.M.	P.M.
Existing Geometry	B - 19.7	D - 46.6	B - 19.8	D - 51.1

Base Geometry (Rio Bravo Blvd. / 2nd St.)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Rio Bravo Blvd.	1	0	2	0	1
WB Rio Bravo Blvd.	1	0	2	0	1
NB 2 nd St.	1	0	0	1	0
SB 2 nd St.	1	0	0	1	0

This study demonstrates that this signalized intersection will operate at acceptable levels-of-service for the 2012 AM and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will not have a significant adverse impact on this intersection. Therefore, no recommendations are made for the intersection of Rio Bravo Blvd. / 2nd St.

The results of the queuing analysis for this intersection is summarized in the following table:

Queueing Analysis Summary Sheet

Project:

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)

Intersection:

Rio Bravo Blvd. / 2nd St.

2012

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	281	225	2	1,154	Cont	1	106	272
AM NO BUILD Queue	1	314	425	2	1,288	850	1	118	200
AM BUILD Queue	1	318	425	2	1,315	875	1	122	200
Existing Lane Length	1	112	225	2	496	Cont	1	24	272
PM NO BUILD Queue	1	128	200	2	565	425	1	27	75
PM BUILD Queue	1	134	225	2	611	450	1	33	75
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	46	240	2	395	Cont	1	54	200
AM NO BUILD Queue	1	51	100	2	435	350	1	60	125
AM BUILD Queue	1	51	100	2	438	350	1	60	125
Existing Lane Length	1	70	240	2	1,020	Cont	1	75	200
PM NO BUILD Queue	1	76	150	2	1,107	750	1	81	150
PM BUILD Queue	1	76	150	2	1,152	775	1	81	150
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	153	150	1	79	Cont	0	59	0
AM NO BUILD Queue	1	170	250	1	88	150	0	66	125
AM BUILD Queue	1	172	275	1	88	150	0	66	125
Existing Lane Length	1	234	150	1	74	Cont	0	108	0
PM NO BUILD Queue	1	246	350	1	78	150	0	113	200
PM BUILD Queue	1	272	375	1	78	150	0	113	200
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	79	150	1	75	Cont	0	53	0
AM NO BUILD Queue	1	79	150	1	75	150	0	53	100
AM BUILD Queue	1	79	150	1	75	150	0	53	100
Existing Lane Length	1	93	150	1	117	Cont	0	236	0
PM NO BUILD Queue	1	98	175	1	123	200	0	248	350
PM BUILD Queue	1	98	175	1	123	200	0	254	350

AM PM
 Cycle Length: 130 130

NOTE: Queue lengths are in feet.

This analysis recommends lengthening the eastbound left turn lane to 425 feet plus transition; however, this is not feasible without adversely impacting the westbound left turn to the west. The analysis also recommends lengthening the northbound left turn to 375 feet plus transition. The northbound left turn lane is actually required to be lengthened for the AM and PM Peak Hour NO BUILD conditions. The BUILD conditions only require an additional lengthening of 25 feet or one car length for both the AM and PM Peak Hour conditions. This improvement can be constructed by lengthening the thru/right lane to the same length thus allowing for the left turn lane.

4. Arenal Rd. / Coors Blvd. – Appendix

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

Arenal Rd. / Coors Blvd.	2012 No Build		2012 BUILD	
	A.M.	P.M.	A.M.	P.M.
Existing Geometry	C - 27.7	C - 30.7	C - 26.6	C - 29.4

Existing Geometry (Arenal Rd. / Coors Blvd.)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Arenal Rd.	1	0	1	0	1
WB Arenal Rd.	1	0	1	0	1
NB Coors Blvd.	2	0	2	0	1
SB Coors Blvd.	1	0	2	0	1

This study demonstrates that this signalized intersection will operate at acceptable levels-of-service for the 2012 AM and PM Peak Hour NO BUILD and BUILD Conditions considered in this report and that the newly generated traffic from this development will not have a significant adverse impact on this intersection.

The results of the queuing analysis for this intersection is summarized in the following table:

Queueing Analysis Summary Sheet

Project:

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)

Intersection:

Arenal Rd. / Coors Blvd.

2012

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	399	150	1	271	Cont	1	77	150
AM NO BUILD Queue	1	416	550	1	283	400	1	80	150
AM BUILD Queue	1	416	550	1	283	400	1	87	150
Existing Lane Length	1	248	150	1	147	Cont	1	81	150
PM NO BUILD Queue	1	248	350	1	147	225	1	81	150
PM BUILD Queue	1	248	350	1	147	225	1	184	275
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	97	150	1	88	Cont	1	95	150
AM NO BUILD Queue	1	97	175	1	88	150	1	95	175
AM BUILD Queue	1	103	175	1	88	150	1	95	175
Existing Lane Length	1	137	150	1	186	Cont	1	116	150
PM NO BUILD Queue	1	151	250	1	206	300	1	128	200
PM BUILD Queue	1	241	350	1	206	300	1	128	200
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	2	39	450	2	638	Cont	1	139	400
AM NO BUILD Queue	2	39	50	2	638	475	1	139	225
AM BUILD Queue	2	101	125	2	758	550	1	193	300
Existing Lane Length	2	133	450	2	601	Cont	1	103	400
PM NO BUILD Queue	2	134	150	2	604	450	1	103	175
PM BUILD Queue	2	240	225	2	808	575	1	195	300
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	114	400	2	447	Cont	1	92	550
AM NO BUILD Queue	1	118	200	2	463	350	1	95	175
AM BUILD Queue	1	118	200	2	476	375	1	95	175
Existing Lane Length	1	116	400	2	816	Cont	1	245	550
PM NO BUILD Queue	1	121	200	2	849	600	1	255	350
PM BUILD Queue	1	121	200	2	1,047	725	1	255	350

AM **PM**
 Cycle Length: 130 130

NOTE: Queue lengths are in feet.

This analysis recommends lengthening the eastbound and westbound left turn lanes to 550 feet plus transition and 350 feet plus transition, respectively. Neither improvement is feasible due to the right-of way constraints at the intersection. Therefore, no recommendations are made for this intersection.

CONCLUSIONS

This study concludes that there is minimal impact to the adjacent transportation system that will occur for the 2012 BUILD analyses. Due to the decrease in traffic of the new site plan for the Las Estancias development, the hold on the developments with previously conducted relevant traffic impact studies in the area, and to the decrease in growth in the area due to the current worldwide economic environment, the additional traffic generated by this site will not significantly impact the adjacent transportation system.

In summary, the proposed development plan for the Las Estancias Commercial Development will present no significant adverse impact to the adjacent transportation system provided that the following recommendations are implemented.

RECOMMENDATIONS

The planned project should be accessed generally as shown on the proposed site development plan in the Appendix of this report via Driveway "A", a full access signalized intersection on Coors Blvd. approximately 2,000 feet south of Lamonica Rd, Driveways "C" and "D", two right-turn-in, right-turn-out driveways on Coors Blvd. north of Driveway "A", and Driveways "E" and "F", two full access unsignalized driveways on Lamonica Rd. (Driveway "B" was omitted from this project).

The intersection of Driveway "A" / Coors Blvd. will warrant traffic signals prior to the full development of the project.

The recommended improvements to mitigate the impact of this development on the adjacent transportation system are as follows:

For the City intersection of Rio Bravo Blvd. / 2nd St.: (See discussion on Page 6)

- 1) Lengthen the northbound left turn to 375 feet plus transition.

For the City intersection of Lamonica Dr. / Coors Blvd.: (See Appendix Pages A-56 thru A-57 for excerpts from original TIS)

- 1) A westbound right turn overlap phase should be incorporated into the operation of the signal at the onset of development of this project.

For the City intersection of Driveway "A" / Coors Blvd.: (See Appendix Pages A-58 thru A-59 for excerpts from original TIS)

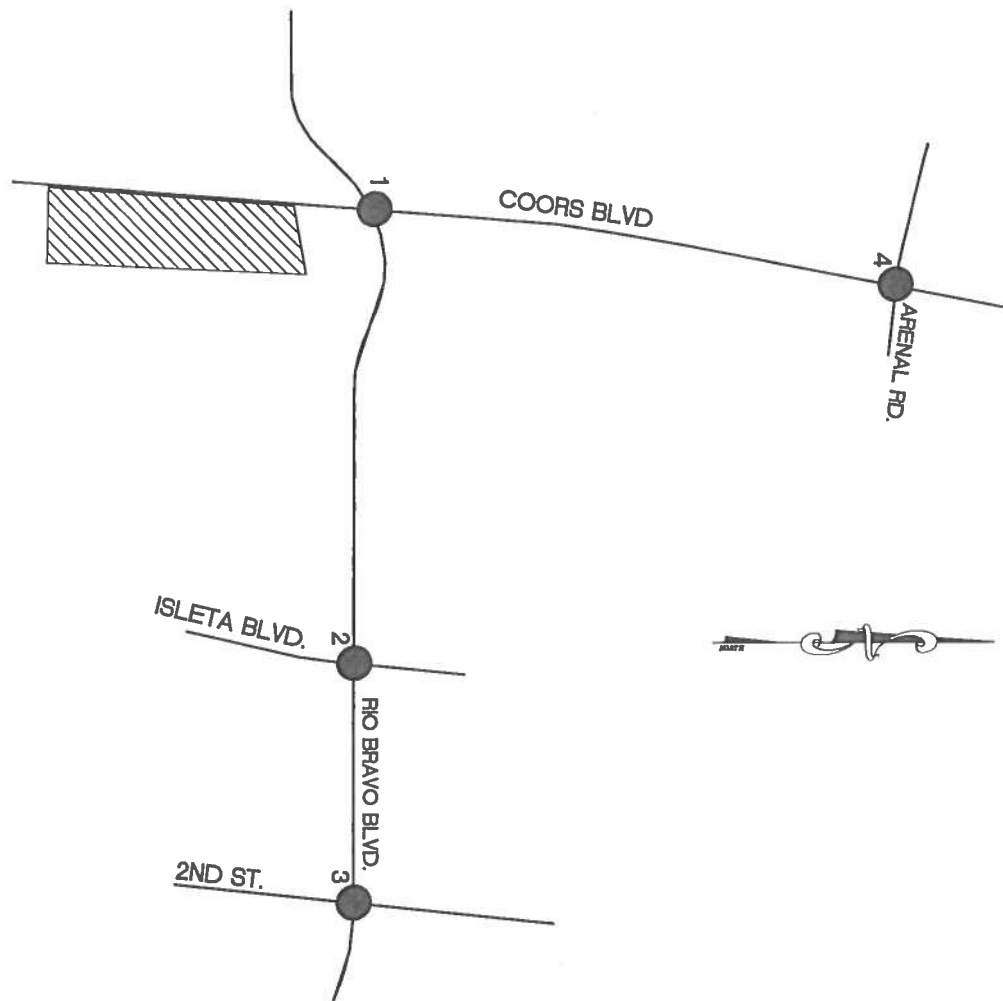
- 1) The signalized intersection of Driveway "A" / Coors Blvd. should be constructed with recommended initial minimum geometry as described in the following table:

Recommended Geometry (Driveway "A" / Coors Blvd.)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Driveway "A"	N/A	N/A	N/A	N/A	N/A
WB Driveway "A"	2	0	0	0	1
NB Coors Blvd.	0	0	2	0	1
SB Coors Blvd.	2*	0	2	0	0

* - Dual Southbound left turn lanes should be designed and constructed on Coors Blvd. at Driveway "A". However, one of the southbound left turn lanes should be striped out currently. Dual left turn lanes will likely be required at some future date.

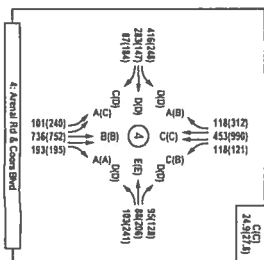
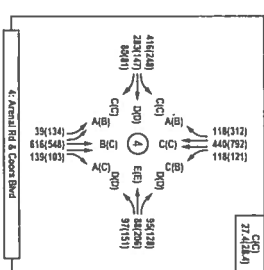
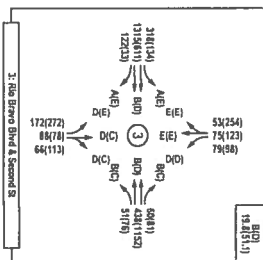
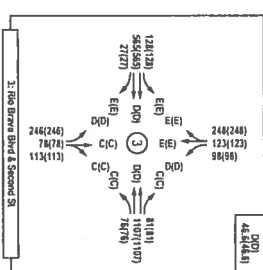
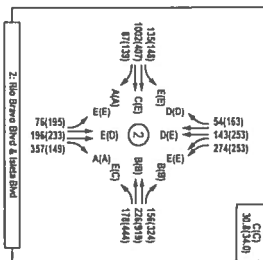
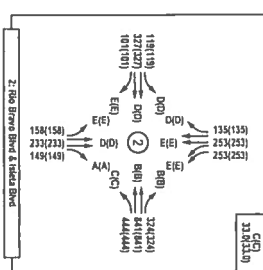
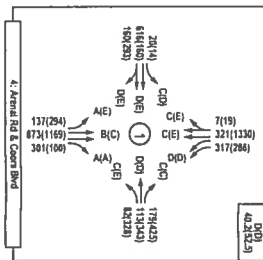
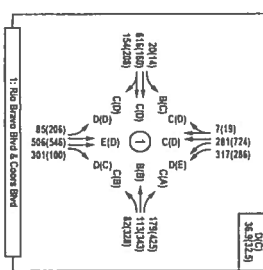
The two other driveways on Coors Blvd. should be built as right-in, right-out only driveways as shown on the site development plan in the Appendix of this report. The driveways on Lamonica Rd should be constructed as full access driveways.



NO BUILD Analysis

BUILD Analysis

BUILD Analysis
MITIGATED



NO MITIGATION RECOMMENDED

NO MITIGATION RECOMMENDED

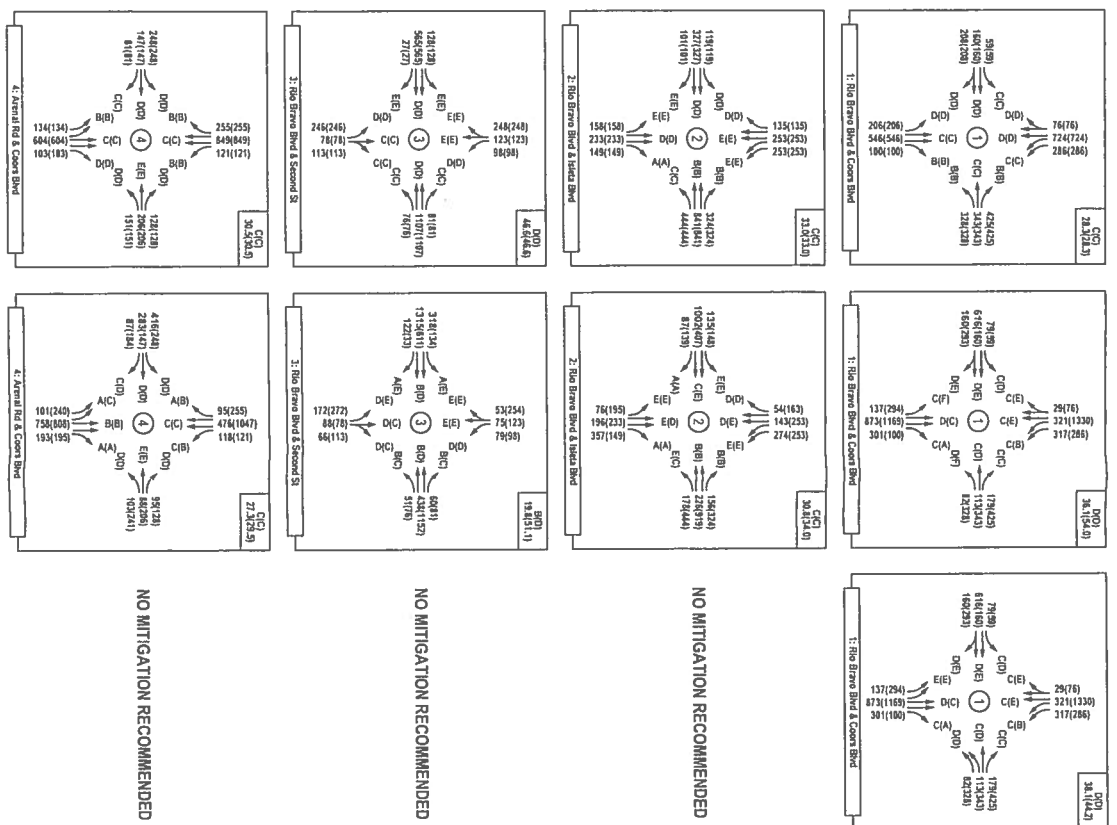
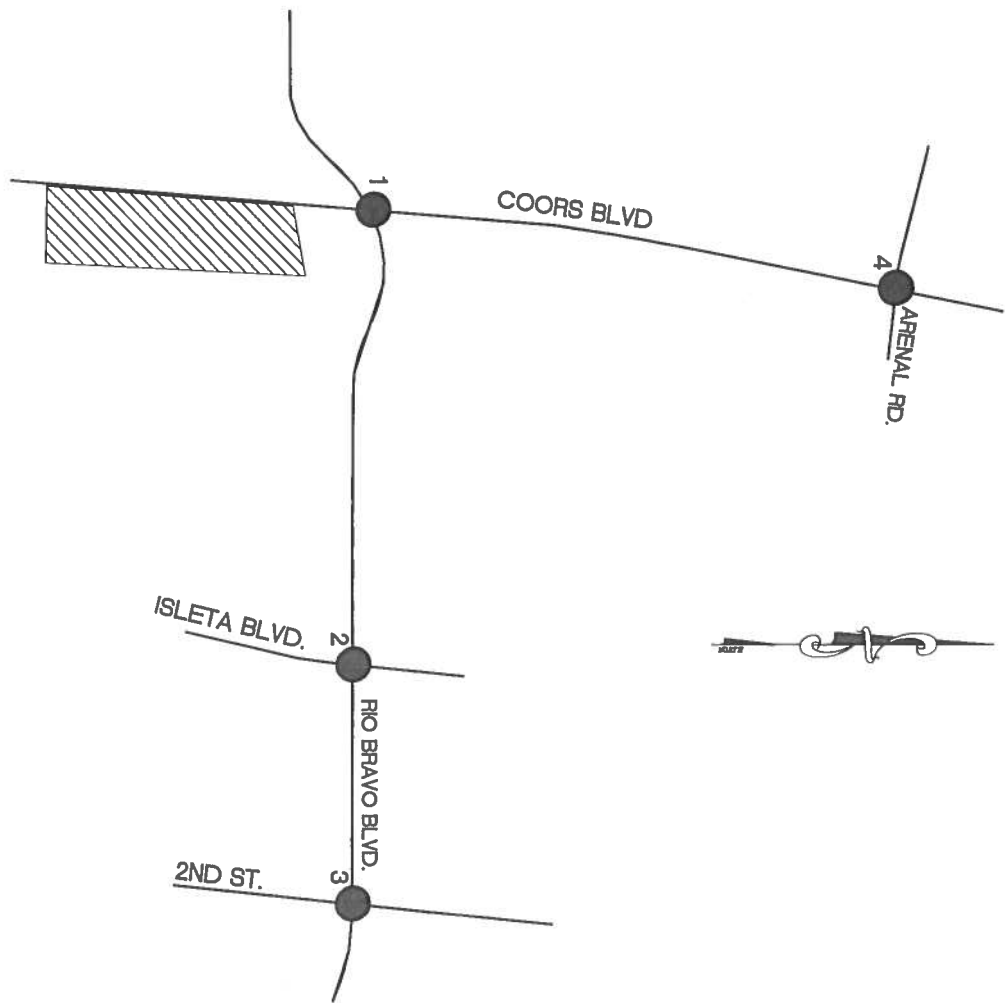
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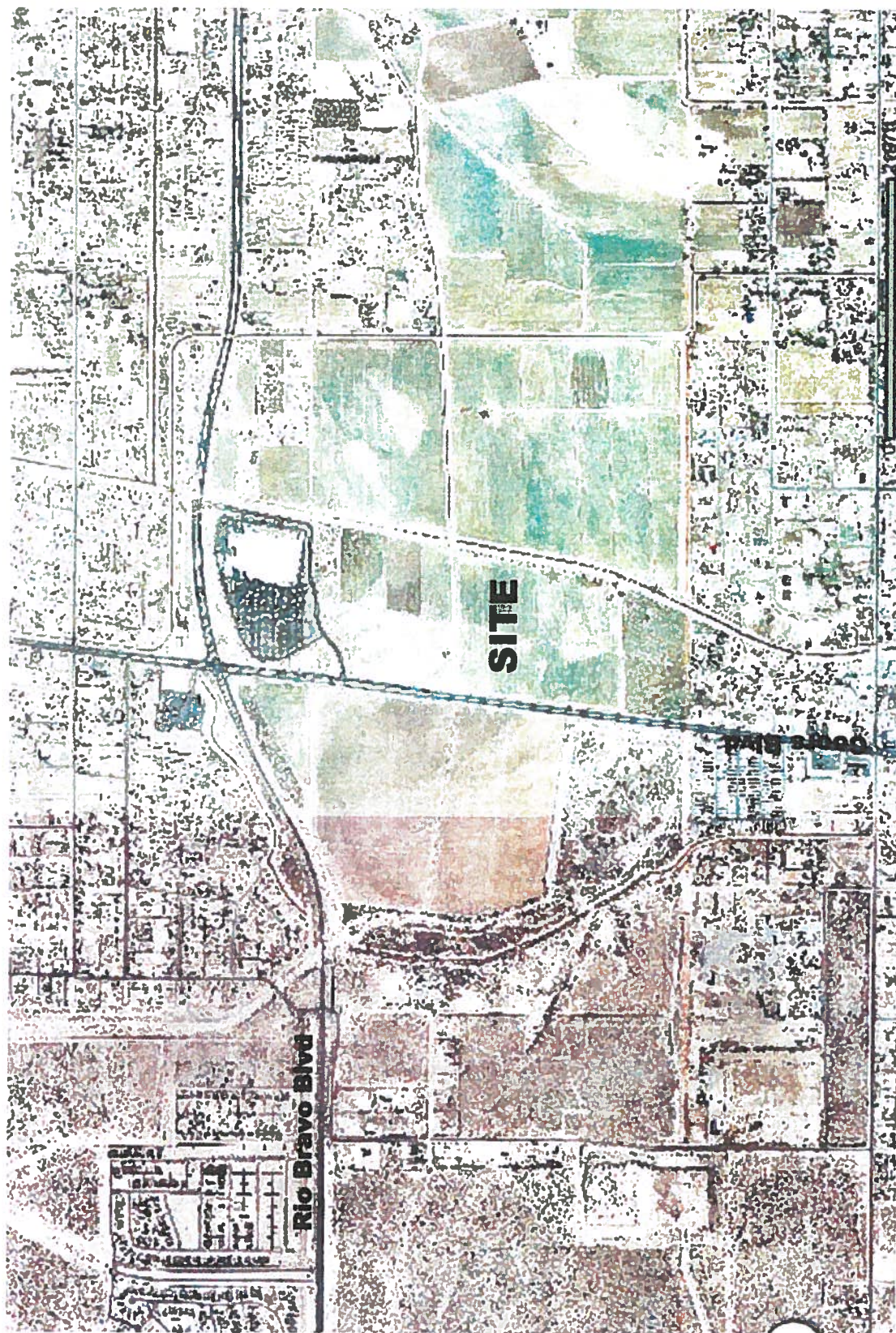
NO MITIGATION RECOMMENDED

Las Estancias Update
Coors Blvd. S. of La Monica Dr.
LOS / Volume Analysis Map

Appendix

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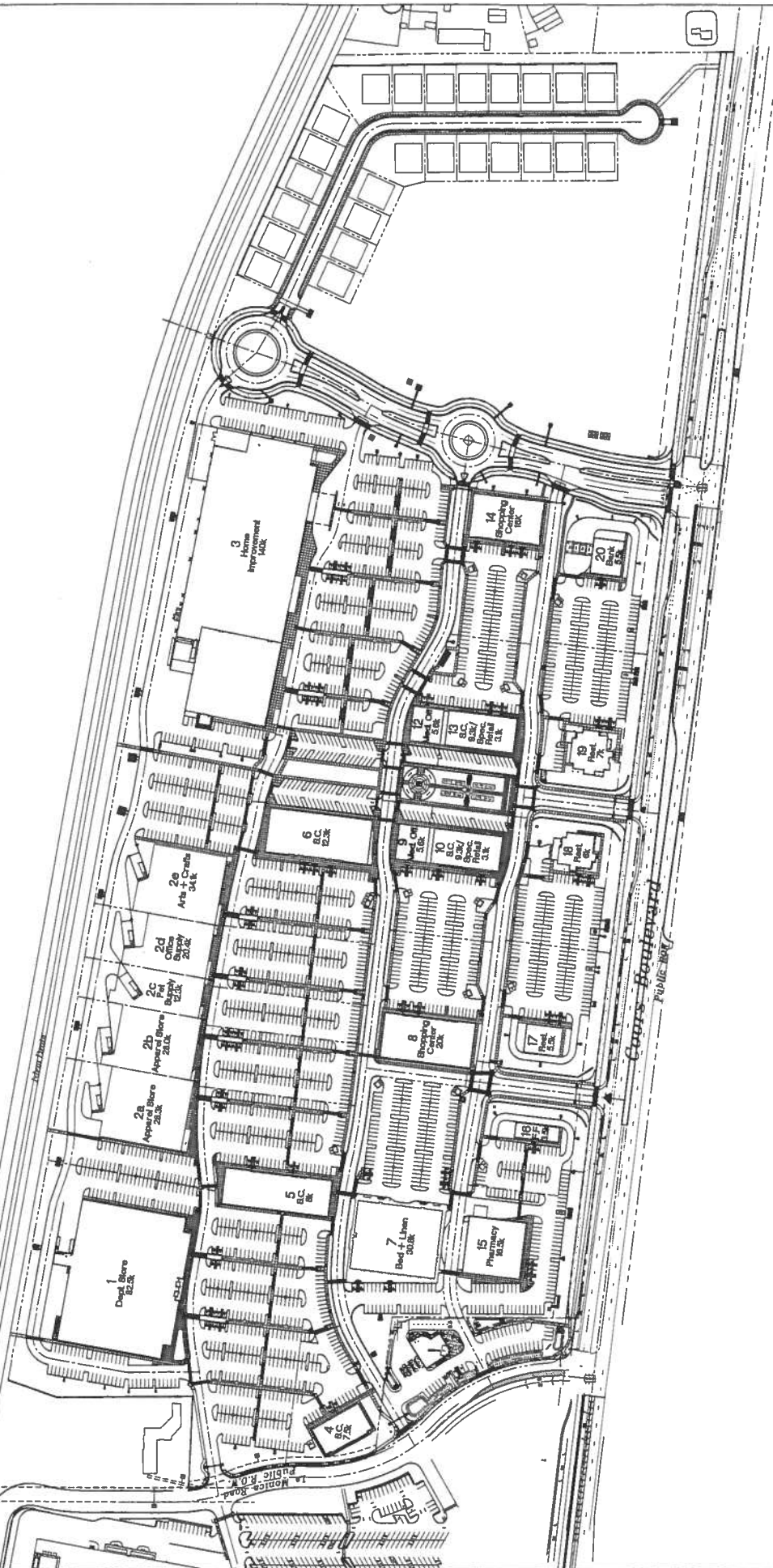


Las Estancias (Coors Blvd. S. of La Monica Dr.)

Aerial Map - 2006

Las Estancias

Approved Site Plan



Site Plan-05/05/10
Las Estancias
Bernillo County, New Mexico

Conceptual Plan
Subject to Change

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)		DESCRIPTION	24 HR VOL		A. M. PEAK HR.		P. M. PEAK HR.	
			GROSS		ENTER	EXIT	ENTER	EXIT
Summary Sheet								
			Units					
Shopping Center (820)			84.00	6,063	85	54	277	289
Home Improvement Superstore (862)			140.00	4,061	101	76	159	173
Medical-Dental Office Building (720)			11.20	243	20	5	11	30
Specialty Retail Center (814)			2.10	127	55	70	12	15
Pharmacy/Drugstore w/Drive-Through Window (881)			16.50	1,455	25	19	85	85
Fast Food Restaurant w/ Drive-Thru Window (934)			3.50	1,736	88	85	62	57
High Turnover (Sit-Down) Restaurant (932)			18.50	2,352	111	102	122	85
Drive-In Bank (912)			3	418	16	12	40	42
Residential Condominium / Townhouse (230)			25	193	3	14	13	6
Department Store (875)			85.00	1,945	27	18	76	76
Apparel Store (876)			56.30	3,738	45	11	108	108
Pet Supply Superstore (866)			12.30	-	-	-	21	21
Office Supply Superstore (867)			20.40	-	-	-	37	33
Arts and Crafts Store (879)			34.10	1,928	78	81	97	114
Bed and Linen Superstore (872)			30.80	-	-	-	28	40
Subtotal				24,259	654	547	1,148	1,174
Total Commercial Trips			506.5	23,823	631	528	1,124	1,138
Total Office Trips			11.2	243	20	5	11	30
Total Residential Trips			25	193	3	14	13	6
Pass-by Trip Reduction			20%				(225)	(235)
Net New Trips to Transportation System				24,259	654	547	923	939

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
		6,063	85	54	277	289
Shopping Center (820)		84.00				

ITE Trip Generation Equations:

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

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

50% Enter, 50% Exit

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

$$\ln(T) = 0.59 \ln(X) + 2.32$$

61% Enter, 39% Exit

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

$$\ln(T) = 0.67 \ln(X) + 3.37$$

49% Enter, 51% Exit

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
Home Improvement Superstore (862)	140.00	4,061	101	76	159	173

1,000 S.F.

ITE Trip Generation Equations:

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

$$\ln(T) = 0.7 \ln(X) + 4.85$$

50% Enter, 50% Exit

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

$$T = 1.26 (X) + 0$$

57% Enter, 43% Exit

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

$$T = 2.37 (X) + 0$$

48% Enter, 52% Exit

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan) *Trip Generation Data (ITE Trip Generation Manual - 8th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
11.20					
1,000 S.F.					
Medical-Dental Office Building (720)					
	243	20	5	11	30

ITE Trip Generation Equations:

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

$$T = 40.89 (X) + 50\% \text{ Enter, } -214.97 \text{ 50\% Exit}$$

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

$$T = 2.3 (X) + 79\% \text{ Enter, } 0 \text{ 21\% Exit}$$

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

$$\ln(T) = 0.88 \ln(X) + 27\% \text{ Enter, } 1.59 \text{ 73\% Exit}$$

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
	127	55	70	12	15

Specialty Retail Center (814)

2.10

1,000 S.F.

ITE Trip Generation Equations:

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

$$T = \frac{42.78 (X) + 37.66}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{4.9 (X) + 115.59}{44\% \text{ Enter, } 56\% \text{ Exit}}$$

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

$$T = \frac{2.4 (X) + 21.48}{44\% \text{ Enter, } 56\% \text{ Exit}}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
	16.50	25	19	85	85
1,000 S.F.					

Pharmacy/Drugstore w/Drive-Through Window (881)

ITE Trip Generation Equations:

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

$$T = \begin{matrix} 88.16 & (X) & + & 0 \\ 50\% & \text{Enter,} & & 50\% \text{ Exit} \end{matrix}$$

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

$$T = \begin{matrix} 2.66 & (X) & + & 0 \\ 57\% & \text{Enter,} & & 43\% \text{ Exit} \end{matrix}$$

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

$$T = \begin{matrix} 10.35 & (X) & + & 0 \\ 50\% & \text{Enter,} & & 50\% \text{ Exit} \end{matrix}$$

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
Fast Food Restaurant w/ Drive-Thru Window (934)					
	3.50	88	85	62	57
1,000 S.F.					

ITE Trip Generation Equations:

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

$$T = 496.12 (X) + 0$$

50% Enter, 50% Exit

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

$$T = 49.35 (X) + 0$$

51% Enter, 49% Exit

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

$$T = 33.84 (X) + 0$$

52% Enter, 48% Exit

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
18.50					
1,000 S.F.					
High Turnover (Sit-Down) Restaurant (932)					
	2,352	111	102	122	85

ITE Trip Generation Equations:

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

$$T = \frac{127.15 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{11.52 (X) + 0}{52\% \text{ Enter, } 48\% \text{ Exit}}$$

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

$$T = \frac{11.15 (X) + 0}{59\% \text{ Enter, } 41\% \text{ Exit}}$$

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
		418	16	12	40	42
3.00						
Drive-In Bank (912)						
Drive-In Lanes						

ITE Trip Generation Equations:

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

$$T = 139.25 (X) + 0$$

50% Enter, 50% Exit

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

$$T = 9.44 (X) + 0$$

58% Enter, 42% Exit

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

$$T = 27.41 (X) + 0$$

49% Enter, 51% Exit

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Residential Condominium / Townhouse (230)					
Units					
	25.00	3	14	13	6
Dwelling Units					

ITE Trip Generation Equations:

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

$$\ln(T) = 0.87 \ln(X) + 2.46$$

50% Enter, 50% Exit

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

$$\ln(T) = 0.8 \ln(X) + 0.26$$

17% Enter, 83% Exit

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

$$\ln(T) = 0.82 \ln(X) + 0.32$$

67% Enter, 33% Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
		1,945	27	18	76	76
		85.00				
Department Store (875)						

Department Store (875)

ITE Trip Generation Equations:

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

$$T = \frac{22.88 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{0.53 (X) + 0}{60\% \text{ Enter, } 40\% \text{ Exit}}$$

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

$$T = \frac{1.78 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT	
	Units					
Apparel Store (876)	56.30	3,738	45	11	108	108

Units

56.30

1,000 S.F.

ITE Trip Generation Equations:

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

$$T = \frac{66.4 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{1 (X) + 0}{80\% \text{ Enter, } 20\% \text{ Exit}}$$

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

$$T = \frac{3.83 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
12.30					
1,000 S.F.					
Pet Supply Superstore (866)					
-					
21					

ITE Trip Generation Equations:

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

$$T = \begin{matrix} 50\% & \text{Enter,} & 0 & (X) + & 0 \\ & & & & 50\% \text{ Exit} \end{matrix}$$

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

$$T = \begin{matrix} 50\% & \text{Enter,} & 0 & (X) + & 0 \\ & & & & 50\% \text{ Exit} \end{matrix}$$

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

$$T = \begin{matrix} 50\% & \text{Enter,} & 3.38 & (X) + & 0 \\ & & & & 50\% \text{ Exit} \end{matrix}$$

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
	34.10	78	81	97	114
Arts and Crafts Store (879)					
1,000 S.F.					

ITE Trip Generation Equations:

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

$$T = \begin{matrix} 56.55 & (X) & + & 0 \\ 50\% & \text{Enter,} & & 50\% \text{Exit} \end{matrix}$$

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

$$T = \begin{matrix} 4.65 & (X) & + & 0 \\ 49\% & \text{Enter,} & & 51\% \text{Exit} \end{matrix}$$

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

$$T = \begin{matrix} 6.21 & (X) & + & 0 \\ 46\% & \text{Enter,} & & 54\% \text{Exit} \end{matrix}$$

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
30.80					
1,000 S.F.					
Bed and Linen Superstore (872)					
	-	-	-	28	40

ITE Trip Generation Equations:

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

$$T = \frac{0}{50\%} \text{ Enter, } \frac{0}{50\%} \text{ Exit} + \frac{0}{50\%} \text{ Exit}$$

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

$$T = \frac{0}{50\%} \text{ Enter, } \frac{0}{50\%} \text{ Exit} + \frac{0}{50\%} \text{ Exit}$$

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

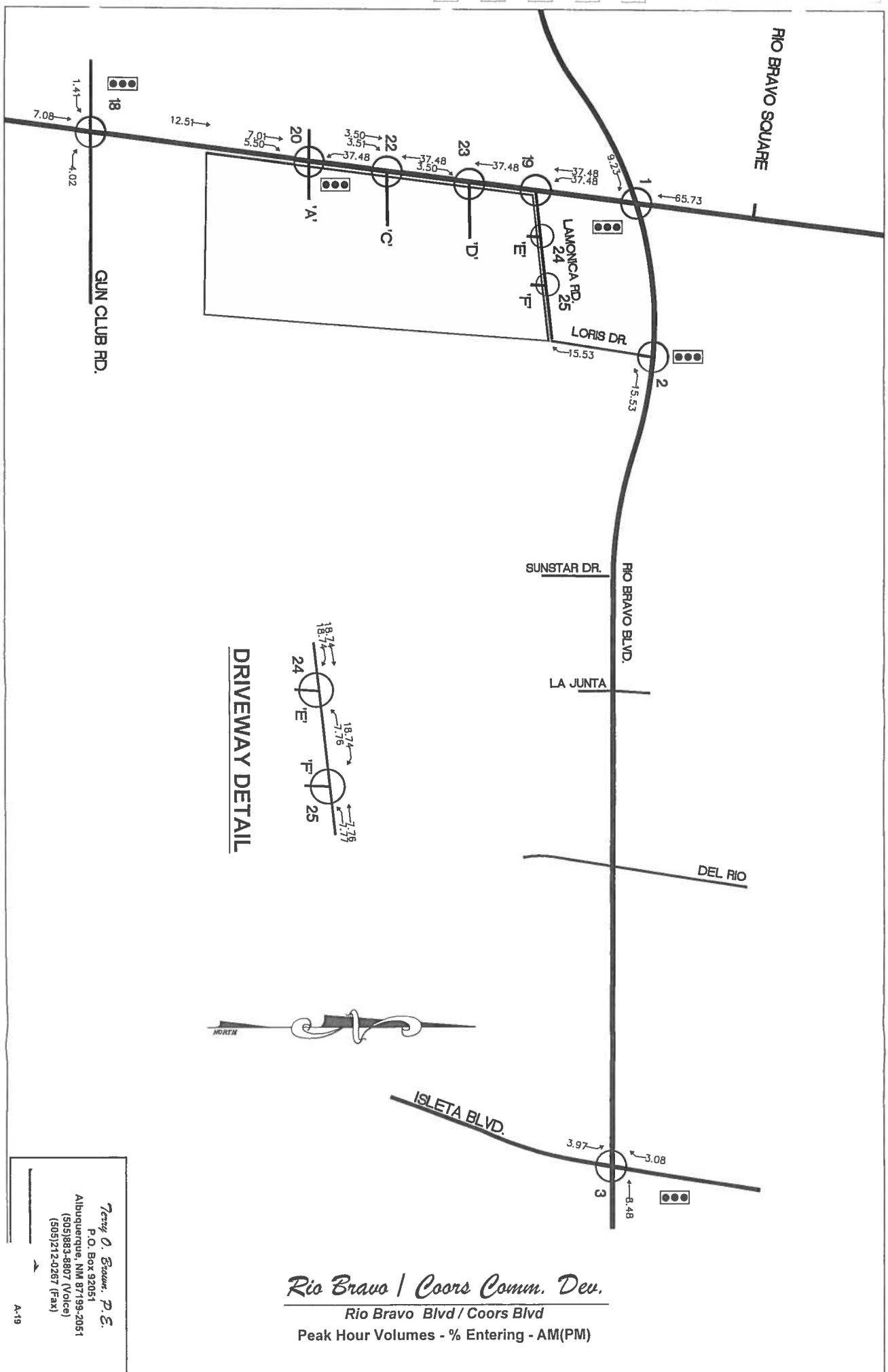
$$T = \frac{2.22}{41\%} \text{ Enter, } \frac{0}{59\%} \text{ Exit} + \frac{0}{59\%} \text{ Exit}$$

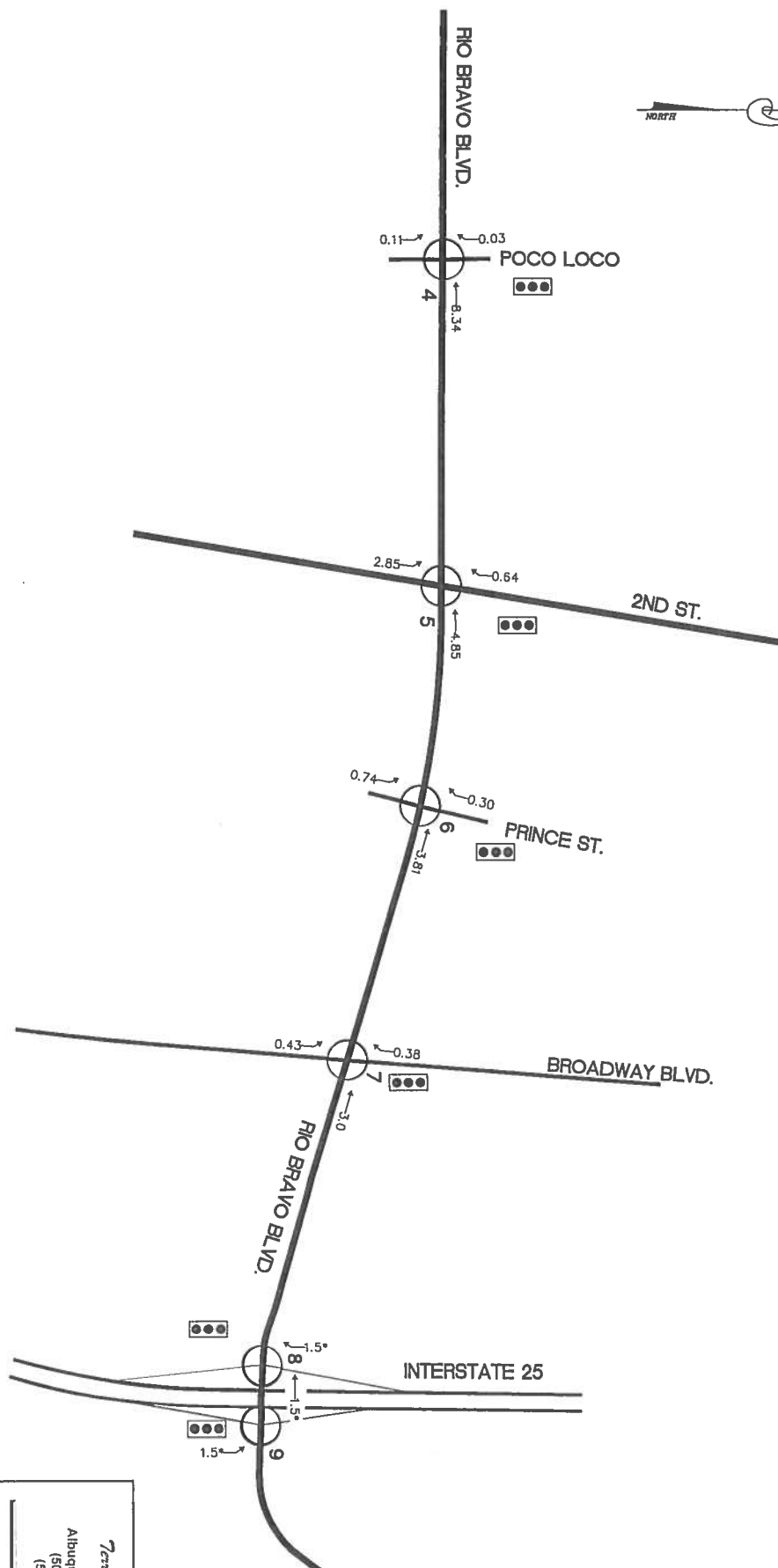
Comments:
 Tract No.

Based on ITE Trip Generation Manual - 8th Edition

Rio Bravo Blvd / Coors Blvd
Trip Distribution Map



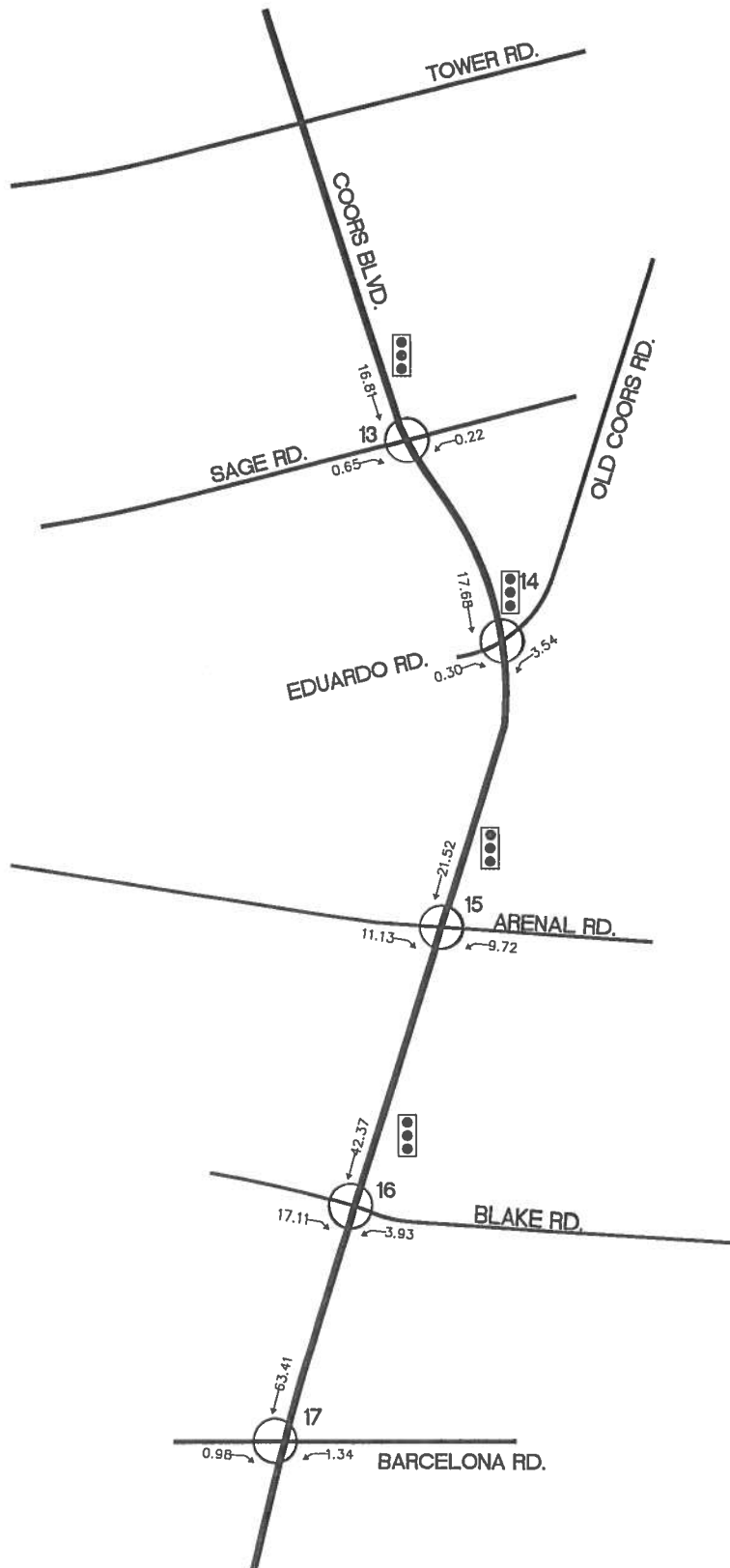




* Traffic is not expected to utilize I-25 but 3% was distributed to the ramps to provide a conservative analysis of the impact of this development

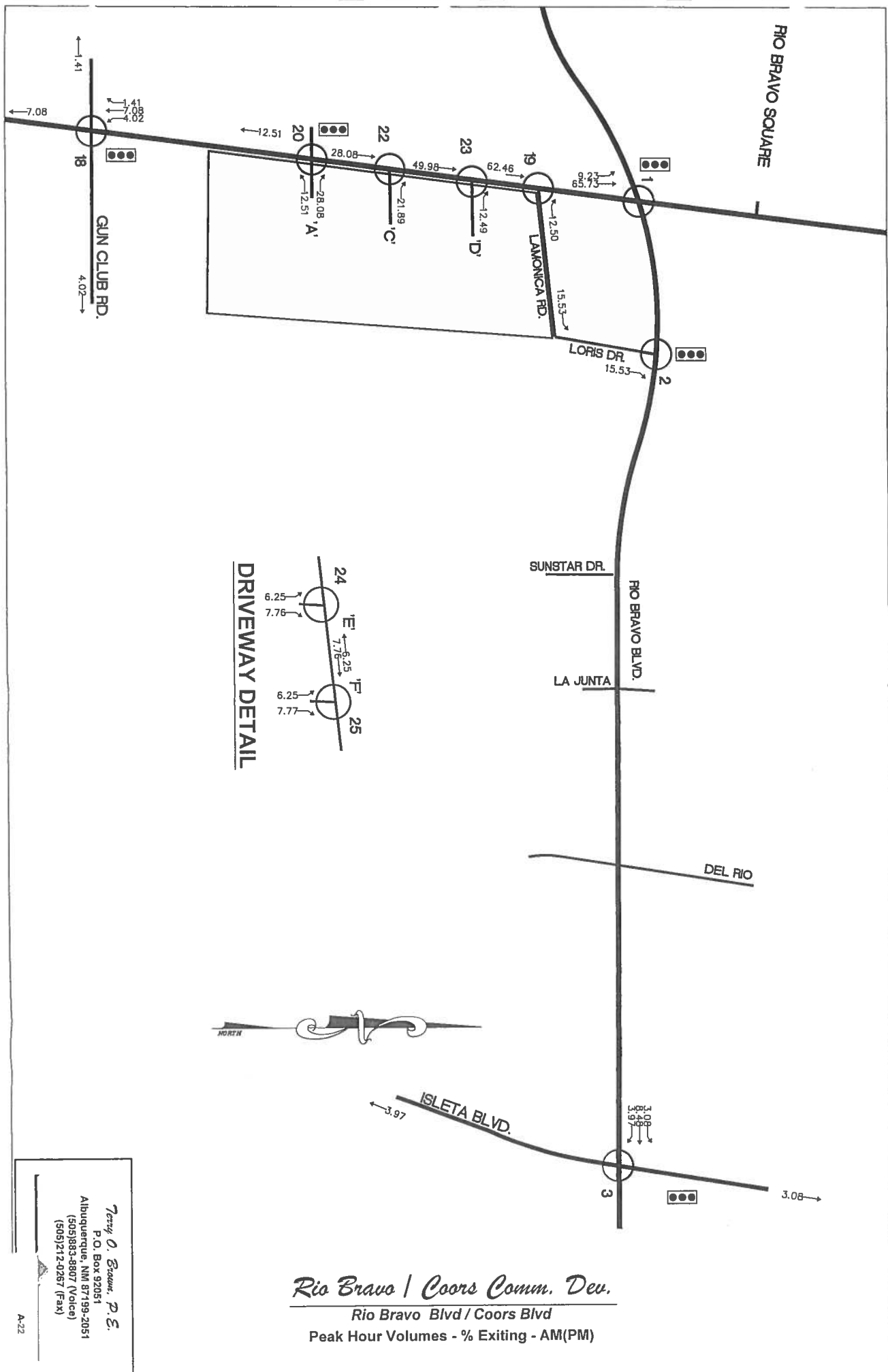
Rio Bravo / Coors Comm. Dev.
 Rio Bravo Blvd / Coors Blvd
 Peak Hour Volumes - % Entering - AM(PM)

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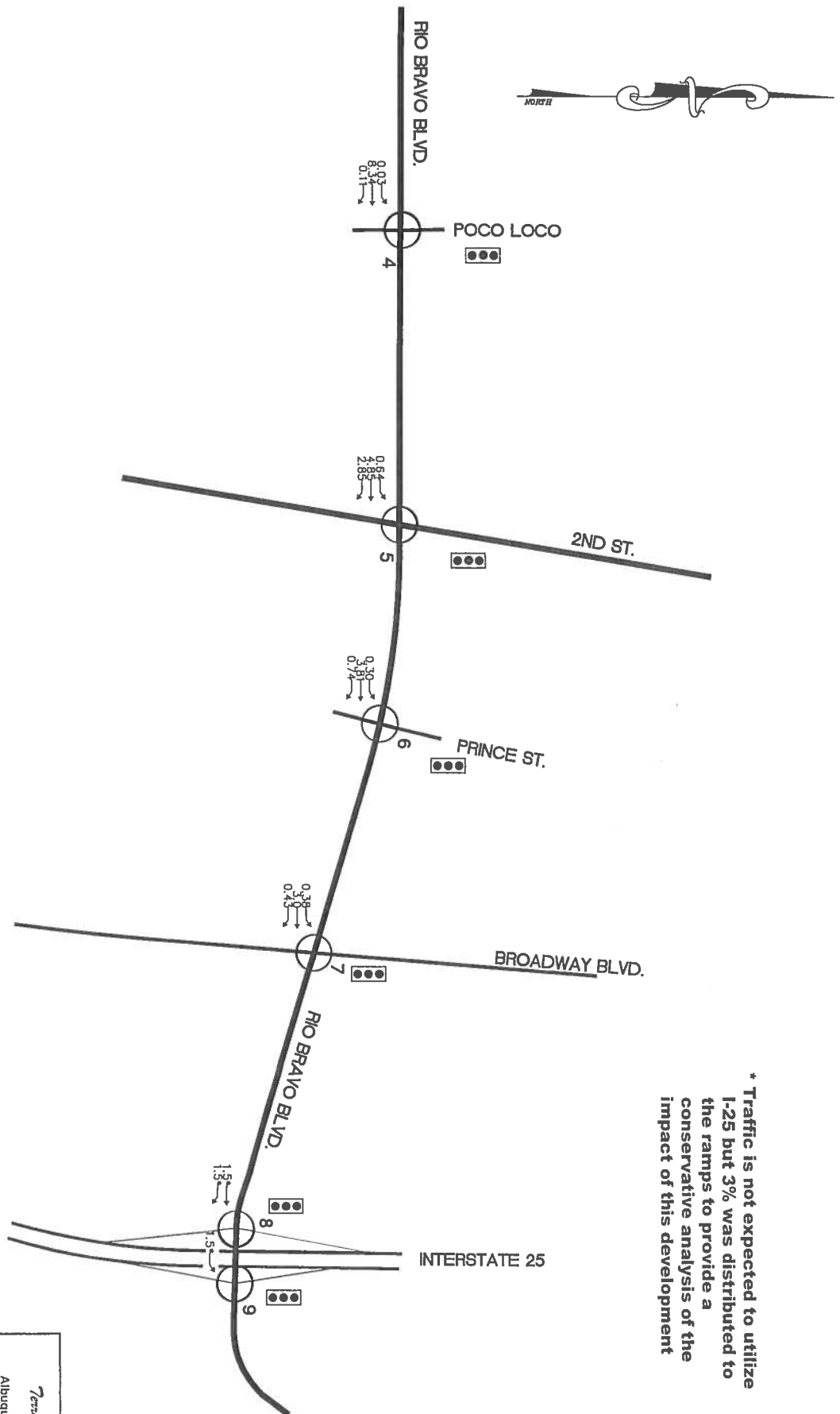
Rio Bravo / Coors Comm. Dev.
Rio Bravo Blvd / Coors Blvd
Peak Hour Volumes - % Entering - AM(PM)



Rio Bravo / Coors Comm. Dev.

Rio Bravo Blvd / Coors Blvd
Peak Hour Volumes - % Exiting - AM(PM)

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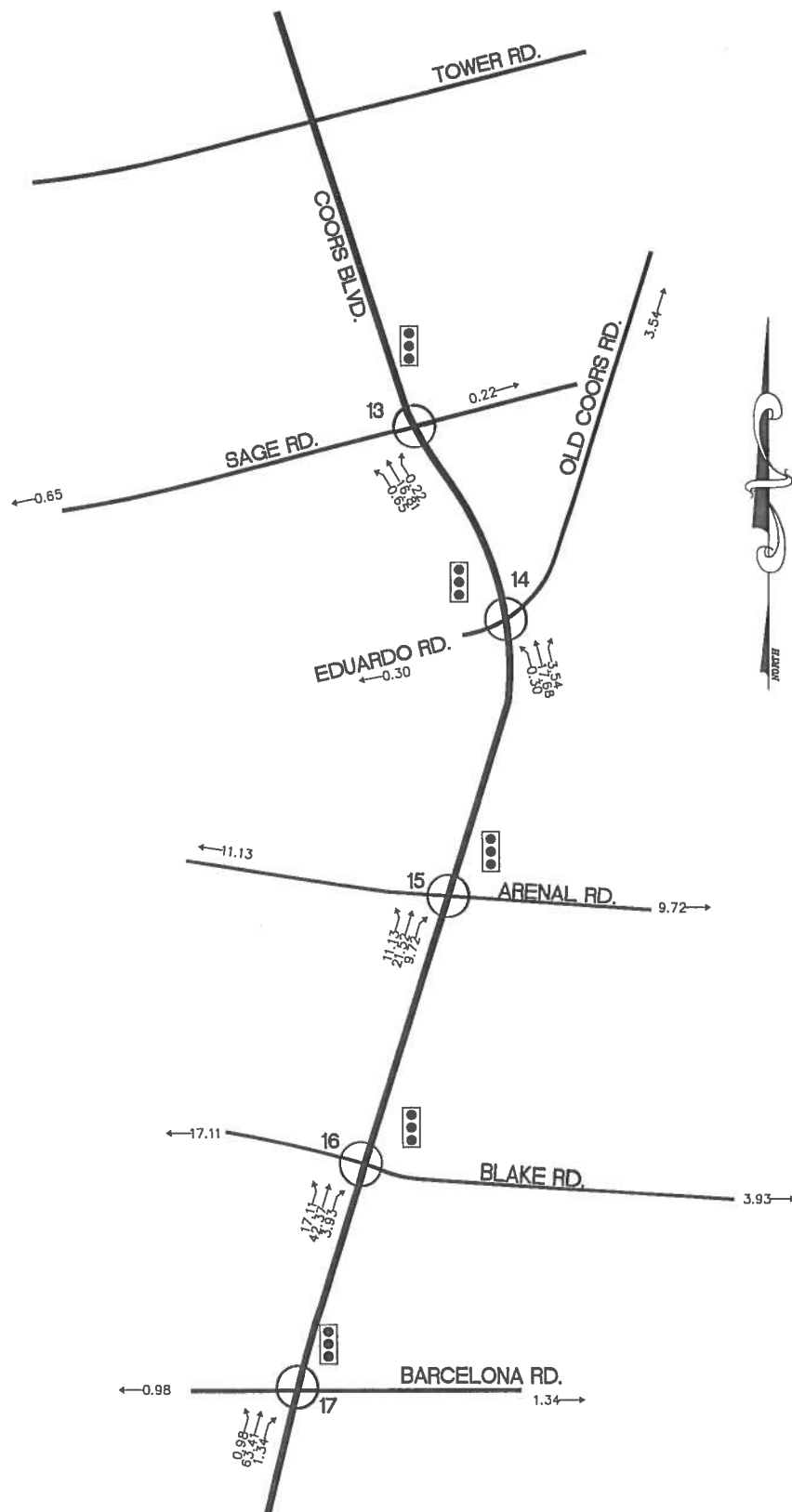
* Traffic is not expected to utilize I-25 but 3% was distributed to the ramps to provide a conservative analysis of the impact of this development

Rio Bravo / Coors Comm. Dev.

Rio Bravo Blvd / Coors Blvd

Peak Hour Volumes - % Exiting - AM(PM)

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Rio Bravo / Coors Comm. Dev.
 Rio Bravo Blvd / Coors Blvd
 Peak Hour Volumes - % Exiting - AM(PM)

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Las Estancias Update (Coors Blvd. S. of La Monica Dr.)

Projected Turning Movements SUMMARY PROPOSED DEVELOPMENT (2012) - 100% Development

INTERSECTION: Summary

Rio Bravo Blvd. / Coors Blvd.		0.92			0.79			0.80			0.88			PHF
(1)		Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)			
3.0% Truck		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010)		61	473	118	79	108	172	79	469	279	317	281	29	
2012 (NO BUILD - A.M.)		79	616	154	82	113	179	85	506	301	317	281	29	
2012 (BUILD - A.M.)		79	616	160	82	113	179	137	873	301	317	321	29	

		0.89			0.87			0.95			0.92			PHF
		Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010) 2012 (NO BUILD - P.M.) 2012 (BUILD - P.M.)		50	135	175	310	325	402	193	511	94	276	698	73	
		59	160	208	328	343	425	206	546	100	286	724	76	
		59	160	293	328	343	425	294	1,169	100	286	1,330	76	

Rio Bravo Blvd. / Isleta Blvd.		0.84			0.81			0.87			0.93			PHF
(2)		Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)			
3.0% Truck		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010)		112	910	62	167	207	146	72	190	346	255	133	48	
2012 (NO BUILD - A.M.)		118	955	65	178	221	156	74	196	357	274	143	52	
2012 (BUILD - A.M.)		135	1,002	87	178	226	156	76	196	357	274	143	54	

		0.94			0.92			0.95			0.95			PHF
		Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010) 2012 (NO BUILD - P.M.) 2012 (BUILD - P.M.)		114	314	97	417	791	305	152	224	143	253	253	135	
		119	327	101	444	841	324	158	233	149	253	253	135	
		148	407	139	444	919	324	195	233	149	253	253	163	

Rio Bravo Blvd. / 2nd St.		0.94			0.81			0.83			0.75			PHF
(3)		Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)			
3.0% Truck		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010)		281	1,154	106	46	395	54	153	79	59	79	75	53	
2012 (NO BUILD - A.M.)		314	1,288	118	51	435	60	170	88	66	79	75	53	
2012 (BUILD - A.M.)		318	1,315	122	51	438	60	172	88	66	79	75	53	

		0.96			0.94			0.77			0.90			PHF
		Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010) 2012 (NO BUILD - P.M.) 2012 (BUILD - P.M.)		112	496	24	70	1,020	75	234	74	108	93	117	236	
		128	565	27	76	1,107	81	246	78	113	98	123	248	
		134	611	33	76	1,152	81	272	78	113	98	123	254	

Arenal Rd. / Coors Blvd.		0.83			0.75			0.86			0.89			PHF
(4)		Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)			
6.0% Truck		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010)		399	271	77	97	88	95	39	638	139	114	447	92	
2012 (NO BUILD - A.M.)		416	283	80	97	88	95	39	638	139	118	463	95	
2012 (BUILD - A.M.)		416	283	87	103	88	95	101	758	193	118	476	95	

		0.95			0.82			0.87			0.94			PHF
		Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2010) 2012 (NO BUILD - P.M.) 2012 (BUILD - P.M.)		248	147	81	137	186	116	133	601	103	116	816	245	
		248	147	81	151	206	128	134	604	103	121	849	255	
		248	147	184	241	206	128	240	808	195	121	1,047	255	

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)
Projected Turning Movements Worksheet
Rio Bravo Blvd. / Coors Blvd.

INTERSECTION: E-W Street: Rio Bravo Blvd. (1)
 N-S Street: Coors Blvd.
 Year of Existing Counts: 2010
 Implementation Year: 2012
 Growth Rates:

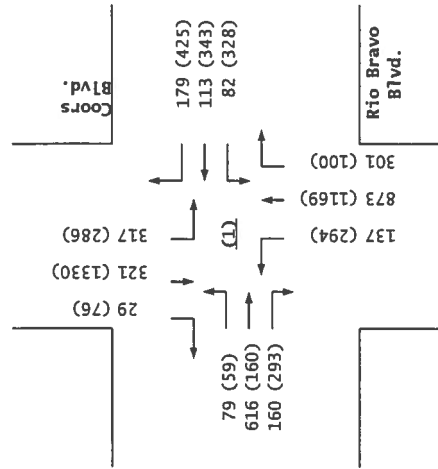
	15.07%			2.15%			3.89%			0.00%		
	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	61	473	118	79	108	172	79	469	279	317	281	29
Background Traffic Growth	18	143	36	3	5	7	6	37	22	0	0	0
Subtotal (NO BUILD - A.M.)	79	616	154	82	113	179	85	506	301	317	281	29
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	9.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	65.73%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.23%	65.73%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	6	0	0	0	52	367	0	0	40	0
Subtotal AM Pk Hr. BUILD Volumes	79	616	160	82	113	179	137	873	301	317	321	29
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	79	616	160	82	113	179	137	873	301	317	321	29

	9.33%			2.83%			3.39%			1.84%		
	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	50	135	175	310	325	402	193	511	94	276	698	73
Background Traffic Growth	9	25	33	18	18	23	13	35	6	10	26	3
Subtotal (NO BUILD - P.M.)	59	160	208	328	343	425	206	546	100	286	724	76
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	9.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	65.73%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.23%	65.73%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	85	0	0	0	88	623	0	0	606	0
Subtotal PM Pk Hr. BUILD Volumes	59	160	293	328	343	425	294	1,169	100	286	1,330	76
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	59	160	293	328	343	425	294	1,169	100	286	1,330	76

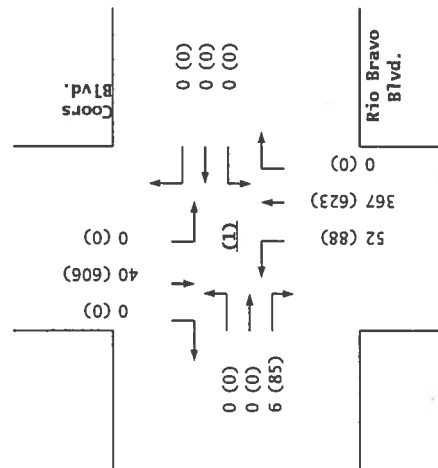
Number of Commercial Trips Generated
 Entering: 61
 Exiting: 558 A.M.
 922 948 P.M.
 100% Commercial Development

	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
2010 AM Peak Hr. Volumes	61	473	118	79	108	172	79	469	279	317	281	29
2010 PM Peak Hr. Volumes	50	135	175	310	325	402	193	511	94	276	698	73

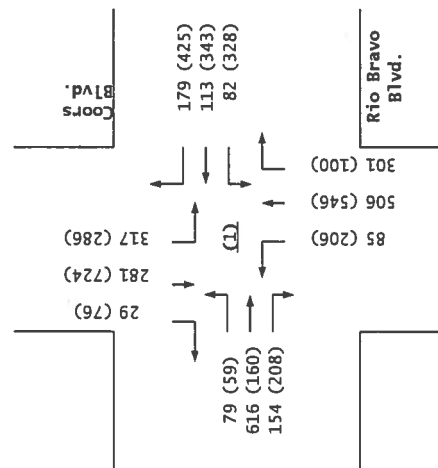
2012
BUILD



Trips



2012
NO BUILD



Rio Bravo Blvd. / Coors Blvd.

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)
Projected Turning Movements Worksheet
Rio Bravo Blvd. / Isleta Blvd.

INTERSECTION: E-W Street: Rio Bravo Blvd. (2)

N-S Street: Isleta Blvd.

Year of Existing Counts 2010

Implementation Year 2012

Growth Rates 2.49% 3.32% 1.61% 3.67%

	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	112	910	62	167	207	146	72	190	346	255	133	48
Background Traffic Growth	6	45	3	11	14	10	2	6	11	19	10	4
Subtotal (NO BUILD - A.M.)	118	955	65	178	221	156	74	196	357	274	143	52
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	8.48%	0.00%	3.97%	0.00%	0.00%	0.00%	0.00%	3.08%
Percent Commercial Trips Generated(Exiting)	3.08%	8.48%	3.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	17	47	22	0	5	0	2	0	0	0	0	2
Subtotal AM Pk Hr. BUILD Volumes	135	1,002	87	178	226	156	76	196	357	274	143	54
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	135	1,002	87	178	226	156	76	196	357	274	143	54

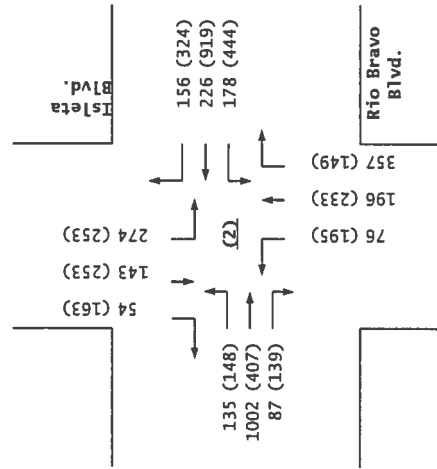
	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	114	314	97	417	791	305	152	224	143	253	253	135
Background Traffic Growth	5	13	4	27	50	19	6	9	6	0	0	0
Subtotal (NO BUILD - P.M.)	119	327	101	444	841	324	158	233	149	253	253	135
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	8.48%	0.00%	3.97%	0.00%	0.00%	0.00%	0.00%	3.08%
Percent Commercial Trips Generated(Exiting)	3.08%	8.48%	3.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	29	80	38	0	78	0	37	0	0	0	0	28
Subtotal PM Pk Hr. BUILD Volumes	148	407	139	444	919	324	195	233	149	253	253	163
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	148	407	139	444	919	324	195	233	149	253	253	163

Number of Commercial Trips Generated

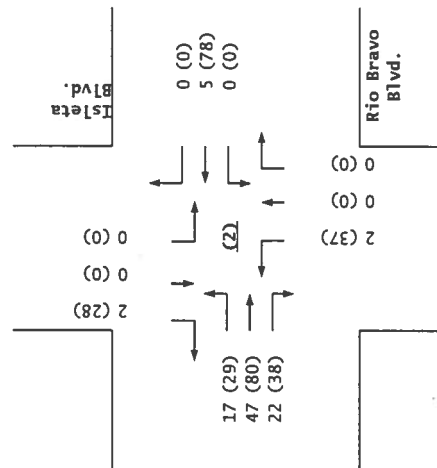
Entering	61	558	A.M.	100% Commercial Development
Exiting	922	948	P.M.	

	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2010 AM Peak Hr. Volumes	112	910	62	167	207	146	72	190	346	255	133	48
2010 PM Peak Hr. Volumes	114	314	97	417	791	305	152	224	143	253	253	135

2012
BUILD



Trips



2012
NO BUILD

Rio Bravo Blvd. / Isleta Blvd.

Las Estancias Update (Coors Blvd. S. of La Monica Dr.)
Projected Turning Movements Worksheet
Rio Bravo Blvd. / 2nd St.

INTERSECTION: E-W Street: Rio Bravo Blvd. (3)

N-S Street: 2nd St.

Year of Existing Counts 2010

Implementation Year 2012

Growth Rates

	5.80%			5.09%			5.57%			0.00%		
	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	281	1,154	106	46	395	54	153	79	59	79	75	53
Background Traffic Growth	33	134	12	5	40	6	17	9	7	0	0	0
Subtotal (NO BUILD - A.M.)	314	1,288	118	51	435	60	170	88	66	79	75	53
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	4.85%	0.00%	2.85%	0.00%	0.00%	0.00%	0.00%	0.64%
Percent Commercial Trips Generated(Exiting)	0.64%	4.85%	0.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	4	27	4	0	3	0	2	0	0	0	0	0
Subtotal AM Pk Hr. BUILD Volumes	318	1,315	122	51	438	60	172	88	66	79	75	53
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	318	1,315	122	51	438	60	172	88	66	79	75	53

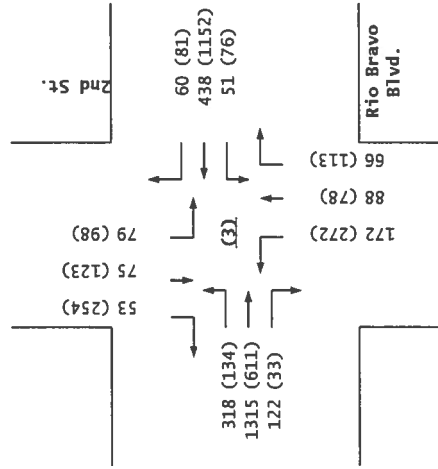
	6.97%			4.27%			2.50%			2.64%		
	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	112	496	24	70	1,020	75	234	74	108	93	117	236
Background Traffic Growth	16	69	3	6	87	6	12	4	5	5	6	12
Subtotal (NO BUILD - P.M.)	128	565	27	76	1,107	81	246	78	113	98	123	248
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	4.85%	0.00%	2.85%	0.00%	0.00%	0.00%	0.00%	0.64%
Percent Commercial Trips Generated(Exiting)	0.64%	4.85%	0.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	6	46	6	0	45	0	26	0	0	0	0	6
Subtotal PM Pk Hr. BUILD Volumes	134	611	33	76	1,152	81	272	78	113	98	123	254
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	134	611	33	76	1,152	81	272	78	113	98	123	254

Number of Commercial Trips Generated

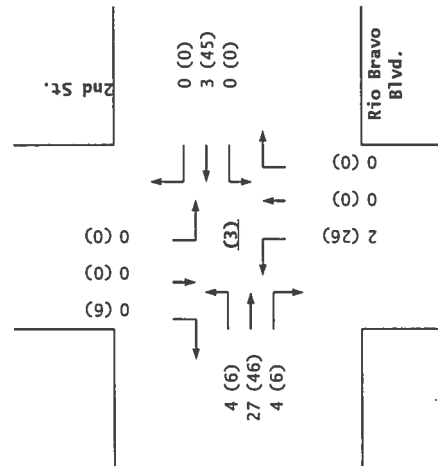
Entering	61	558	A.M.	100% Commercial Development
Exiting	922	948	P.M.	

	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)		
2010 AM Peak Hr. Volumes	281	1,154	106	46	395	54	153	79	59	79	75	53
2010 PM Peak Hr. Volumes	112	496	24	70	1,020	75	234	74	108	93	117	236

2012
BUILD

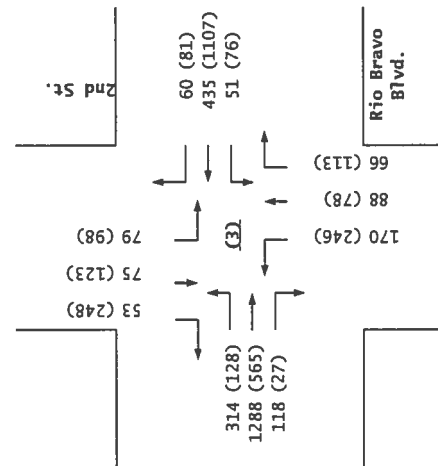


Trips



Rio Bravo Blvd. / 2nd St.

2012
NO BUILD



Las Estancias Update (Coors Blvd. S. of La Monica Dr.)
Projected Turning Movements Worksheet
Arenal Rd. / Coors Blvd.

INTERSECTION: E-W Street: Arenal Rd. (4)

N-S Street: Coors Blvd.

Year of Existing Counts 2010

Implementation Year 2012

Growth Rates

	2.15%			0.00%			0.00%			1.77%		
	Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	399	271	77	97	88	95	39	638	139	114	447	92
Background Traffic Growth	17	12	3	0	0	0	0	0	0	4	16	3
Subtotal (NO BUILD - A.M.)	416	283	80	97	88	95	39	638	139	118	463	95
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	11.13%	9.72%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.52%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.13%	21.52%	9.72%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	7	6	0	0	62	120	54	0	13	0
Subtotal AM Pk Hr. BUILD Volumes	416	283	87	103	88	95	101	758	193	118	476	95
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	416	283	87	103	88	95	101	758	193	118	476	95

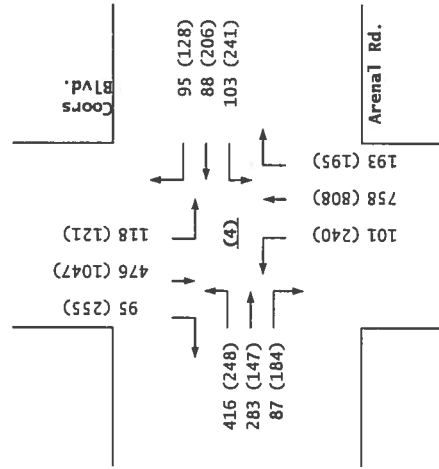
	0.00%			5.25%			0.21%			2.04%		
	Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	248	147	81	137	186	116	133	601	103	116	816	245
Background Traffic Growth	0	0	0	14	20	12	1	3	0	5	33	10
Subtotal (NO BUILD - P.M.)	248	147	81	151	206	128	134	604	103	121	849	255
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	11.13%	9.72%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.52%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.13%	21.52%	9.72%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	103	90	0	0	106	204	92	0	198	0
Subtotal PM Pk Hr. BUILD Volumes	248	147	184	241	206	128	240	808	195	121	1,047	255
Pass-by Trip Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	248	147	184	241	206	128	240	808	195	121	1,047	255

Number of Commercial Trips Generated

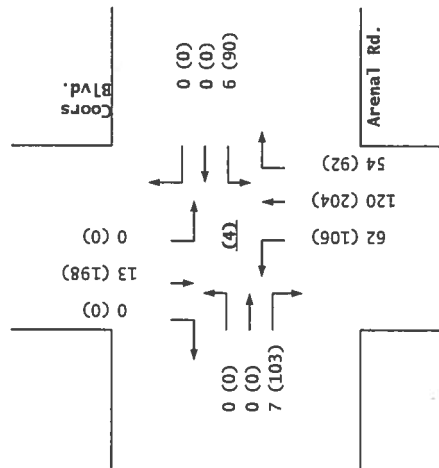
Entering	61	558	A.M.	100% Commercial Development
Exiting	922	948	P.M.	

	Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2010 AM Peak Hr. Volumes	399	271	77	97	88	95	39	638	139	114	447	92
2010 PM Peak Hr. Volumes	248	147	81	137	186	116	133	601	103	116	816	245

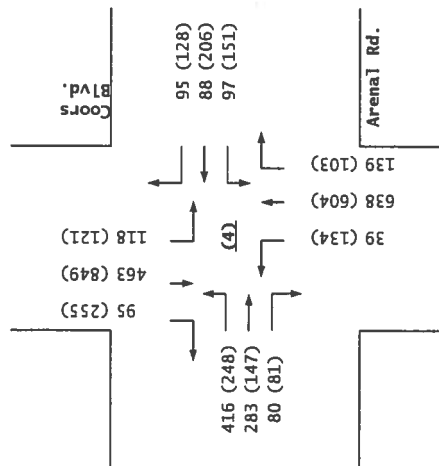
2012
BUILD



Trips



2012
NO BUILD



Arenal Rd. / Coors Blvd.

Timings
1: Rio Bravo Blvd & Coors Blvd

Terry O. Brown, P.E.
8/6/2010

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Volume (vph)	20	616	82	113	179	85	506	301	317	281	
Turn Type	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+pt	
Protected Phases	7	4	3	8	1	5	2	3	1	6	
Permitted Phases	4	8	3	8	1	5	2	3	1	6	
Detector Phases	7	4	3	8	1	5	2	3	1	6	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	10.0	48.0	22.0	60.0	24.0	10.0	36.0	22.0	24.0	50.0	
Total Split (%)	7.7%	36.9%	16.8%	48.2%	18.5%	7.7%	27.7%	16.9%	18.5%	38.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead-Lag Optimize?	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Recall Mode	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	
Act Effct Green (s)	60.9	54.3	69.3	59.7	82.8	37.7	26.5	44.6	19.2	38.6	
Actuated g/C Ratio	0.47	0.42	0.53	0.46	0.64	0.29	0.22	0.34	0.15	0.30	
v/c Ratio	0.04	0.58	0.38	0.17	0.21	0.31	0.82	0.84	0.72	0.32	
Control Delay	16.7	31.9	28.7	19.6	8.5	28.4	57.7	33.3	46.5	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.7	31.9	28.7	19.6	8.5	28.4	57.7	33.3	46.5	25.5	
LOS	B	C	C	B	A	C	E	C	D	C	
Approach Delay	31.6			16.3			46.6			36.5	
Approach LOS	C			B			D			D	
Intersection Summary											
Cycle Length: 130											
Actuated Cycle Length: 130											
Offset: 12 (9%), Referenced to phase 4:EBTL and 8:WBT, Start of Green											
Natural Cycle: 75											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.82											
Intersection Signal Delay: 35.7											
Intersection Capacity Utilization 62.8%											
Analysis Period (min) 15											

Splits and Phases: 1: Rio Bravo Blvd & Coors Blvd

HCM Signalized Intersection Capacity Analysis
1: Rio Bravo Blvd & Coors Blvd

Terry O. Brown, P.E.
8/6/2010

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	
Satd. Flow (prot)	1752	3400	1752	1845	1568	1752	3505	1568	3400	3492	
Flt Permitted	0.67	1.00	0.20	1.00	1.00	0.55	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1228	3400	360	1845	1568	1022	3505	1568	3400	3492	
Volume (vph)	20	616	82	113	179	85	506	301	317	281	
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.79	0.80	0.80	0.80	0.88	0.88	
Adj. Flow (vph)	22	670	104	143	227	106	632	376	360	319	
RTOR Reduction (vph)	0	15	0	0	66	0	49	0	1	0	
Lane Group Flow (vph)	22	822	0	104	143	161	106	632	327	326	
Turn Type	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+pt	
Protected Phases	7	4	3	8	1	5	2	3	1	6	
Permitted Phases	4	8	3	8	1	5	2	3	1	6	
Actuated Green, G (s)	58.9	53.3	69.3	58.7	76.9	35.6	27.5	38.5	18.2	37.6	
Effective Green, g (s)	60.9	54.3	70.3	59.7	78.9	37.6	28.5	40.5	19.2	38.6	
Actuated g/C Ratio	0.47	0.42	0.54	0.46	0.61	0.29	0.22	0.31	0.15	0.30	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	602	1420	323	847	1000	347	768	537	502	1037	
v/s Ratio Prot	0.00	c0.24	0.03	0.08	0.02	c0.18	c0.06	c0.11	0.09	0.15	
v/s Ratio Perm	0.02	0.14	0.14	0.08	0.07	0.07	0.15	0.15	0.07	0.15	
v/c Ratio	0.04	0.58	0.32	0.17	0.16	0.31	0.82	0.61	0.72	0.31	
Uniform Delay, d1	18.6	29.1	17.4	20.6	11.1	35.0	48.3	38.0	52.8	35.4	
Progression Factor	1.00	1.00	1.54	0.86	2.54	1.00	1.00	1.00	0.73	0.72	
Incremental Delay, d2	0.0	1.7	0.6	0.4	0.1	0.5	7.1	2.0	4.6	0.2	
Delay (s)	18.6	30.8	17.4	18.2	28.4	35.5	55.5	40.0	42.8	25.7	
Level of Service	B	C	C	B	C	D	E	D	D	C	
Approach Delay (s)	30.5			25.1			48.3		34.7		
Approach LOS	C			C			D		C		
Intersection Summary											
HCM Average Control Delay	36.9										
HCM Volume to Capacity ratio	0.66										
Actuated Cycle Length (s)	130.0										
Intersection Capacity Utilization	62.8%										
Analysis Period (min)	15										
c Critical Lane Group											

2012 AM Peak NOBUILD Conditions
D:\ATOBEP\PROJECTS\Las_Estancias_Update\Syncro2012\ANX.syt
Existing Geometry

2012 AM Peak NOBUILD Conditions
D:\ATOBEP\PROJECTS\Las_Estancias_Update\Syncro2012\ANX.syt
Existing Geometry

Timings
1: Rio Bravo Blvd & Coors Blvd

Terry O. Brown, P.E.
8/6/2010

Movement	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Volume (vph)	20	616	82	113	137	873	301	317	321
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	7	4	3	8	1	5	2	3	1
Permitted Phases	4	8	8	8	2	2	2	2	6
Detector Phases	7	4	3	8	1	5	2	3	1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Spk (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Spk (s)	10.0	44.0	12.0	46.0	22.0	10.0	22.0	22.0	44.0
Total Split (%)	7.7%	33.8%	9.2%	35.4%	16.9%	7.7%	40.0%	9.2%	49.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min
Recall Mode	49.0	42.6	53.0	44.6	66.6	53.4	45.0	57.4	18.0
Act Effect Green (s)	0.38	0.33	0.41	0.34	0.51	0.41	0.35	0.44	0.14
Actuated G/C Ratio	0.05	0.75	0.56	0.23	0.26	0.38	0.90	0.52	0.77
Control Delay	24.3	43.4	47.7	33.3	14.2	21.9	50.9	24.7	52.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	43.4	47.7	33.3	14.2	21.9	50.9	24.7	52.5
LOS	C	D	D	C	B	C	D	C	D
Approach Delay	42.9		27.3		41.9				39.3
Approach LOS	D		C		D				D
Intersection Summary									
Cycle Length: 130									
Actuated Cycle Length: 130									
Offset: 21 (16%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green									
Natural Cycle: 90									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 0.90									
Intersection Signal Delay: 39.8									
Intersection Capacity Utilization 73.2%									
Analysis Period (min) 15									



HCM Signalized Intersection Capacity Analysis
1: Rio Bravo Blvd & Coors Blvd

Terry O. Brown, P.E.
8/6/2010

Movement	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.97	0.95
Fit Protected	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3396	1752	1845	1568	1752	3505	1568	3400
Fit Permitted	0.64	1.00	0.13	1.00	1.00	0.53	1.00	0.95	1.00
Satd. Flow (perm)	1189	3396	249	1845	1568	978	3505	1568	3400
Volume (vph)	20	616	82	113	137	873	301	317	321
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.79	0.80	0.80	0.88	0.88
Adj. Flow (vph)	22	670	174	104	143	227	171	1081	376
RTOR Reduction (vph)	0	17	0	0	0	58	0	31	0
Lane Group Flow (vph)	22	827	0	104	143	169	171	1081	345
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	7	4	3	8	1	5	2	3	1
Permitted Phases	4	8	8	8	2	2	2	2	6
Actuated Green, G (s)	47.0	41.6	51.0	43.6	60.6	51.4	44.0	51.4	17.0
Effective Green, g (s)	49.0	42.6	53.0	44.6	62.6	53.4	45.0	53.4	18.0
Actuated g/C Ratio	0.38	0.33	0.41	0.34	0.48	0.41	0.35	0.41	0.14
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	476	1113	199	633	803	452	1213	692	471
v/c Ratio Prot	0.00	0.24	0.03	0.08	0.03	0.02	0.03	0.03	0.11
v/c Ratio Perm	0.02	0.18	0.18	0.08	0.13	0.19	0.19	0.19	0.11
v/c Ratio	0.05	0.74	0.52	0.23	0.21	0.38	0.90	0.50	0.76
Uniform Delay, d1	25.6	38.8	27.5	30.4	19.4	25.0	40.4	28.4	54.0
Progression Factor	1.00	1.00	1.46	1.01	1.43	1.00	1.00	1.00	0.77
Incremental Delay, d2	0.0	4.5	2.4	0.8	0.1	0.5	9.1	0.6	6.9
Delay (s)	25.6	43.3	42.6	31.6	28.0	25.5	49.5	28.9	48.3
Level of Service	C	D	D	C	C	C	D	C	C
Approach Delay (s)	42.9		32.3		42.2				37.6
Approach LOS	D		C		D				D
Intersection Summary									
HCM Average Control Delay	40.2								D
HCM Volume to Capacity ratio	0.80								D
Actuated Cycle Length (s)	130.0								16.0
Intersection Capacity Utilization	73.2%								D
Analysis Period (min)	15								D
c Critical Lane Group									D

2012 AM Peak BUILD Conditions
Existing Geometry
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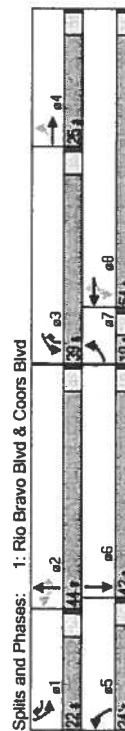
2012 AM Peak BUILD Conditions
Existing Geometry
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Timings
1: Rio Bravo Blvd & Coors Blvd

Terry O. Brown, P.E.
8/6/2010

	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	14	160	328	343	425	206	546	100	286
Volume (vph)	14	160	328	343	425	206	546	100	286
Turn Type	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	Prot	Prot
Protected Phases	7	4	3	8	1	5	2	3	1
Permitted Phases	4	8	8	8	2	2	2	2	6
Detector Phases	7	4	3	8	1	5	2	3	1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	25.0	39.0	54.0	22.0	44.0	39.0	22.0	42.0
Total Split (%)	7.7%	19.2%	30.0%	41.5%	16.9%	18.5%	33.8%	30.0%	16.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead-Lag Optimize?	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Recall Mode	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min
Act Effect Green (s)	42.8	36.3	65.3	54.8	78.8	50.7	32.7	61.6	20.0
Actuated g/c Ratio	0.33	0.28	0.50	0.42	0.61	0.39	0.25	0.47	0.15
v/c Ratio	0.04	0.39	0.83	0.51	0.48	0.73	0.65	0.13	0.59
Control Delay	23.1	21.9	28.8	21.3	5.3	44.8	46.5	2.3	63.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	21.9	28.8	21.3	5.3	44.8	46.5	2.3	63.1
LOS	C	C	C	C	A	D	D	A	E
Approach Delay	21.9		17.3			40.9			47.0
Approach LOS	C		B			D			D
Intersection Summary									
Cycle Length: 130									
Actuated Cycle Length: 130									
Offset: 58 (45%) Referenced to phase 4:EBTL and 8:WBTL, Start of Green									
Natural Cycle: 80									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 0.86									
Intersection Signal Delay: 32.5									
Intersection Capacity Utilization 74.7%									
Analysis Period (min) 15									



HCM Signalized Intersection Capacity Analysis
1: Rio Bravo Blvd & Coors Blvd

Terry O. Brown, P.E.
8/6/2010

	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Movement	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	14	160	328	343	425	206	546	100	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.97	0.95
Fit Protected	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3208	1752	1845	1568	1752	3505	1568	3400
Fit Permitted	0.53	1.00	0.35	1.00	1.00	0.12	1.00	0.95	1.00
Satd. Flow (perm)	977	3208	640	1845	1568	226	3505	1568	3400
Volume (vph)	14	160	208	328	343	425	206	546	100
Peak-hour factor, PHF	0.89	0.89	0.89	0.87	0.87	0.95	0.95	0.95	0.92
Adj. Flow (vph)	16	180	234	377	394	489	217	575	105
RTOR Reduction (vph)	0	155	0	0	0	81	0	58	0
Lane Group Flow (vph)	16	259	0	377	394	408	217	575	47
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	Prot	Prot
Protected Phases	7	4	3	8	1	5	2	3	1
Permitted Phases	4	8	8	8	2	2	2	2	6
Actuated Green, G (s)	40.8	35.4	64.3	53.9	72.9	48.7	31.7	55.6	19.0
Effective Green, g (s)	42.8	36.4	65.3	54.9	74.9	50.7	32.7	57.6	20.0
Actuated g/c Ratio	0.33	0.28	0.50	0.42	0.58	0.39	0.25	0.44	0.15
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	360	898	534	779	952	299	882	743	523
v/c Ratio Prot	0.00	0.08	c0.14	0.21	0.07	c0.10	0.16	0.01	0.08
v/c Ratio Perm	0.01	0.22	c0.22	0.19	0.18	0.02	0.02	0.06	0.87
v/c Ratio	0.04	0.29	0.71	0.51	0.43	0.73	0.65	0.06	0.87
Uniform Delay, d1	29.5	36.7	21.6	27.6	15.5	30.5	43.6	20.7	51.2
Progression Factor	1.00	1.00	0.57	0.64	0.43	1.00	1.00	1.00	1.14
Incremental Delay, d2	0.1	0.8	3.7	2.1	0.3	8.5	1.7	0.0	1.6
Delay (s)	29.6	37.5	16.0	19.8	6.9	39.0	45.3	20.8	60.2
Level of Service	C	D	B	B	A	D	D	C	E
Approach Delay (s)	37.2		13.7			40.9			45.1
Approach LOS	D		B			D			D
Intersection Summary									
HCM Average Control Delay	32.5								C
HCM Volume to Capacity ratio	0.73								C
Actuated Cycle Length (s)	130.0								8.0
Intersection Capacity Utilization	74.7%								D
Analysis Period (min)	15								D
c Critical Lane Group									D

2012 PM Peak NOBUILD Conditions
Existing Geometry
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2012 PM Peak NOBUILD Conditions
Existing Geometry
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Timings

1: Rio Bravo Blvd & Coors Blvd

8/26/2010

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	1A	1A	1A	1A	1A	1A	1A	1A	1A
Volume (vph)	14	160	328	343	425	294	1169	100	286
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	4	3	8	1	5	2	3	1	6
Permitted Phases	4	8	8	8	2	2	2	2	2
Detector Phase	7	4	3	8	1	5	2	3	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Minimum Split (s)	10.0	21.0	28.0	39.0	21.0	23.0	60.0	28.0	21.0
Total Split (%)	7.7%	16.2%	21.5%	30.0%	16.2%	17.7%	46.2%	21.5%	16.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min
Recall Mode	22.0	16.0	44.0	34.0	54.3	76.5	57.7	85.7	16.4
Act Eff Green (s)	0.17	0.12	0.34	0.26	0.42	0.59	0.44	0.66	0.13
Actuated g/C Ratio	0.10	0.06	0.99	0.82	0.69	0.95	0.79	0.10	0.73
v/c Ratio	31.4	45.9	75.4	44.2	19.2	77.6	36.1	2.5	58.2
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	31.4	45.9	75.4	44.2	19.2	77.6	36.1	2.5	58.2
Total Delay	31.4	45.9	75.4	44.2	19.2	77.6	36.1	2.5	58.2
LOS	C	D	E	D	B	E	D	A	E
Approach Delay	45.4	43.8							
Approach LOS	D	D							
Intersection Summary									
Cycle Length: 130									
Actuated Cycle Length: 130									
Offset: 44 (34%), Referenced to phase 4:EBTL and 8:WBT, Start of Green									
Natural Cycle: 120									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 1.01									
Intersection Signal Delay: 50.4									
Intersection Capacity Utilization 99.0%									
Analysis Period (min) 15									
Splits and Phases:	a1	a2	a3	a4	a5	a6	a7	a8	a9

Splits and Phases: 1: Rio Bravo Blvd & Coors Blvd



2012 PM Peak BUILD Conditions 7/20/2010 Existing Geometry

Terry O. Brown, PE

Synchro 7 - Report

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HCM Signalized Intersection Capacity Analysis

1: Rio Bravo Blvd & Coors Blvd

8/26/2010

Movement	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	1A	1A	1A	1A	1A	1A	1A	1A	1A
Volume (vph)	14	160	328	343	425	294	1169	100	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.95
Flt	1.00	0.90	1.00	1.00	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1752	3165	1752	1845	1568	1752	3505	1568	3497
Flt Permitted	0.37	1.00	0.20	1.00	1.00	0.07	1.00	1.00	0.95
Satd. Flow (perm)	674	3165	371	1845	1568	128	3505	1568	3497
Peak-hour factor, PHF	0.89	0.89	0.89	0.87	0.87	0.87	0.95	0.95	0.92
Adj. Flow (vph)	16	180	329	377	394	489	1231	105	311
RTOR Reduction (vph)	0	201	0	0	0	59	0	33	0
Lane Group Flow (vph)	16	308	0	377	394	430	1231	72	311
Turn Type	pm+pt	4	pm+pt	3	8	1	5	2	3
Protected Phases	7	4	pm+pt	3	8	1	5	2	3
Permitted Phases	4	8	8	8	2	2	2	2	2
Actuated Green, G (s)	19.9	14.9	42.9	32.9	48.3	75.7	56.7	79.7	15.4
Effective Green, g (s)	21.9	15.9	43.9	33.9	50.3	77.7	57.7	81.7	16.4
Actuated g/C Ratio	0.17	0.12	0.34	0.26	0.39	0.60	0.44	0.63	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	163	387	380	481	655	326	1556	1034	429
v/c Ratio Prot	0.00	0.10	0.18	0.21	0.08	0.15	0.35	0.01	0.09
v/c Ratio Perm	0.01	0.80	0.99	0.82	0.66	0.95	0.79	0.07	0.72
Uniform Delay, d1	45.5	55.5	37.8	45.2	32.7	42.7	31.0	9.4	54.6
Progression Factor	1.00	1.00	0.93	0.70	0.60	1.00	1.00	1.00	0.90
Incremental Delay, d2	0.3	15.5	39.7	12.2	2.0	35.9	2.8	0.0	5.1
Delay (s)	45.7	71.0	74.8	43.9	21.7	78.5	33.8	9.4	65.9
Level of Service	D	E	E	D	C	E	C	A	D
Approach Delay (s)	70.2		44.6		40.7				63.9
Approach LOS	E		D		D				E
Intersection Summary									
HCM Average Control Delay	52.5								D
HCM Volume to Capacity ratio	1.02								
Actuated Cycle Length (s)	130.0								16.0
Intersection Capacity Utilization	99.0%								E
Analysis Period (min)	15								
c Critical Lane Group									

2012 PM Peak BUILD Conditions 7/20/2010 Existing Geometry

Terry O. Brown, PE

Synchro 7 - Report

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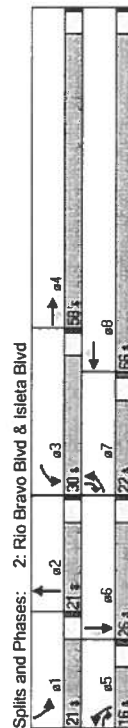
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Timings
2: Rio Bravo Blvd & Isleta Blvd

Terry O. Brown, P.E.

7/20/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	118	955	65	178	221	156	74	196	357	274	143	52
Volume (vph)	118	955	65	178	221	156	74	196	357	274	143	52
Turn Type	Prot	pm+ov	pm+ov	Prot	pm+ov	pm+ov	Prot	pm+ov	Free	Prot	pm+ov	pm+ov
Protected Phases	7	4	5	3	8	5	2	5	2	1	6	7
Permitted Phases	7	4	5	3	8	5	2	5	2	1	6	7
Detector Phases	7	4	5	3	8	5	2	5	2	1	6	7
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	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	22.0	58.0	16.0	30.0	66.0	16.0	21.0	0.0	21.0	26.0	22.0	22.0
Total Split (%)	16.9%	44.6%	12.3%	23.1%	50.8%	12.3%	16.2%	0.0%	16.2%	20.0%	16.9%	16.9%
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	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	1.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	C-Min	Min	C-Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min
Recall Mode	15.7	62.4	77.5	21.3	68.1	11.1	14.2	130.0	16.0	19.2	38.9	19.2
Act Effct Green (s)	0.12	0.48	0.60	0.16	0.52	0.09	0.11	1.00	0.12	0.15	0.30	0.30
Actuated g/C Ratio	0.66	0.68	0.08	0.77	0.15	0.21	0.57	0.59	0.26	0.70	0.30	0.11
v/c Ratio	64.8	26.4	4.5	66.6	13.6	2.3	72.2	61.2	0.4	64.3	50.4	7.8
Control 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
Queue Delay	64.8	26.4	4.5	66.6	13.6	2.3	72.2	61.2	0.4	64.3	50.4	7.8
LOS	E	C	A	E	B	A	E	E	A	E	D	A
Approach Delay	29.1			27.4			27.9				53.8	
Approach LOS	C			C			C				D	



HCM Signalized Intersection Capacity Analysis
2: Rio Bravo Blvd & Isleta Blvd

Terry O. Brown, P.E.

7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Fit	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Volume (vph)	118	955	65	178	221	156	74	196	357	274	143	52
Peak-hour factor, PHF	0.84	0.84	0.84	0.81	0.81	0.81	0.87	0.87	0.87	0.93	0.93	0.93
Adj. Flow (vph)	140	1137	77	220	273	193	85	225	410	295	154	56
RTOR Reduction (vph)	0	0	29	0	0	0	92	0	0	0	0	41
Lane Group Flow (vph)	140	1137	48	220	273	101	85	225	410	295	154	15
Turn Type	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov	Prot	pm+ov	Free	Prot	pm+ov	pm+ov
Protected Phases	7	4	5	3	8	5	2	5	2	1	6	7
Permitted Phases	7	4	5	3	8	5	2	5	2	1	6	7
Actuated Green, G (s)	14.7	61.4	71.5	20.3	67.0	67.0	10.1	13.3	130.0	15.0	18.2	32.9
Effective Green, g (s)	15.7	62.4	73.5	21.3	68.0	68.0	11.1	14.3	130.0	16.0	19.2	34.9
Actuated g/C Ratio	0.12	0.48	0.57	0.16	0.52	0.52	0.09	0.11	1.00	0.12	0.15	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	212	1692	935	287	1833	820	150	386	1568	418	518	469
v/s Ratio Prot	0.08	c0.32	0.00	c0.13	0.08	0.05	c0.06	c0.09	0.04	0.00	0.00	0.01
v/s Ratio Perm	0.66	0.68	0.05	0.77	0.15	0.12	0.57	0.58	0.26	0.71	0.30	0.03
Uniform Delay, d1	54.6	26.0	12.6	52.0	16.0	15.8	57.1	55.0	0.0	54.7	49.4	35.1
Progression Factor	0.96	0.88	1.05	0.98	0.78	0.69	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	1.8	0.0	10.8	0.2	0.3	4.8	2.2	0.4	5.4	0.3	0.0
Delay (s)	58.8	24.7	13.4	61.6	12.6	11.3	62.0	57.3	0.4	60.1	49.7	35.1
Level of Service	E	C	B	E	B	B	E	E	A	E	D	D
Approach Delay (s)	27.6			27.9			25.4			54.2		
Approach LOS	C			C			C			D		

Intersection Summary

HCM Average Control Delay 31.3 HCM Level of Service C

HCM Volume to Capacity ratio 0.69

Actuated Cycle Length (s) 130.0 Sum of lost time (s) 16.0

Intersection Capacity Utilization 62.8% ICU Level of Service B

Analysis Period (min) 15

c Critical Lane Group

2012 AM Peak NOBUILD Conditions

Existing Geometry

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2012 AM Peak NOBUILD Conditions

Existing Geometry

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Timings
2: Rio Bravo Blvd & Isleta Blvd
Terry O. Brown, P.E.
7/20/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖	↖	↖	↖	↖	↖	↖
Volume (vph)	135	1002	87	178	226	156	76	196	357	274	143	54
Turn Type	Prot	pm+ov	Prot	Prot	Perm	Prot	Prot	Free	Free	Prot	pm+ov	Prot
Protected Phases	7	4	5	3	8	8	5	2	1	6	7	↖
Permitted Phases	7	4	4	5	3	8	8	5	2	1	6	7
Detector Phases	7	4	5	3	8	8	5	2	1	6	7	↖
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	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	24.0	60.0	17.0	29.0	65.0	65.0	17.0	21.0	0.0	20.0	24.0	24.0
Total Split (%)	18.5%	46.2%	13.1%	22.3%	50.0%	50.0%	13.1%	16.2%	0.0%	15.4%	18.5%	18.5%
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	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	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Min	C-Min	Min	Min	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Recall Mode	16.6	62.4	78.3	21.3	67.1	67.1	11.9	14.2	130.0	16.1	18.4	39.0
Act Effct Green (s)	0.13	0.48	0.60	0.16	0.52	0.52	0.09	0.11	1.00	0.12	0.14	0.30
Actuated g/C Ratio	0.72	0.71	0.11	0.77	0.15	0.21	0.54	0.59	0.26	0.70	0.31	0.11
v/c Ratio	76.5	23.8	1.9	66.6	14.1	2.4	68.9	61.2	0.4	64.2	51.5	7.6
Control 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
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	76.5	23.8	1.9	66.6	14.1	2.4	68.9	61.2	0.4	64.2	51.5	7.6
LOS	E	C	A	E	B	A	E	E	A	E	D	A
Approach Delay	28.1				27.5			27.6			53.8	
Approach LOS	C				C			C			D	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 42 (32%), Referenced to phase 4:EBT and 8:WBT, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.77												
Intersection Signal Delay: 31.7												
Intersection Capacity Utilization 64.1%												
Analysis Period (min) 15												
Spills and Phases: 2: Rio Bravo Blvd & Isleta Blvd												

HCM Signalized Intersection Capacity Analysis
2: Rio Bravo Blvd & Isleta Blvd
Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Volume (vph)	135	1002	87	178	226	156	76	196	357	274	143	54
Peak-hour factor, PHF	0.84	0.84	0.84	0.81	0.81	0.81	0.87	0.87	0.87	0.93	0.93	0.93
Adj. Flow (vph)	161	1193	104	220	279	193	87	225	410	295	154	58
RTOR Reduction (vph)	0	0	39	0	0	0	93	0	0	0	0	42
Lane Group Flow (vph)	161	1193	65	220	279	100	87	225	410	295	154	16
Turn Type	Prot	pm+ov	Prot	Prot	Perm	Prot	Prot	Free	Free	Prot	pm+ov	Prot
Protected Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Permitted Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Actuated Green, G (s)	15.6	61.4	72.3	20.3	66.1	66.1	10.9	13.2	130.0	15.1	17.4	33.0
Effective Green, g (s)	16.6	62.4	73.3	21.3	67.1	67.1	11.9	14.2	130.0	16.1	18.4	35.0
Actuated g/C Ratio	0.13	0.48	0.57	0.16	0.52	0.52	0.09	0.11	1.00	0.12	0.14	0.27
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	1682	944	287	1809	809	160	383	1568	421	496	470
v/s Ratio Prot	0.09	c0.34	0.01	c0.13	0.08	0.05	c0.06	c0.09	0.04	0.00	0.01	0.01
v/s Ratio Perm	0.72	0.71	0.07	0.77	0.15	0.12	0.54	0.59	0.26	0.70	0.31	0.03
Uniform Delay, d1	54.5	26.6	12.4	52.0	16.5	16.2	56.5	55.1	0.0	54.6	50.1	35.0
Progression Factor	1.15	0.77	0.51	0.97	0.78	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	2.0	0.0	10.8	0.2	0.3	3.7	2.3	0.4	5.2	0.4	0.0
Delay (s)	71.1	22.4	6.3	61.3	13.0	11.4	60.2	57.4	0.4	59.8	50.5	35.1
Level of Service	E	C	A	E	B	B	E	E	A	E	D	D
Approach Delay (s)	26.7			27.9			25.4			54.2		
Approach LOS	C			C			C			D		
Intersection Summary												
HCM Average Control Delay	30.8											
HCM Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	130.0											
Intersection Capacity Utilization	64.1%											
Analysis Period (min)	15											
c Critical Lane Group												

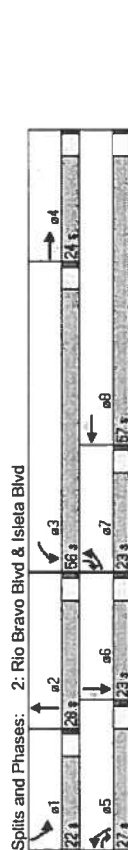
Timings

Terry O. Brown, P.E.

7/20/2010

2: Rio Bravo Blvd & Isleta Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	119	327	101	444	841	324	158	233	149	253	253	135
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Turn Type	Prot	pm+ov	Prot	Prot	Prot	Perm	Prot	Prot	Free	Prot	pm+ov	Prot
Protected Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Permitted Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Detector Phases	7	4	5	3	8	8	5	2	Free	1	6	7
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	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	10.0	10.0
Total Split (s)	23.0	24.0	27.0	56.0	57.0	27.0	28.0	0.0	22.0	23.0	23.0	23.0
Total Split (%)	17.7%	18.5%	20.8%	43.1%	43.8%	20.8%	21.5%	0.0%	16.9%	17.7%	17.7%	17.7%
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	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	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	Min	C-Min	Min	Min	C-Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	15.0	28.6	50.6	51.7	65.3	65.3	18.0	18.0	130.0	15.8	15.8	34.7
Actuated g/C Ratio	0.12	0.22	0.39	0.40	0.50	0.50	0.14	0.14	1.00	0.12	0.12	0.27
v/c Ratio	0.63	0.45	0.16	0.69	0.52	0.37	0.69	0.51	0.10	0.64	0.63	0.28
Control Delay	53.2	56.8	11.0	22.8	16.2	2.2	67.2	54.8	0.1	61.8	60.8	8.7
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	53.2	56.8	11.0	22.8	16.2	2.2	67.2	54.8	0.1	61.8	60.8	8.7
LOS	D	E	B	C	B	A	E	D	A	E	E	A
Approach Delay	47.6				15.2			43.3			50.2	
Approach LOS	D				B			D			D	



HCM Signalized Intersection Capacity Analysis

Terry O. Brown, P.E.

7/20/2010

2: Rio Bravo Blvd & Isleta Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	119	327	101	444	841	324	158	233	149	253	253	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Volume (vph)	119	327	101	444	841	324	158	233	149	253	253	135
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	127	348	107	483	914	352	166	245	157	266	266	142
RTOR Reduction (vph)	0	0	69	0	0	175	0	0	0	0	0	96
Lane Group Flow (vph)	127	348	38	483	914	177	166	245	157	266	266	46
Turn Type	Prot	pm+ov	Prot	Prot	Prot	Perm	Prot	Prot	Free	Prot	pm+ov	Prot
Protected Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Permitted Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Actuated Green, G (s)	14.0	27.5	44.5	50.7	64.2	64.2	17.0	17.0	130.0	14.8	14.8	28.8
Effective Green, g (s)	15.0	28.5	46.5	51.7	65.2	65.2	18.0	18.0	130.0	15.8	15.8	30.8
Actuated g/C Ratio	0.12	0.22	0.36	0.40	0.50	0.50	0.14	0.14	1.00	0.12	0.12	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	768	609	697	1758	786	243	485	1568	413	426	420
v/s Ratio Prot	0.07	0.10	0.01	c0.28	c0.26		c0.09	0.07		0.08	c0.08	0.01
v/s Ratio Perm			0.02			0.11			c0.10			0.02
v/c Ratio	0.63	0.45	0.06	0.69	0.52	0.22	0.68	0.51	0.10	0.64	0.62	0.11
Uniform Delay, d1	54.8	44.0	27.4	32.6	21.8	18.2	53.3	51.9	0.0	54.4	54.3	38.9
Progression Factor	0.74	1.17	2.04	0.61	0.66	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	1.8	0.0	1.4	0.5	0.3	7.7	0.8	0.1	3.4	2.8	0.1
Delay (s)	46.1	53.3	56.1	21.4	14.9	12.6	61.0	52.7	0.1	57.8	57.1	39.0
Level of Service	D	D	E	C	B	B	E	D	A	E	E	D
Approach Delay (s)	52.2			16.2				40.6		53.6		
Approach LOS	D			B				D		D		

Intersection Summary	
HCM Average Control Delay	33.0
HCM Volume to Capacity ratio	0.63
Actuated Cycle Length (s)	130.0
Intersection Capacity Utilization	62.7%
Analysis Period (min)	15
c Critical Lane Group	

2012 PM Peak NOBUILD Conditions

Existing Geometry

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2012 PM Peak NOBUILD Conditions

Existing Geometry

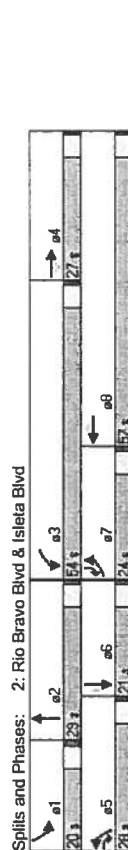
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Timings
2: Rio Bravo Blvd & Isleta Blvd

Terry O. Brown, P.E.

7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	148	407	139	444	919	324	195	233	149	253	253	163
Volume (vph)	148	407	139	444	919	324	195	233	149	253	253	163
Turn Type	Prot	pm+ov	Prot	Perm	Prot	Perm	Prot	Free	Free	Prot	pm+ov	Prot
Protected Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Permitted Phases	7	4	5	3	8	8	5	2	Free	1	6	7
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	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	10.0	10.0
Total Split (s)	24.0	27.0	28.0	54.0	57.0	28.0	29.0	0.0	20.0	21.0	24.0	24.0
Total Split (%)	18.5%	20.8%	21.5%	41.5%	43.8%	43.8%	22.3%	0.0%	15.4%	16.2%	18.5%	18.5%
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	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	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	Min	C-Min	Min	Min	C-Min	Min	Min	Min	Min	Min	Min	Min
Act Eff Green (s)	16.8	29.8	54.1	48.7	61.7	61.7	20.3	20.5	130.0	15.0	15.3	36.0
Actuated g/C Ratio	0.13	0.23	0.42	0.37	0.47	0.47	0.16	0.16	1.00	0.12	0.12	0.28
v/c Ratio	0.69	0.54	0.20	0.74	0.60	0.38	0.75	0.44	0.10	0.68	0.65	0.34
Control Delay	64.1	58.8	1.3	24.8	18.7	2.5	69.3	51.3	0.1	64.2	62.3	16.7
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	64.1	58.8	1.3	24.8	18.7	2.5	69.3	51.3	0.1	64.2	62.3	16.7
LOS	E	E	A	C	B	A	E	D	A	E	E	B
Approach Delay	48.4							44.1			51.9	
Approach LOS	D							D			D	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 44 (34%), Referenced to phase 4:EBT and 8:WBT, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.75												
Intersection Signal Delay: 33.6												
Intersection Capacity Utilization 67.0%												
Analysis Period (min) 15												



HCM Signalized Intersection Capacity Analysis
2: Rio Bravo Blvd & Isleta Blvd

Terry O. Brown, P.E.

7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1752	3505	1568	1752	3505	1568	1752	3505	1568	3400	3505	1568
Volume (vph)	148	407	139	444	919	324	195	233	149	253	253	163
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	433	148	483	999	352	205	245	157	266	266	172
RTOR Reduction (vph)	0	0	91	0	0	185	0	0	0	0	0	75
Lane Group Flow (vph)	157	433	57	483	999	167	205	245	157	266	266	97
Turn Type	Prot	pm+ov	Prot	pm+ov	Prot	Perm	Prot	Free	Prot	Free	pm+ov	Prot
Protected Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Permitted Phases	7	4	5	3	8	8	5	2	Free	1	6	7
Actuated Green, G (s)	15.8	28.7	48.0	47.7	60.6	60.6	19.3	19.6	130.0	14.0	14.3	30.1
Effective Green, g (s)	16.8	29.7	50.0	48.7	61.6	61.6	20.3	20.6	130.0	15.0	15.3	32.1
Actuated g/C Ratio	0.13	0.23	0.38	0.37	0.47	0.47	0.16	0.16	1.00	0.12	0.12	0.25
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	801	651	656	1661	743	274	555	1568	392	413	435
v/s Ratio Prot	0.09	0.12	0.01	c0.28	c0.29	c0.12	0.07	0.10	0.08	c0.08	0.03	0.03
v/s Ratio Perm	0.69	0.54	0.09	0.74	0.60	0.22	0.75	0.44	0.10	0.68	0.64	0.22
Uniform Delay, d1	54.1	44.1	25.5	35.1	25.2	20.1	52.4	49.5	0.0	55.2	54.8	39.0
Progression Factor	0.93	1.22	0.20	0.62	0.67	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	2.3	0.1	1.7	0.6	0.3	10.6	0.6	0.1	4.6	3.4	0.3
Delay (s)	58.0	56.0	5.1	23.4	17.4	16.1	63.0	50.1	0.1	59.8	58.2	39.3
Level of Service	E	E	A	C	B	B	E	D	A	E	E	D
Approach Delay (s)	46.2						41.5				54.2	
Approach LOS	D						D				D	
Intersection Summary												
HCM Average Control Delay	33.9											
HCM Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	130.0											
Intersection Capacity Utilization	67.0%											
Analysis Period (min)	15											
c Critical Lane Group												

2012 PM Peak BUILD Conditions

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2012 PM Peak BUILD Conditions

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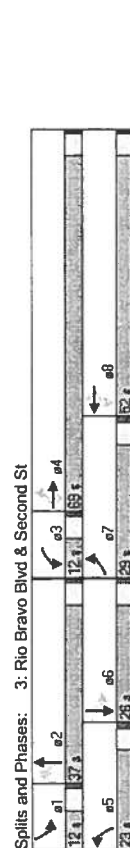
Existing Geometry

Timings
3: Rio Bravo Blvd & Second St

HCM Signalized Intersection Capacity Analysis
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	11	11	11	11	11	11	11	11	11	11
Volume (vph)	314	1288	118	51	435	60	170	88	79	75
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	4	4	4	4	4	4	4	4	4	4
Permitted Phases	4	4	4	4	4	4	4	4	4	4
Detector Phases	4	4	4	4	4	4	4	4	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	29.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0
Total Spill (%)	22.3%	53.1%	53.1%	53.1%	53.1%	53.1%	53.1%	53.1%	53.1%	53.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Min	C-Min	C-Min	Min	C-Min	C-Min	Min	C-Min	C-Min	Min
Recall Mode	83.6	71.8	71.8	74.5	66.6	66.6	38.3	25.6	25.6	16.8
Act Effort Green (s)	0.64	0.55	0.55	0.57	0.51	0.51	0.29	0.20	0.20	0.13
Actuated g/C Ratio	0.67	0.71	0.71	0.71	0.30	0.30	0.09	0.60	0.51	0.39
v/c Ratio	12.3	11.3	0.7	14.8	20.2	4.9	43.1	43.1	38.5	61.0
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	12.3	11.3	0.7	14.8	20.2	4.9	43.1	43.1	38.5	61.0
Total Delay	B	B	A	B	C	A	D	D	D	E
LOS	B	B	A	B	C	A	D	D	D	E
Approach Delay	10.7	B	B	18.0	B	B	D	D	D	D
Approach LOS	B	B	B	B	B	B	D	D	D	D



Splits and Phases: 3: Rio Bravo Blvd & Second St

Intersection Summary	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Cycle Length: 130	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Actuated Cycle Length: 130	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Offset: 17 (13%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Natural Cycle: 75	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Control Type: Actuated-Coordinated	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Maximum v/c Ratio: 0.71	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Intersection Signal Delay: 19.9	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Intersection Capacity Utilization 69.7%	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s
Analysis Period (min) 15	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s	12 s	13 s

Intersection LOS: B
ICU Level of Service C

Terry O. Brown, P.E.
7/20/2010

HCM Signalized Intersection Capacity Analysis
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	11	11	11	11	11	11	11	11	11	11	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.94	1.00	0.94	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	1726	1752	1730	1730
Flt Permitted	0.38	1.00	1.00	1.00	0.11	1.00	0.28	1.00	0.64	1.00	1.00
Satd. Flow (perm)	694	3505	1568	202	3505	1568	513	1726	1181	1730	1730
Volume (vph)	314	1288	118	51	435	60	170	88	66	79	75
Peak-hour factor, PHF	0.94	0.94	0.94	0.81	0.81	0.81	0.83	0.83	0.83	0.75	0.75
Adj. Flow (vph)	334	1370	126	63	537	74	205	106	80	105	100
RTOR Reduction (vph)	0	0	51	0	0	36	0	22	0	0	21
Lane Group Flow (vph)	334	1370	75	63	537	38	205	164	0	105	150
Turn Type	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Protected Phases	7	4	4	3	8	8	5	2	1	6	6
Permitted Phases	4	4	4	8	8	8	2	2	6	6	6
Actuated Green, G (s)	82.7	70.8	70.8	72.5	65.6	65.6	37.3	24.6	23.5	15.8	15.8
Effective Green, g (s)	83.7	71.8	71.8	74.5	66.6	66.6	38.3	25.6	25.5	16.8	16.8
Actuated g/C Ratio	0.64	0.55	0.55	0.57	0.51	0.51	0.29	0.20	0.20	0.13	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	553	1936	866	210	1796	803	318	340	270	224	224
v/s Ratio Prot	c0.06	c0.39	c0.02	0.02	0.15	0.02	c0.09	0.09	0.03	0.09	0.09
v/s Ratio Perm	0.33	0.71	0.09	0.30	0.30	0.05	0.64	0.48	0.39	0.67	0.67
v/c Ratio	11.1	21.4	13.7	16.4	18.3	15.8	37.3	46.3	44.7	54.0	54.0
Uniform Delay, d1	0.56	0.41	0.12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	1.5	1.8	0.2	0.8	0.4	0.1	4.4	1.1	0.9	7.6	7.6
Incremental Delay, d2	7.8	10.6	1.7	17.2	18.7	16.0	41.7	47.4	45.6	61.6	61.6
Delay (s)	A	B	A	B	B	B	D	D	D	E	E
Level of Service	A	B	A	B	B	B	D	D	D	E	E
Approach Delay (s)	9.5	A	9.5	18.2	B	B	44.4	D	55.5	E	E
Approach LOS	A	A	A	B	B	B	D	D	D	E	E

Intersection Summary

HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

2012 AM Peak NOBUILD Conditions
Existing Geometry

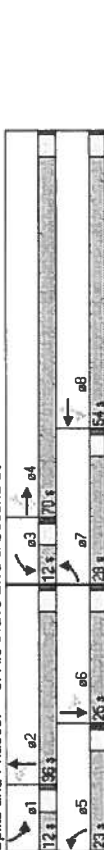
2012 AM Peak NOBUILD Conditions
Existing Geometry

Timings
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	318	1315	122	51	438	60	172	88	79	75
Volume (vph)	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Turn Type	7	4	4	4	8	8	2	2	1	6
Protected Phases	4	4	4	4	8	8	2	2	1	6
Detector Phases	7	4	4	4	8	8	2	2	1	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	28.0	70.0	70.0	12.0	54.0	54.0	23.0	36.0	12.0	25.0
Total Split (%)	21.5%	53.8%	53.8%	9.2%	41.5%	41.5%	17.7%	27.7%	9.2%	19.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	C-Min	C-Min	Min	C-Min	C-Min	Min	C-Min	Min	C-Min
Recall Mode	83.4	71.9	71.9	75.0	67.1	67.1	38.2	25.5	25.4	16.7
Act Effct Green (s)	0.64	0.55	0.55	0.58	0.52	0.52	0.29	0.20	0.20	0.13
Actuated g/C Ratio	0.68	0.72	0.14	0.32	0.30	0.09	0.61	0.52	0.39	0.71
Control Delay	12.1	11.8	0.7	14.9	19.9	4.8	43.8	43.3	38.8	62.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	11.8	0.7	14.9	19.9	4.8	43.8	43.3	38.8	62.2
LOS	B	B	A	B	B	A	D	D	D	E
Approach Delay	11.1	B	B	17.8	B	B	D	D	D	53.3
Approach LOS	B	B	B	B	B	B	D	D	D	D

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 20.1
Intersection Capacity Utilization 70.6%
Analysis Period (min) 15



2012 AM Peak BUILD Conditions
Existing Geometry
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HCM Signalized Intersection Capacity Analysis
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.94	1.00	0.94	1.00
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Fit Protected	1752	3505	1568	1752	3505	1568	1752	1726	1752	1730	1752
Satd. Flow (prot)	0.38	1.00	1.00	0.10	1.00	1.00	0.28	1.00	0.64	1.00	1.00
Fit Permitted	693	3505	1568	188	3505	1568	509	1726	1181	1730	1752
Satd. Flow (perm)	318	1315	122	51	438	60	172	88	79	75	53
Volume (vph)	0.94	0.94	0.94	0.81	0.81	0.81	0.83	0.83	0.83	0.75	0.75
Peak-hour factor, PHF	338	1399	130	63	541	74	207	106	80	105	100
Adj. Flow (vph)	0	0	53	0	0	0	36	0	23	0	20
RTOR Reduction (vph)	338	1399	77	63	541	38	207	163	0	105	151
Lane Group Flow (vph)	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt	pm+pt
Turn Type	7	4	4	3	8	8	5	2	1	6	6
Protected Phases	4	4	4	8	8	8	2	2	1	6	6
Permitted Phases	82.6	70.9	70.9	73.0	66.1	66.1	37.2	24.5	23.4	15.7	15.7
Actuated Green, G (s)	83.8	71.9	71.9	75.0	67.1	67.1	38.2	25.5	25.4	16.7	16.7
Effective Green, g (s)	0.64	0.55	0.55	0.58	0.52	0.52	0.29	0.20	0.20	0.13	0.13
Actuated g/C Ratio	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	550	1939	867	204	1809	809	317	339	269	222	222
Lane Grp Cap (vph)	c0.06	c0.40	0.05	0.02	0.15	0.02	c0.09	0.09	0.03	0.09	0.09
v/s Ratio Prot	0.34	0.72	0.09	0.31	0.30	0.05	0.65	0.48	0.39	0.68	0.68
v/s Ratio Perm	11.1	21.6	13.7	16.7	18.0	15.6	37.4	46.4	44.8	54.1	54.1
Uniform Delay, d1	0.56	0.43	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Progression Factor	1.6	1.9	0.2	0.9	0.4	0.1	4.8	1.1	0.9	8.0	8.0
Incremental Delay, d2	7.8	11.1	1.8	17.6	18.4	15.7	42.2	47.5	45.7	62.1	62.1
Delay (s)	A	B	A	B	B	B	D	D	D	E	E
Level of Service	A	B	A	B	B	B	D	D	D	E	E
Approach Delay (s)	9.9	A	A	18.0	B	B	44.7	D	55.9	E	E
Approach LOS	A	A	A	B	B	B	D	D	D	E	E

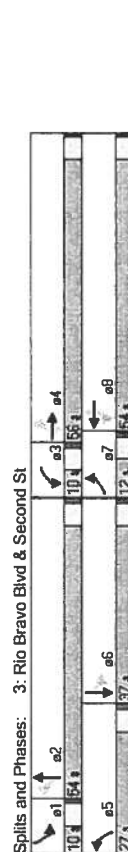
Intersection Summary
HCM Average Control Delay 19.8 HCM Level of Service B
HCM Volume to Capacity ratio 0.68
Actuated Cycle Length (s) 130.0 Sum of lost time (s) 8.0
Intersection Capacity Utilization 70.6% ICU Level of Service C
Analysis Period (min) 15
c Critical Lane Group

2012 AM Peak BUILD Conditions
Existing Geometry
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Timings
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	128	565	27	76	1107	81	246	78	98	123
Volume (vph)	128	565	27	76	1107	81	246	78	98	123
Turn Type	pm+pt	Perm	pm+pt	Perm	pm+pt	Perm	pm+pt	Perm	pm+pt	Perm
Permitted Phases	4	4	4	3	8	8	2	2	1	6
Detector Phases	7	4	4	3	8	8	5	2	1	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	12.0	56.0	56.0	10.0	54.0	54.0	27.0	54.0	10.0	37.0
Total Split (%)	9.2%	43.1%	43.1%	7.7%	41.5%	41.5%	20.8%	41.5%	7.7%	28.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	Min	C-Min	C-Min	Min	C-Min	C-Min	Min	C-Min	Min	C-Min
Act Effect Green (s)	62.3	53.4	57.9	51.2	57.9	47.0	37.6	30.6		
Actuated g/C Ratio	0.48	0.41	0.45	0.39	0.39	0.45	0.36	0.29	0.24	
v/c Ratio	0.75	0.41	0.04	0.24	0.85	0.13	0.86	0.38	0.31	0.92
Control Delay	60.2	44.7	25.2	20.4	43.7	11.4	57.3	23.4	26.0	66.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	44.7	25.2	20.4	43.7	11.4	57.3	23.4	26.0	66.2
LOS	E	D	C	C	D	B	E	C	C	E
Approach Delay	46.8			40.2			42.5			57.8
Approach LOS	D			D			D			E



HCM Signalized Intersection Capacity Analysis
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.85	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	1681	1752	1660	1660
Flt Permitted	0.07	1.00	1.00	0.35	1.00	1.00	0.12	1.00	0.61	1.00	1.00
Satd. Flow (perm)	138	3505	1568	642	3505	1568	213	1681	1116	1660	1660
Volume (vph)	128	565	27	76	1107	81	246	78	113	98	123
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.77	0.77	0.77	0.90	0.90
Adj. Flow (vph)	133	569	28	81	1178	86	319	101	147	109	137
RTOR Reduction (vph)	0	0	16	0	0	0	34	0	42	0	57
Lane Group Flow (vph)	133	589	12	81	1178	52	319	207	0	109	356
Turn Type	pm+pt	Perm	pm+pt	Perm	pm+pt	Perm	pm+pt	Perm	pm+pt	Perm	pm+pt
Protected Phases	7	4	4	3	8	5	2	1	6		
Permitted Phases	4	4	4	3	8	8	2	2	1	6	
Actuated Green, G (s)	60.3	52.4	52.4	55.9	50.2	50.2	56.9	48.0	35.5	29.6	
Effective Green, g (s)	62.3	53.4	53.4	57.9	51.2	51.2	57.9	47.0	37.5	30.6	
Actuated g/C Ratio	0.48	0.41	0.41	0.45	0.39	0.39	0.45	0.36	0.29	0.24	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	177	1440	644	343	1380	618	371	608	356	391	
v/s Ratio Prot	c0.05	0.17		0.01	c0.34		c0.15	0.12	0.02	0.21	
v/s Ratio Perm	0.31		0.01	0.09		0.03	c0.23		0.07		
v/c Ratio	0.75	0.41	0.02	0.24	0.85	0.08	0.86	0.34	0.31	0.91	
Uniform Delay, d1	27.1	27.1	22.7	21.4	36.0	24.7	36.5	30.2	35.1	48.4	
Progression Factor	1.57	1.58	3.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.1	0.8	0.0	0.4	6.9	0.3	17.7	0.3	0.5	24.3	
Delay (s)	57.6	43.7	69.6	21.7	42.9	25.0	54.2	30.5	35.6	72.7	
Level of Service	E	D	E	C	D	C	D	C	D	E	
Approach Delay (s)	47.1			40.4			43.8			64.9	
Approach LOS	D			D			D			E	

Intersection Summary

HCM Average Control Delay 46.6 HCM Level of Service D

HCM Volume to Capacity ratio 0.87

Actuated Cycle Length (s) 130.0 Sum of lost time (s) 16.0

Intersection Capacity Utilization 86.4% ICU Level of Service E

Analysis Period (min) 15

c Critical Lane Group

2012 PM Peak NOBUILD Conditions

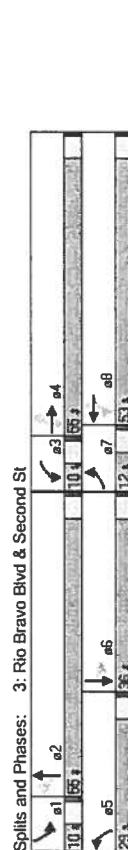
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Existing Geometry

Timings
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	134	611	33	76	1152	81	272	78	98	123
Volume (vph)	pm+pt	7	4	3	8	8	2	2	1	6
Turn Type	Protected Phases	4	4	4	3	8	8	2	1	6
Permitted Phases	7	4	4	3	8	8	2	2	1	6
Detector Phases	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Minimum Split (s)	12.0	55.0	55.0	10.0	53.0	53.0	29.0	55.0	10.0	36.0
Total Split (s)	9.2%	42.3%	42.3%	7.7%	40.8%	40.8%	22.3%	42.3%	7.7%	27.7%
Total Split (%)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	C-Min	C-Min	Min	C-Min	C-Min	Min	C-Min	Min	C-Min
Recall Mode	60.6	52.1	52.1	56.0	49.8	49.8	59.7	49.2	37.1	30.7
Act Effect Green (s)	0.47	0.40	0.40	0.43	0.38	0.38	0.46	0.38	0.29	0.24
Actuated g/C Ratio	0.81	0.45	0.05	0.27	0.91	0.14	0.90	0.37	0.31	0.93
v/c Ratio	69.9	47.8	26.2	21.6	49.6	12.4	62.5	22.2	25.8	68.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	69.9	47.8	26.2	21.6	49.6	12.4	62.5	22.2	25.8	68.5
Total Delay	E	D	C	C	C	D	B	E	C	E
LOS	E	D	C	C	C	D	B	E	C	E
Approach Delay	50.7	D	D	45.7	D	D	45.9	D	D	59.7
Approach LOS	D	D	D	D	D	D	D	D	D	E



HCM Signalized Intersection Capacity Analysis
3: Rio Bravo Blvd & Second St

Terry O. Brown, P.E.
7/20/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	1.00	0.90
Lane Util. Factor	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.91	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	1568	1752	3505	1568	1752	1881	1752	1658
Flt Permitted	0.08	1.00	1.00	0.32	1.00	1.00	0.12	1.00	0.61	1.00
Satd. Flow (perm)	142	3505	1568	582	3505	1568	213	1881	1116	1658
Volume (vph)	134	611	33	76	1152	81	272	78	98	123
Peak-hour factor, PHF	0.96	0.96	0.96	0.94	0.94	0.94	0.77	0.77	0.90	0.90
Adj. Flow (vph)	140	636	34	81	1226	86	353	101	147	109
RTOR Reduction (vph)	0	0	20	0	0	33	0	41	0	58
Lane Group Flow (vph)	140	636	14	81	1226	53	353	207	0	109
Turn Type	pm+pt	7	4	3	8	8	2	2	1	6
Protected Phases	4	4	4	3	8	8	2	2	1	6
Permitted Phases	58.6	51.1	51.1	54.0	48.8	48.8	58.7	48.3	35.1	29.7
Actuated Green, G (s)	60.6	52.1	52.1	56.0	49.8	49.8	59.7	49.3	37.1	30.7
Actuated g/C Ratio	0.47	0.40	0.40	0.43	0.38	0.38	0.46	0.38	0.29	0.24
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	171	1405	628	307	1343	601	394	637	350	392
v/s Ratio Prot	c0.05	0.18	0.01	c0.35	0.01	c0.35	0.17	0.12	0.02	0.22
v/s Ratio Perm	0.33	0.45	0.02	0.26	0.91	0.09	0.90	0.33	0.31	0.92
v/c Ratio	28.8	28.5	23.5	22.7	38.0	25.6	37.6	28.6	35.4	48.5
Uniform Delay, d1	1.66	1.61	3.38	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	22.7	0.9	0.1	0.5	11.0	0.3	22.0	0.3	0.5	26.6
Incremental Delay, d2	70.5	46.9	79.7	23.1	49.0	25.9	59.6	28.9	35.9	75.1
Delay (s)	E	D	E	C	D	C	E	C	D	E
Level of Service	E	D	E	C	D	C	E	C	D	E
Approach Delay (s)	52.4	D	D	46.1	D	D	46.9	D	67.0	E
Approach LOS	D	D	D	D	D	D	D	D	E	E

Intersection Summary
HCM Average Control Delay 51.1 HCM Level of Service D
HCM Volume to Capacity ratio 0.92
Actuated Cycle Length (s) 130.0 Sum of lost time (s) 16.0
Intersection Capacity Utilization 89.7% ICU Level of Service E
Analysis Period (min) 15
c Critical Lane Group

2012 PM Peak BUILD Conditions
Existing Geometry

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2012 PM Peak BUILD Conditions
Existing Geometry

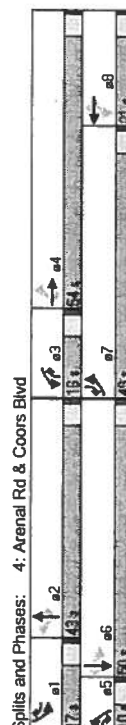
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Timings 4: Arenal Rd & Coors Blvd Terry O. Brown, P.E. 8/5/2010

HCM Signalized Intersection Capacity Analysis 4: Arenal Rd & Coors Blvd Terry O. Brown, P.E. 8/5/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Turn Type	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phases	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	49.0	54.0	10.0	16.0	21.0	17.0	10.0	43.0	16.0	17.0	50.0	49.0
Total Split (%)	37.7%	41.5%	7.7%	12.3%	16.2%	13.1%	7.7%	33.1%	12.3%	13.1%	38.5%	37.7%
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	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	1.0
Lead-Lag Optimize?	None	Min	None	Min	None	Min	None	Min	None	Min	None	None
Recall Mode	58.9	43.5	54.1	25.5	14.1	29.6	54.2	47.6	63.0	62.5	52.5	87.3
Act Effort Green (s)	0.45	0.33	0.42	0.20	0.11	0.23	0.42	0.37	0.48	0.48	0.40	0.75
Act Effort Green Ratio	0.78	0.57	0.74	0.50	0.60	0.29	0.66	0.57	0.20	0.50	0.36	0.11
Control Delay	36.0	38.6	4.2	32.0	68.0	7.8	9.5	18.2	1.8	27.5	29.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	38.6	4.2	32.0	68.0	7.8	9.5	18.2	1.8	27.5	29.5	1.0
LOS	D	D	A	C	E	A	A	B	A	C	C	A
Approach Delay	33.7			35.1			14.9				24.2	
Approach LOS	C			D			B				C	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 72 (55%), Referenced to phase 2: NBT and 6: SBT, Start of Green												
Natural Cycle: 70												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 25.7												
Intersection Capacity Utilization 64.6%												
Analysis Period (min) 15												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	416	283	80	97	88	95	39	616	139	118	440	118
Turn Type	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phases	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	49.0	54.0	10.0	16.0	21.0	17.0	10.0	43.0	16.0	17.0	50.0	49.0
Total Split (%)	37.7%	41.5%	7.7%	12.3%	16.2%	13.1%	7.7%	33.1%	12.3%	13.1%	38.5%	37.7%
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	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	1.0
Lead-Lag Optimize?	None	Min	None	Min	None	Min	None	Min	None	Min	None	None
Recall Mode	58.9	43.5	54.1	25.5	14.1	29.6	54.2	47.6	63.0	62.5	52.5	87.3
Act Effort Green (s)	0.45	0.33	0.42	0.20	0.11	0.23	0.42	0.37	0.48	0.48	0.40	0.75
Act Effort Green Ratio	0.78	0.57	0.74	0.50	0.60	0.29	0.66	0.57	0.20	0.50	0.36	0.11
Control Delay	36.0	38.6	4.2	32.0	68.0	7.8	9.5	18.2	1.8	27.5	29.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	38.6	4.2	32.0	68.0	7.8	9.5	18.2	1.8	27.5	29.5	1.0
LOS	D	D	A	C	E	A	A	B	A	C	C	A
Approach Delay	33.7			35.1			14.9				24.2	
Approach LOS	C			D			B				C	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 72 (55%), Referenced to phase 2: NBT and 6: SBT, Start of Green												
Natural Cycle: 70												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 25.7												
Intersection Capacity Utilization 64.6%												
Analysis Period (min) 15												



2012 AM Peak NOBUILD Conditions
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 Existing Geometry

2012 AM Peak NOBUILD Conditions
 \Main\atob\PROJECTS\Las_Estancias_Update\Synchro2012\ANX.syt
 Existing Geometry

Timing
4: Arenal Rd & Coors Blvd

Terry O. Brown, P.E.
8/5/2010

HCM Signalized Intersection Capacity Analysis

Terry O. Brown, P.E.
8/5/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1703	1792	1524	1703	1792	1524	3303	3406	1524	1703	3406	1524
Fit Permitted	0.38	1.00	1.00	0.96	1.00	1.00	0.42	1.00	1.00	0.42	1.00	1.00
Satd. Flow (perm)	678	1792	1524	996	1792	1524	1456	3406	1524	296	3406	1524
Volume (vph)	416	283	87	103	88	95	101	736	183	118	453	118
Peak-hour factor, PHF	0.83	0.83	0.83	0.75	0.75	0.75	0.86	0.86	0.86	0.89	0.89	0.89
Adj. Flow (vph)	501	341	105	137	117	127	117	858	224	133	509	133
RTOR Reduction (vph)	0	0	66	0	0	92	0	118	0	0	38	0
Lane Group Flow (vph)	501	341	39	137	117	35	117	858	106	133	509	95
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	2	2	2	6	6	6	6
Actuated Green, G (s)	56.4	40.7	46.3	23.8	13.1	23.1	54.2	48.6	59.3	63.0	53.0	91.3
Effective Green, g (s)	57.4	41.7	48.3	25.8	14.1	25.1	56.2	49.6	61.3	64.6	54.0	93.3
Actuated g/C Ratio	0.44	0.32	0.37	0.20	0.11	0.19	0.43	0.38	0.47	0.50	0.42	0.72
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	609	575	613	261	194	341	723	1300	766	266	1415	1141
v/s Ratio Prot	c0.25	0.19	0.00	0.05	0.07	0.01	c0.25	0.01	c0.25	0.01	c0.15	0.03
v/s Ratio Perm	c0.11	0.02	0.06	0.06	0.01	0.06	0.06	0.06	0.06	0.06	0.06	0.04
v/c Ratio	0.82	0.59	0.06	0.52	0.60	0.10	0.16	0.66	0.14	0.50	0.36	0.08
Uniform Delay, d1	29.1	37.0	28.3	45.4	55.3	43.2	21.8	33.2	19.4	21.4	26.1	5.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.36	0.42	0.51	1.00	1.00	1.00
Incremental Delay, d2	8.8	1.6	0.0	1.9	5.2	0.1	0.1	1.6	0.0	1.5	0.7	0.0
Delay (s)	37.9	38.7	28.3	47.3	60.5	43.3	7.9	15.6	10.0	22.9	26.8	5.5
Level of Service	D	D	C	D	E	D	A	B	B	C	C	A
Approach Delay (s)	36.9			50.0			13.8				22.5	
Approach LOS	D			D			B				C	
Intersection Summary												
HCM Average Control Delay	26.7											
HCM Volume to Capacity ratio	0.72											
Actuated Cycle Length (s)	130.0											
Intersection Capacity Utilization	67.9%											
Analysis Period (min)	15											
C Critical Lane Group												

4: Arenal Rd & Coors Blvd

Terry O. Brown, P.E.
8/5/2010

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	416	283	87	103	88	95	101	736	183	118	453	118
Volume (vph)	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	2	2	2	6	6	6	6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
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	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	10.0	10.0	21.0	10.0	10.0	21.0	10.0	10.0
Total Split (s)	46.0	51.0	10.0	16.0	21.0	16.0	47.0	16.0	16.0	53.0	46.0	46.0
Total Split (%)	35.4%	39.2%	7.7%	12.3%	16.2%	12.3%	36.2%	12.3%	12.3%	40.8%	35.4%	35.4%
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	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	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead/Lag Optimize?	None	Min	None	None	Min	None	C-Min	None	None	C-Min	None	None
Recall Mode	57.4	41.7	52.3	25.8	14.1	29.1	56.1	49.6	65.3	64.0	54.0	97.3
Act Effct Green (s)	0.44	0.32	0.40	0.20	0.11	0.22	0.43	0.38	0.50	0.49	0.42	0.75
Actuated g/C Ratio	0.81	0.59	0.16	0.52	0.80	0.30	0.16	0.66	0.26	0.56	0.36	0.11
Control Delay	38.9	40.9	4.4	33.1	68.0	10.5	7.2	16.5	1.8	29.2	28.2	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	40.9	4.4	33.1	68.0	10.5	7.2	16.5	1.8	29.2	28.2	1.0
LOS	D	D	A	C	E	B	A	B	A	C	C	A
Approach Delay	35.8			36.3			12.8				23.7	
Approach LOS	D			D			B				C	
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 71 (55%), Referenced to phase 2:NBL and 6:SBTL, Start of Green												
Natural Cycle: 75												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.81												
Intersection Signal Delay: 24.7												
Intersection Capacity Utilization 67.9%												
Analysis Period (min) 15												
Intersection LOS: C												
ICU Level of Service C												



2012 AM Peak BUILD Conditions
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2012 AM Peak BUILD Conditions
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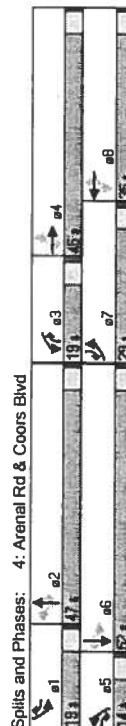
Existing Geometry

Timings

4: Arenal Rd & Coors Blvd

Terry O. Brown, P.E.
8/5/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	248	147	81	151	208	128	134	648	103	121	792	312
Volume (vph)	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov
Turn Type	4	4	5	3	8	1	5	2	3	1	6	7
Protected Phases	7	4	4	8	8	2	2	6	6	6	6	6
Permitted Phases	4	4	5	3	8	1	5	2	3	1	6	7
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
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	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	10.0	10.0
Total Split (s)	29.0	45.0	14.0	19.0	35.0	19.0	14.0	47.0	19.0	19.0	52.0	29.0
Total Spilt (%)	22.3%	34.6%	10.8%	14.6%	26.9%	14.6%	10.8%	38.2%	14.6%	14.6%	40.0%	22.3%
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	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	1.0
Lead-Lag Optimize?	None	Min	None	None	Min	None	None	Min	None	None	Min	None
Recall Mode	50.7	31.4	44.9	39.0	23.7	39.2	65.3	55.9	75.1	69.1	57.9	84.8
Act Eff Green (s)	0.39	0.24	0.35	0.30	0.18	0.30	0.50	0.43	0.58	0.53	0.45	0.65
Act Eff g/C Ratio	0.81	0.36	0.15	0.44	0.77	0.27	0.29	0.43	0.13	0.38	0.56	0.30
Control Delay	33.7	41.6	5.2	29.7	65.6	5.3	14.7	27.8	11.1	20.0	30.4	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	41.6	5.2	29.7	65.6	5.3	14.7	27.8	11.1	20.0	30.4	3.0
LOS	C	D	A	C	E	A	B	C	B	B	C	A
Approach Delay	31.3											
Approach LOS	C											
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 125 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Green												
Natural Cycle: 65												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.77												
Intersection Signal Delay: 26.9												
Intersection Capacity Utilization 64.0%												
Analysis Period (min) 15												



Splits and Phases: 4: Arenal Rd & Coors Blvd

HCM Signalized Intersection Capacity Analysis

4: Arenal Rd & Coors Blvd

Terry O. Brown, P.E.
8/5/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Fit Permitted	1703	1792	1524	1703	1792	1524	3303	3406	1524	1703	3406	1524
Satd. Flow (perm)	0.23	1.00	1.00	0.86	1.00	1.00	0.23	1.00	1.00	0.31	1.00	1.00
Volume (vph)	248	147	81	151	208	128	134	548	103	121	792	312
Peak-hour factor, PHF	0.95	0.95	0.95	0.82	0.82	0.82	0.87	0.87	0.87	0.87	0.94	0.94
Adj. Flow (vph)	261	155	85	184	251	156	154	630	118	129	843	332
RTOR Reduction (vph)	0	0	58	0	0	114	0	0	53	0	0	105
Lane Group Flow (vph)	261	155	27	184	251	42	154	630	65	129	843	227
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	2	2	6	6	6	6	6
Actuated Green, G (s)	49.7	30.5	39.0	36.9	22.7	33.1	63.4	54.9	69.1	67.2	56.8	78.8
Effective Green, g (s)	50.7	31.5	41.0	38.9	23.7	35.1	65.4	55.9	71.1	69.2	57.8	80.8
Actuated g/C Ratio	0.39	0.24	0.32	0.30	0.18	0.27	0.50	0.43	0.55	0.53	0.44	0.62
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	388	434	528	414	327	458	583	1465	880	395	1514	984
v/s Ratio Prot	c0.12	0.09	0.00	0.05	c0.14	0.01	0.02	0.18	0.01	c0.03	c0.25	0.04
v/s Ratio Perm	0.14	0.01	0.01	0.08	0.02	0.11	0.03	0.15	0.03	0.15	0.11	0.11
v/c Ratio	0.67	0.36	0.05	0.44	0.77	0.09	0.26	0.43	0.07	0.33	0.56	0.23
Uniform Delay, d1	30.1	40.8	31.0	35.8	50.5	35.5	18.2	25.9	13.9	16.4	26.6	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.94	3.49	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.5	0.0	0.8	10.3	0.1	0.2	0.8	0.0	0.5	1.5	0.1
Delay (s)	34.6	41.4	31.0	36.5	60.9	35.6	15.4	25.3	48.6	16.9	28.1	11.0
Level of Service	C	D	C	D	E	D	B	C	D	B	C	B
Approach Delay (s)	36.1											
Approach LOS	D											
Intersection Summary												
HCM Average Control Delay	30.1											
HCM Volume to Capacity ratio	0.61											
Actuated Cycle Length (s)	130.0											
Intersection Capacity Utilization	64.0%											
Analysis Period (min)	15											
c Critical Lane Group												

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Existing Geometry

Timing
4: Arenal Rd & Coors Blvd

Terry O. Brown, P.E.
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HCM Signalized Intersection Capacity Analysis
4: Arenal Rd & Coors Blvd

Terry O. Brown, P.E.
8/5/2010

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8/5/2010

Lane Group												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	
Lane Configurations	248	147	184	241	206	128	240	752	195	121	990	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.85	1.00	1.00	0.85	1.00	
Satd. Flow (prot)	1703	1792	1524	1703	1792	1524	3303	3406	1524	1703	3406	
Flt Permitted	0.26	1.00	1.00	0.46	1.00	1.00	0.15	1.00	0.22	1.00	1.00	
Satd. Flow (perm)	463	1792	1524	833	1792	1524	528	3406	1524	388	3406	
Volume (vph)	248	147	184	241	206	128	240	752	195	121	990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.82	0.82	0.82	0.87	0.87	0.87	0.84	0.84	
Adj. Flow (vph)	261	155	184	294	251	156	276	864	224	129	1053	
RTOR Reduction (vph)	0	0	79	0	0	0	90	0	84	0	65	
Lane Group Flow (vph)	261	155	115	294	251	66	276	864	140	129	1053	
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+ov	
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	
Permitted Phases	4	4	4	8	8	2	2	2	6	6	6	
Actuated Green, G (s)	41.3	21.3	30.1	42.5	21.9	31.4	67.4	58.6	79.2	68.8	59.3	
Effective Green, g (s)	43.3	22.3	32.1	44.5	22.9	33.4	69.4	59.6	81.2	70.8	60.3	
Actuated g/C Ratio	0.33	0.17	0.25	0.34	0.18	0.26	0.53	0.46	0.62	0.54	0.46	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grip Cap (vph)	355	307	423	430	316	438	491	1562	999	318	1580	
v/s Ratio Prot	c0.12	0.09	0.02	0.11	c0.14	0.01	c0.04	0.25	0.02	c0.03	c0.31	
v/s Ratio Perm	0.13	0.05	0.05	0.12	0.03	0.03	0.28	0.07	0.07	0.19	0.13	
v/c Ratio	0.74	0.50	0.27	0.68	0.79	0.15	0.56	0.55	0.14	0.41	0.67	
Uniform Delay, d1	35.0	48.8	39.5	34.2	51.3	37.3	19.2	25.5	10.0	16.7	27.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.38	0.54	0.14	1.00	1.00	
Incremental Delay, d2	7.7	13	0.3	4.5	12.9	0.2	1.0	0.8	0.0	0.8	2.2	
Delay (s)	42.7	50.2	39.9	38.7	64.2	37.5	27.5	14.8	1.4	17.5	29.3	
Level of Service	D	D	D	D	E	D	C	B	A	B	C	
Approach Delay (s)	43.7				47.5			15.2		24.3		
Approach LOS	D				D			B		C		
Intersection Summary												
HCM Average Control Delay							28.0	HCM Level of Service				C
HCM Volume to Capacity ratio							0.65					
Actuated Cycle Length (s)							130.0	Sum of lost time (s)				8.0
Intersection Capacity Utilization							72.1%	ICU Level of Service				C
Analysis Period (min)							15					
c Critical Lane Group												

Lane Group											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	248	147	184	241	206	128	240	752	195	121	990
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Turn Type	pm+pt	pm+ov	pm+pt	pm+pt	pm+pt	pm+ov	pm+pt	pm+ov	pm+pt	pm+ov	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6
Permitted Phases	4	4	4	8	8	2	2	2	6	6	6
Detected Phases	7	4	5	3	8	1	5	2	3	1	6
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	10.0	10.0	21.0	10.0	10.0	21.0	10.0
Total Split (s)	26.0	30.0	15.0	26.0	30.0	16.0	15.0	58.0	26.0	16.0	59.0
Total Split (%)	20.0%	23.1%	11.5%	20.0%	23.1%	11.5%	44.6%	20.0%	12.3%	45.4%	26.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead-Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Recall Mode	None	Min	None	None	Min	None	C-Min	None	None	C-Min	None
Act Eff Green (s)	43.2	22.2	36.0	44.5	22.9	37.4	69.4	59.6	85.3	70.9	60.4
Actuated g/C Ratio	0.33	0.17	0.28	0.34	0.18	0.29	0.53	0.46	0.66	0.55	0.46
v/c Ratio	0.71	0.51	0.39	0.66	0.80	0.30	0.61	0.55	0.21	0.43	0.67
Control Delay	41.0	54.0	18.4	38.4	69.6	10.6	24.1	15.7	0.5	19.1	31.0
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	41.0	54.0	18.4	38.4	69.6	10.6	24.1	15.7	0.5	19.1	31.0
LOS	D	D	B	D	E	B	C	B	A	B	C
Approach Delay	37.1			43.4			14.9			24.4	
Approach LOS	D			D			B			C	
Intersection Summary											
Cycle Length: 130											
Actuated Cycle Length: 130											
Offset: 75 (50%), Referenced to phase 2:NBL and 6:SBTL, Start of Green											
Natural Cycle: 70											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.80											
Intersection Signal Delay: 26.3											
Intersection Capacity Utilization 72.1%											
Analysis Period (min): 15											
Intersection LOS: C											
ICU Level of Service C											
Spills and Phases: 4: Arenal Rd & Coors Blvd											
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	
1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1703	1792	1524	1703	1792	1524	3303	3406	1524	1703	3406	
0.26	1.00	1.00	0.46	1.00	1.00	0.15	1.00	0.22	1.00	1.00	
463	1792	1524	833	1792	1524	528	3406	1524	388	3406	
248	147	184	241	206	128	240	752	185	121	990	
0.95	0.95	0.95	0.82	0.82	0.82	0.87	0.87	0.87	0.84	0.84	
261	155	184	294	251	156	276	864	224	129	1053	
6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	
7	4	5	3	8	1	5	2	3	1	6	
4.13	21.3	30.1	42.5	21.9	31.4	67.4	58.6	79.2	68.8	59.3	
43.3	22.3	32.1	44.5	22.9	33.4	69.4	59.6	81.2	70.8	60.3	
0.33	0.17	0.25	0.34	0.18	0.26	0.53	0.46	0.62	0.54	0.46	
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
D	D	B	D	E	B	C	B	A	B	C	
37.1			43.4			14.9			24.4		
D			D			B			C		
Intersection Summary											
Cycle Length: 130											
Offset: 75 (50%), Referenced to phase 2:NBL and 6:SBTL, Start of Green											
Natural Cycle: 70											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.80											
Intersection Signal Delay: 26.3											
Intersection Capacity Utilization 72.1%											
Analysis Period (min): 15											
Spills and Phases: 4: Arenal Rd & Coors Blvd											
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	
1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1703	1792	1524	1703	1792	1524	3303	3406	1524	1703	3406	
0.26	1.00	1.00	0.46	1.00	1.00	0.15	1.00	0.22	1.00	1.00	
463	1792	1524	833	1792	1524	528	3406	1524	388	3406	
248	147	184	241	206	128	240	752	185	121	990	
0.95	0.95	0.95	0.82	0.82	0.82	0.87	0.87	0.87	0.84	0.84	
261	155	184	294	251	156	276	864	224	129	1053	
6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	
7	4	5	3	8	1	5	2	3	1	6	
4.13	21.3	30.1	42.5	21.9	31.4	67.4	58.6	79.2	68.8	59.3	
43.3	22.3	32.1	44.5	22.9	33.4	69.4	59.6	81.2	70.8	60.3	
0.33	0.17	0.25	0.34	0.18	0.26	0.53	0.46	0.62	0.54	0.46	
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
D	D	B	D	E	B	C	B	A	B	C	
37.1			43.4			14.9			24.4		
D			D			B			C		
Intersection Summary											
Cycle Length: 130											
Offset: 75 (50%), Referenced to phase 2:NBL and 6:SBTL, Start of Green											
Natural Cycle: 70											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.80											
Intersection Signal Delay: 26.3											
Intersection Capacity Utilization 72.1%											
Analysis Period (min): 15											
Spills and Phases: 4: Arenal Rd & Coors Blvd											
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR	
1900	1900	1900	1900	1900	1900	1900	1900				

Traffic Count Data Sheet

Las Estancias Update

Year Counts Taken:

2010

E-W Street Rio Bravo Blvd.

N-S Street: Coors Blvd.

Speed Limit (Rio Bravo Blvd.)= 35 MPH

Speed Limit (Coors Blvd.)= 45 MPH

Date of Count: 7/1/10

SIGNALIZED

Begin Time	End Time	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	16	118	29	25	25	32	17	97	68	65	63	6
7:15 AM	7:30 AM	7	111	26	19	22	38	22	112	84	72	69	5
7:30 AM	7:45 AM	13	134	31	16	28	40	25	155	77	94	64	11
7:45 AM	8:00 AM	25	110	32	19	33	62	15	105	50	86	85	7
8:00 AM	8:15 AM	46	70	34	47	25	40	44	110	59	77	76	6
8:15 AM	8:30 AM	43	68	28	25	34	42	44	111	41	64	94	6
8:30 AM	8:45 AM	42	54	24	25	24	47	48	116	53	79	95	9
8:45 AM	9:00 AM	43	53	24	46	24	45	23	104	36	64	87	7
AM Peak Hour Volumes		61	473	118	79	108	172	79	469	279	317	281	29
% of Total Traffic		2.5%	19.2%	4.8%	3.2%	4.4%	7.0%	3.2%	19.0%	11.3%	12.9%	11.4%	1.2%
% Directional			26.5%			14.6%			33.5%			25.4%	
AM Peak Hour Factor			0.92			0.79			0.80			0.88	

Begin Time	End Time	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	24	34	27	82	74	112	45	153	23	60	167	8
4:15 PM	4:30 PM	8	27	26	45	74	68	34	87	26	48	106	13
4:30 PM	4:45 PM	7	27	35	62	75	85	38	161	25	54	135	14
4:45 PM	5:00 PM	7	48	34	39	80	64	33	72	45	54	111	11
5:00 PM	5:15 PM	12	21	45	87	109	101	46	125	25	81	170	22
5:15 PM	5:30 PM	16	42	43	77	85	110	46	142	22	69	169	13
5:30 PM	5:45 PM	7	48	34	83	71	100	49	130	18	56	168	15
5:45 PM	6:00 PM	15	24	53	63	60	91	52	114	29	70	191	23
PM Peak Hour Volumes		50	135	175	310	325	402	193	511	94	276	698	73
% of Total Traffic		1.5%	4.2%	5.4%	9.6%	10.0%	12.4%	6.0%	15.8%	2.9%	8.5%	21.5%	2.3%
% Directional			11.1%			32.0%			24.6%			32.3%	
PM Peak Hour Factor			0.89			0.87			0.95			0.92	

Traffic Count Data Sheet

Las Estancias Update

Year Counts Taken:

2010

E-W Street Rio Bravo Blvd.

N-S Street: Isleta Blvd.

Speed Limit (Rio Bravo Blvd.)= 35 MPH

Speed Limit (Isleta Blvd.)= 35 MPH

Date of Count: 7/7/10

SIGNALIZED

Begin Time	End Time	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	43	496	43	28	67	23	4	29	97	49	23	5
7:15 AM	7:30 AM	23	250	15	26	47	29	17	31	108	64	37	10
7:30 AM	7:45 AM	33	268	20	47	65	49	13	57	105	66	37	14
7:45 AM	8:00 AM	32	203	16	52	52	36	23	56	79	64	35	15
8:00 AM	8:15 AM	24	189	11	42	43	32	19	46	54	61	24	9
8:15 AM	8:30 AM	49	445	21	43	58	45	26	52	76	51	39	9
8:30 AM	8:45 AM	34	458	14	58	85	42	21	42	71	54	38	45
8:45 AM	9:00 AM	32	443	46	39	83	64	47	56	60	61	71	24
AM Peak Hour Volumes		112	910	62	167	207	146	72	190	346	255	133	48
% of Total Traffic		4.2%	34.4%	2.3%	6.3%	7.8%	5.5%	2.7%	7.2%	13.1%	9.6%	5.0%	1.8%
% Directional			40.9%			19.6%			23.0%			16.5%	
AM Peak Hour Factor			0.84			0.81			0.87			0.93	

Begin Time	End Time	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (Isleta Blvd.)			Southbound (Isleta Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	50	89	48	87	148	47	37	60	54	60	65	39
4:15 PM	4:30 PM	29	84	45	94	213	59	52	57	47	55	71	41
4:30 PM	4:45 PM	22	68	33	70	131	77	53	68	43	59	66	34
4:45 PM	5:00 PM	28	76	29	113	193	68	36	62	38	50	63	40
5:00 PM	5:15 PM	24	69	26	89	183	67	36	51	27	70	62	35
5:15 PM	5:30 PM	39	79	21	103	233	77	38	54	43	58	62	33
5:30 PM	5:45 PM	23	90	21	112	182	93	42	57	35	75	66	27
5:45 PM	6:00 PM	22	79	41	96	163	54	48	49	64	60	42	30
PM Peak Hour Volumes		114	314	97	417	791	305	152	224	143	253	253	135
% of Total Traffic		3.6%	9.8%	3.0%	13.0%	24.7%	9.5%	4.8%	7.0%	4.5%	7.9%	7.9%	4.2%
% Directional			16.4%			47.3%			16.2%			20.0%	
PM Peak Hour Factor			0.94			0.92			0.95			0.95	

Traffic Count Data Sheet

Las Estancias Update

Year Counts Taken:

2010

E-W Street Rio Bravo Blvd.

N-S Street: 2nd St.

Speed Limit (Rio Bravo Blvd.)= 35 MPH

Speed Limit (2nd St.)= 35 MPH

Date of Count: 7/6/10

SIGNALIZED

Begin Time	End Time	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	65	286	33	6	95	9	34	21	17	11	23	12
7:15 AM	7:30 AM	74	321	17	7	92	15	30	10	10	18	8	6
7:30 AM	7:45 AM	81	265	23	11	90	18	45	22	21	18	23	15
7:45 AM	8:00 AM	61	282	33	22	118	12	44	26	11	32	21	20
8:00 AM	8:15 AM	58	192	14	4	99	6	37	13	11	34	12	12
8:15 AM	8:30 AM	54	222	24	8	122	17	35	23	15	23	24	13
8:30 AM	8:45 AM	52	242	14	9	111	18	43	19	11	27	13	23
8:45 AM	9:00 AM	47	192	30	11	110	12	40	21	14	28	18	17
AM Peak Hour Volumes		281	1154	106	46	395	54	153	79	59	79	75	53
% of Total Traffic		11.1%	45.5%	4.2%	1.8%	15.6%	2.1%	6.0%	3.1%	2.3%	3.1%	3.0%	2.1%
% Directional			60.8%			19.5%			11.5%			8.2%	
AM Peak Hour Factor			0.94			0.81			0.83			0.71	

Begin Time	End Time	Eastbound (Rio Bravo Blvd.)			Westbound (Rio Bravo Blvd.)			Northbound (2nd St.)			Southbound (2nd St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	15	131	4	19	277	11	65	15	16	21	17	55
4:15 PM	4:30 PM	20	138	5	18	273	20	61	15	24	19	38	57
4:30 PM	4:45 PM	40	116	9	14	254	23	71	25	39	25	36	63
4:45 PM	5:00 PM	37	111	6	19	216	21	37	19	29	28	26	61
5:00 PM	5:15 PM	28	116	10	19	161	34	39	23	18	18	23	47
5:15 PM	5:30 PM	9	103	12	14	251	10	41	15	22	25	32	54
5:30 PM	5:45 PM	49	149	14	12	316	16	61	16	7	26	24	46
5:45 PM	6:00 PM	20	94	6	15	238	20	47	24	9	14	19	34
PM Peak Hour Volumes		112	496	24	70	1020	75	234	74	108	93	117	236
% of Total Traffic		4.2%	18.7%	0.9%	2.6%	38.4%	2.8%	8.8%	2.8%	4.1%	3.5%	4.4%	8.9%
% Directional			23.8%			43.8%			15.6%			16.8%	
PM Peak Hour Factor			0.96			0.94			0.77			0.90	

Traffic Count Data Sheet

Las Estancias Update

Year Counts Taken:

2010

E-W Street Arenal Rd.

N-S Street: Coors Blvd.

Speed Limit (Arenal Rd.)= 35 MPH

Speed Limit (Coors Blvd.)= 45 MPH

Date of Count: 7/8/10

SIGNALIZED

Begin Time	End Time	Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	424	29	14	22	48	22	47	422	20	43	416	24
7:15 AM	7:30 AM	116	57	16	16	15	19	14	141	40	33	113	15
7:30 AM	7:45 AM	111	91	23	18	18	21	11	170	55	35	119	29
7:45 AM	8:00 AM	85	70	18	37	39	25	4	158	28	25	107	26
8:00 AM	8:15 AM	87	53	20	26	16	30	10	169	16	21	108	22
8:15 AM	8:30 AM	74	31	14	46	45	12	9	142	24	9	88	20
8:30 AM	8:45 AM	82	37	16	26	43	15	48	138	46	23	150	20
8:45 AM	9:00 AM	73	42	9	49	48	17	42	122	30	49	93	22
AM Peak Hour Volumes		399	271	77	97	88	95	39	638	139	114	447	92
% of Total Traffic		16.0%	10.9%	3.1%	3.9%	3.5%	3.8%	1.6%	25.6%	5.6%	4.6%	17.9%	3.7%
% Directional			29.9%			11.2%			32.7%			26.2%	
AM Peak Hour Factor			0.83			0.69			0.86			0.89	

Begin Time	End Time	Eastbound (Arenal Rd.)			Westbound (Arenal Rd.)			Northbound (Coors Blvd.)			Southbound (Coors Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	54	34	17	26	36	31	22	165	29	20	219	70
4:15 PM	4:30 PM	64	30	25	34	31	38	45	132	49	35	186	52
4:30 PM	4:45 PM	56	38	19	36	37	23	20	132	26	27	218	69
4:45 PM	5:00 PM	64	38	23	45	57	32	37	149	29	22	196	63
5:00 PM	5:15 PM	64	33	17	26	58	36	36	149	19	29	220	55
5:15 PM	5:30 PM	64	38	22	30	34	25	40	171	29	38	182	58
5:30 PM	5:45 PM	68	48	16	33	28	18	47	133	20	36	167	63
5:45 PM	6:00 PM	45	31	25	20	45	24	45	161	30	33	199	47
PM Peak Hour Volumes		248	147	81	137	186	116	133	601	103	116	816	245
% of Total Traffic		8.5%	5.0%	2.8%	4.7%	6.4%	4.0%	4.5%	20.5%	3.5%	4.0%	27.9%	8.4%
% Directional			16.3%			15.0%			28.6%			40.2%	
PM Peak Hour Factor			0.95			0.82			0.87			0.94	

Tony Loyd

**BERNALILLO COUNTY PUBLIC WORKS DIVISION
TRAFFIC IMPACT ANALYSIS UPDATE SCOPING STUDY**

Prepared by: Terry O Brown, P.E.

Date: May 11, 2010

Project Name: Las Estancias Development

Location: Coors Blvd. South of Lamonica Dr.

Zone Atlas Page: P-10-Z

(Zone Atlas Page w/property highlighted attached)

(Proposed Project Plan attached)

Proposed land use and development phasing:

A Traffic Impact Study for this project was conducted beginning in 2007 and finalized on June 30, 2008. The study was approved by the Bernalillo County Public Works Department and the New Mexico Department of Transportation, District 3 Office. Proposed land uses assumed in the 2008 Traffic Impact Study were various neighborhood commercial uses. This property is currently vacant.

The proposed uses assumed in the 2008 Traffic Impact Study which was started in early 2007 are listed as follows:

Shopping Center (Retail Commercial)	262,800 S.F.
Home Improvement Superstore	167,000 S.F.
Auto Parts Sales Store	7,500 S.F.
Medical / Healthcare	10,300 S.F.
Specialty Retail	24,000 S.F.
Pharmacy	16,500 S.F.
Fast Food Restaurant w/Drive-Thru	3,500 S.F.
Restaurant	23,100 S.F.
Bank w/Drive-In Windows	5,500 S.F.
Residential Component	28 Units

The specific uses were fluid at the time the 2008 Traffic Impact Study was started. Therefore, broad land use categories were utilized to classify a majority of the project. The total commercial building area in the 2008 Traffic Impact Study was 520,200 S.F.

During the approval process which took place in 2007 and 2008, various changes were made to the proposed site plan for the project and the site plan was refined for specific users. The changes and refinements reflected in the site plan associated with the approved use permit significantly reduced the calculated trip generation rate resulting from implementation of the plan. However, there was no update to the Traffic Impact Study to reflect the reduced number of trips. The land uses reflected in the final site plan from the approval process are demonstrated in the following table:

Department Store	82,500 S.F.
Apparel Store	56,300 S.F.
Pet Supply Store	12,300 S.F.
Office Supply Store	20,400 S.F.
Arts and Crafts Store	34,100 S.F.
Home Improvement Superstore	140,000 S.F.
Shopping Center	82,400 S.F.
Medical-Dental Office Building	11,200 S.F.
Bed and Linen Superstore	30,800 S.F.
Specialty Retail	6,200 S.F.
Pharmacy	16,500 S.F.
Fast Food Restaurant w/Drive-Thru	3,500 S.F.
High Turnover Sit-Down Restaurant	18,500 S.F.
Bank w/Drive-In Windows	5,500 S.F.
Residential Condo / Townhouses	25 D.U.'s

The approved Las Estancias Site Development Plan is attached.

Also, due to the current economic atmosphere in this area, alternates to the proposed land uses are being considered. The second land use proposal is somewhat of a change from the site plan that was approved with the use permit. However, all of these uses are allowed under the approved use permit. This land use concept also significantly reduces the calculated trip generation rate, similar to the specific land uses associated with the approved site plan. The land use table under this scenario is demonstrated in the following table:

Shopping Center	121,300 S.F.
Apparel Store	28,000 S.F.
Office Supply Store	21,000 S.F.
Pet Supply Store	21,000 S.F.
Specialty Retail	6,200 S.F.
Pharmacy	16,500 S.F.
Fast Food Restaurant w/Drive-Thru	3,500 S.F.
High Turnover Sit-Down Restaurant	18,000 S.F.
Bank w/Drive-In Windows	5,500 S.F.
Residential Condo / Townhouses	25 D.U.'s
Hospital	60,000 S.F.
Church	50,000 S.F.
Medical-Dental Office Building	27,200 S.F.
Junior / Community College	280 Students
General Office Building	21,000 S.F.

The proposed alternate conceptual Las Estancias Site Development Plan is attached.

Based on the significant reduction in the calculated number of trips generated by the project from the above land use scenarios, it is proposed that the Traffic Impact Study be updated to reflect a reduction in trip generation rates.

Proposed Roadway Access:

The project access is primarily via three proposed driveways on Coors Blvd. along the frontage of the property. The project is also accessed by existing and proposed driveways on Lamonica Dr. The Lamonica Dr. driveways are accessed from two intersections. The primary access to Lamonica Dr. is the existing intersection of Lamonica Dr. / Coors Blvd. A secondary access is via the intersection of Rio Bravo Blvd. / Loris Dr. Both Rio Bravo / Loris Dr. and Lamonica Dr. / Coors Blvd. are existing signalized intersections. There is a primary proposed access on Coors Blvd. near the south end of the development that is planned as a signalized intersection. That proposed signalized access point is approximately 2,250 feet south of Lamonica Dr. The other two proposed driveways accessing the development are planned as partial access driveways. They will be right-turn-in, right-turn-out driveways with possibly one being left-turn-in also, but only with full concurrence of the Bernalillo County Public Works Department and the New Mexico Department of Transportation.

Consistency with Area and Regional Transportation Plans:

Surrounding properties are a mix of residential and commercial uses. A relatively new Walmart Supercenter exists immediately to the north of this project. Associated with the Walmart development are a couple of retail pad sites. The existing Rio Bravo Square Shopping Center exists at the northwest corner of Rio Bravo / Coors. The approved site development plan for the Rio Bravo Square is approximately 110,000 S.F. of retail commercial floor space.

Rio Bravo Blvd. and Coors Blvd. are Limited Access Arterial Roadways on the Long Range Roadway Plan for the Albuquerque Metropolitan Area. Rio Bravo is designated as a "Smart Corridor" targeted to carry large volumes of traffic in the east-west direction connecting to I-25.

Previously Conducted Relevant Traffic Impact Studies in the Area:

Other previously submitted Traffic Impact Studies in the area include the Southwest Mesa Subdivisions TIS (including Ceja Vista), 50% of Anderson Heights, Rio Bravo Square, Rio Bravo Commons (Commercial Component), Neilson Industrial Park, Schwartzman's Development, Neilson Commercial Development, KAN Industrial Park, and Central / Coors Commercial Development. These traffic studies are at or beyond three years old and have not been updated recently. Many of these proposed land development projects are on hold due to the current worldwide economic environment. The 2008 Traffic Impact Study for the Las Estancias project considered an implantation year of 2012 at which time it was assumed in the study that 80% of Southwest Mesa Subdivision, all of the Rio Bravo Square Development, all of Neilson Industrial Park Development, all of Neilson Commercial Development (SW Corner of Rio Bravo / Broadway), all of KAN Industrial Park Development (Murray Rd. / Broadway Blvd.), and all of Louis Herrera Commercial Development (NE Corner of Rio Bravo / Broadway) would be implemented. In fact, it appears that none of these projects will be implemented as projected. Land development projects are expected to remain virtually stagnant for the next two years. As a result of these projections, it is proposed that re-analysis of key intersections associated with the Las Estancias Development be

considered in the absence of the assumed additional background traffic from the other approved developments.

Pertinent Programmed Highway Improvements in the Current MTP:

There are no Transportation Improvement Program projects in the immediate vicinity of the Rio Bravo / Coors Commercial Development project at this time. The New Mexico Department of Transportation is conducting a study of the Coors Corridor from Arenal south to Gun Club Rd. to define improvements needed to provide the needed capacity of the roadway corridor. There have been recent geometric improvements to the intersection of Arenal Rd. / Coors Blvd. under this program.

TIA Study Area:

The study area was established with the original Traffic Impact Study.

The following table reflected the trip generation data that was utilized in the 2008 Traffic Impact Study:

Rio Bravo / Coors Commercial Development (Final Land Uses) **Trip Generation Data**

USE (ITE CODE)	DESCRIPTION	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
		GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet		Units					
	Shopping Center (820)	262.80	12,726	170	109	570	618
	Home Improvement Superstore (862)	167.00	6,011	133	114	225	254
	Automobile Parts Sales (943)	7.50	457	8	8	22	23
	Medical-Dental Office Building (720)	10.30	206	20	5	10	28
	Specialty Retail Center (814)	24.00	1,064	103	131	35	44
	Walgreen's (Local Data)	16.50	2,063	37	26	136	142
	Fast Food Restaurant w/ Drive-Thru Window (934)	3.50	1,736	95	91	63	58
	High Turnover (Sit-Down) Restaurant (932)	23.10	2,937	138	128	154	98
	Drive-In Bank (912)	4.00	1,563	45	33	102	102
	Residential Condominium / Townhouse (230)	28.00	218	3	15	14	7
	Subtotal		28,981	752	660	1,331	1,374
Pass-by Trip Reduction		20%				(266)	(275)
Net New Trips to System			28,981	752	660	1,065	1,099

The calculated trip generation rate based on the final approved site plan is summarized in the following table based on the ITE Trip Generation Manual (8th Edition) which is very similar to the 7th Edition:

Las Estancias Comparative Trip Generation Rates (Final Site Plan)
(Final Approved Site Plan Specific Users vs TIS)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
DESCRIPTION		GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units				
Department Store (875)	82.50	1,888	26	17	73	73
Apparel Store (876)	56.30	3,738	45	11	108	108
Pet Supply Superstore (866)	12.30	-	-	-	21	21
Office Supply Superstore (867)	20.40	-	-	-	37	33
Arts and Crafts Store (879)	34.10	1,928	78	81	97	114
Home Improvement Superstore (862)	140.00	4,061	101	76	159	173
Shopping Center (820)	82.40	5,988	84	54	274	285
Bed and Linen Superstore (872)	30.80	-	-	-	28	40
Medical-Dental Office Building (720)	11.20	243	20	5	11	30
Specialty Retail Center (814)	6.20	303	64	82	16	20
Pharmacy/Drugstore w/Drive-Through Window (881)	16.50	1,455	25	19	85	85
Fast Food Restaurant w/ Drive-Thru Window (934)	3.50	1,736	88	85	62	57
High Turnover (Sit-Down) Restaurant (932)	18.50	2,352	111	102	122	85
Drive-In Bank (912)	3.00	418	16	12	40	42
Residential Condominium / Townhouse (230)	25.00	193	3	14	13	6
Subtotal		24,303	661	558	1,146	1,172
Pass-by Trip Reduction		20%			224	224
Net New Trips to System		24,303	661	558	922	948
Primary/Diverted Link Trips in Original TIS		28,981	752	660	1,065	1,099
Net Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		4,678	91	102	143	151
% Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		16%	12%	15%	13%	14%

Note that there is an average of an approximately 13% reduction in the traffic generation rate assumed in the 2008 Traffic Impact Study approved by the County and by the State.

Under the alternate land use proposal, the calculated trip generation rates are summarized in the following table:

Las Estancias Comparative Trip Generation Rates (Rev. Site Plan)						
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)						
USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
	DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units				
	Shopping Center (820)	121.30	7,699	105	67	355 369
	Apparel Store (876)	28.00	1,859	22	6	54 54
	Office Supply Superstore (867)	21.00	-	-	-	38 34
	Pet Supply Superstore (866)	21.00	-	-	-	35 35
	Specialty Retail Center (814)	6.20	303	64	82	16 20
	Pharmacy/Drugstore w/Drive-Through Window (881)	16.50	1,455	25	19	85 85
	Fast Food Restaurant w/ Drive-Thru Window (934)	3.50	1,736	88	85	62 57
	High Turnover (Sit-Down) Restaurant (932)	18.00	2,289	108	100	118 82
	Drive-In Bank (912)	3.00	418	16	12	40 42
	Residential Condominium / Townhouse (230)	25.00	193	3	14	13 6
	Hospital (610)	60.00	2,800	109	76	98 135
	Church (560)	50.00	456	17	11	11 12
	Medical-Dental Office Building (720)	27.20	897	49	13	24 66
	Junior / Community College (540)	280.00	521	112	25	122 68
	General Office Building (710) - Less than 51,000 S.F.	21.00	309	38	5	8 41
	Subtotal		20,935	756	515	1,079 1,106
	Pass-by Trip Reduction	20%				161 156
	Net New Trips to System		20,935	756	515	918 950
	Primary/Diverted Link Trips in Original TIS		28,981	752	660	1,065 1,099
	Net Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		8,046	(4)	145	147 149
	% Decrease (Increase) in Trips (Original TIS vs Revised Site Plan)		28%	-1%	22%	14% 14%

Note that there is an average of an approximately 14% reduction in the traffic generation rate assumed in the 2008 Traffic Impact Study approved by the County and by the State.

Under either land use scenario (C.P.C. approved or alternate), there is a significant and similar reduction in trip generation rates for the project. Therefore, it can be concluded that the impact the adjacent transportation system will be reduced. It is proposed that the update to the Traffic Impact Study utilize the trip generation from the final approved site plan unless the proposed alternate plan has a significantly higher trip generation rate. In that case, the higher value should be utilized so the either option may be pursued with respect to the transportation impact to the adjacent roadway system. Under that proposal, the trips utilized for the updated study will utilize those associated with the approved site plan except for the AM Peak Hour Entering Volume of 756 trips per hour which will be taken from the Trip Generation rate from the Alternate Plan.

Analytical Tool Proposed for Conduct of the TIA:

Trip generation rates shall be established based in ITE Trip Generation Manual (8th Edition) as depicted in the above tables.

Trip distribution of the newly generated trips shall be proportional to the distribution of the Albuquerque Metropolitan population within a four-mile radius of the project. Since most of the uses are for the purposed of serving the local community, then a four-mile radius should accurately reflect the trip distribution in the service area for this site. The four-mile radius extends north of Central Ave. to about Bluewater Rd. and east to I-25. It extends west beyond 118th St. and south almost to Los Padillos Rd. Attached is a four-mile radius circle overlaid on the MRCOG DASZ map.

Signalized and unsignalized intersection analyses shall be performed utilizing Synchro Version 7 for both signalized and unsignalized intersections included in the analysis.

Queuing at signalized intersections shall be calculated utilizing methodology based on Poisson's arrivals with a 95th percentile confidence level. Queuing at unsignalized intersections shall be based on 2000 HCM Methodology or Synchro 7 Methodology.

Other analytical tools utilized shall conform to the 2000 Highway Capacity Manual and / or the 2004 AASHTO Manual.

Anticipated Level of Traffic Analysis:

Based on the size of the proposed project and the area in which it is located, it was determined that the level of traffic analysis for the 2008 Traffic Impact Study be an implementation year as well as the horizon year analysis. The implementation year was projected to be 2012. A background traffic growth rate was calculated based on Mid-Region Council of Governments regional model data and applied to recent traffic count data to project the 2012 volumes.

For this Traffic Impact Study Update, only an implementation year analysis is proposed. Also, due to the slowdown in the regional economy and the fact that the 2008 Traffic Impact Study made no recommendations for most of the intersection in the analysis, a revised analysis is proposed to update the analysis to reflect 1) the current approved and / or alternate site plan with reduced traffic, 2) reduced background traffic volumes resulting from lack of anticipated land development projects over the past two years and the next two years, 3) current traffic data for the existing roadways and intersections, 4) current geometric improvements at the intersections to be analyzed, and 5) the addition of Unser Blvd. connection to the traffic system.

Anticipated Traffic Monitoring and / or Field Data Collection:

It is anticipated that new field traffic counts may need to be collected for the Traffic Impact Analysis Update for this project for critical intersections that were flagged in the 2008 study. The turning movements counts volumes for the intersection analyzed in the 2008 study were collected in 2006 and 2007. More recent 2008 link volume data has been obtained for parts of Dennis Chavez Blvd., Rio Bravo Blvd., Coors Blvd., Isleta

Blvd., and 2nd St. to consider to determine the short term growth rates for those links from the time that data was collected for the 2008 study (2006 or 2007) to verify whether or not the growth rates utilized in the 2008 study accurately reflect actual roadway volume characteristics. It is proposed that the 2006 and 2007 turning movements volumes collected for the 2008 study be adjusted to conform to the 2008 link volume data or that new traffic counts be conducted for the following intersections and utilized as a basis for the Traffic Impact Study Update:

- 1) Rio Bravo Blvd. (Dennis Chavez Blvd.) / Coors Blvd.
- 2) Rio Bravo Blvd. / Isleta Blvd.
- 3) Arenal Rd. / Coors Blvd.

Analysis of the above three intersections is proposed to determine the appropriate recommended mitigation improvements under the changed conditions associated with this project.

Minor adjustments in turning movement volumes will be manually made to the intersections of Rio Bravo Blvd. (Dennis Chavez Blvd.) / Coors Blvd. and Arenal Rd. / Coors Blvd. to account for the new Unser connection being constructed north of Anderson Farms Subdivision which will complete the paved link of Unser Blvd. between Dennis Chavez Blvd. to Interstate 40 and beyond. The new Unser Blvd. connection will impact the eastbound left turn volumes and the southbound right turn volumes at Dennis Chavez Blvd. (Rio Bravo Blvd.) / Coors Blvd. as well as the eastbound left turn volumes, the northbound thru volumes, and the southbound thru and right turn volumes at Arenal Rd. / Coors Blvd. Volume adjustments at those intersections will need to be presented to the New Mexico Department of Transportation and the Bernalillo County Public Works Department for review and approval before the Traffic Impact Study Update is completed.

The attached Exhibit "A" lists all of the intersections analyzed in the 2008 Traffic Study and categorizes whether each intersection should be re-analyzed, or if the recommended mitigation measure (in the 2008 study) for the each intersection should be eliminated, or if the recommended mitigation measure for each intersection should be maintained based on changed conditions associated with the project. (See attached Exhibit "A")

Format of Traffic Monitoring Summary Statistics and Base Data:

To be determined by BCPWD during the scoping meeting.

Anticipated Level of Safety Analysis:

The proposed access to the project will be evaluated for sight distance restrictions due to horizontal and / or vertical alignment of Coors Blvd. consistent with the 2008 Traffic Study.

Analysis Years and Peak Periods:

The analysis year will continue to be the implementation year (2012). The TIA will evaluate the AM Peak Hour and the PM Peak Hour (weekdays).

Initial Assessment of Development Impact on Other Modes of Transportation Including Pedestrian, Bicycle, and Transit:

The 2008 study considered the presence of Bicycle and Pedestrian facilities as outlined in the Long Range Bikeway System for the Albuquerque Urban Area and describe how the site plan for the project makes provisions to comply with the Bikeway Plan. Additionally, the 2008 study described current transit routes to and from the proposed project and discussed the impacts of the project on the transit system and vice versa. Therefore, the Traffic Impact Study Update will not address those issues again.

Review of TIA Documentation Requirements:

The TIA Update will be reviewed by both the Bernalillo County Public Works Department, the New Mexico Department of Transportation, District 3 office, and the City of Albuquerque Transportation Development Section of the Development Services Division of the Planning Department.

Special Conditions:

The TIA Update will be required to comply with standards established by the Bernalillo County Public Works Department, the New Mexico Department of Transportation District 3 Office, and the City of Albuquerque.

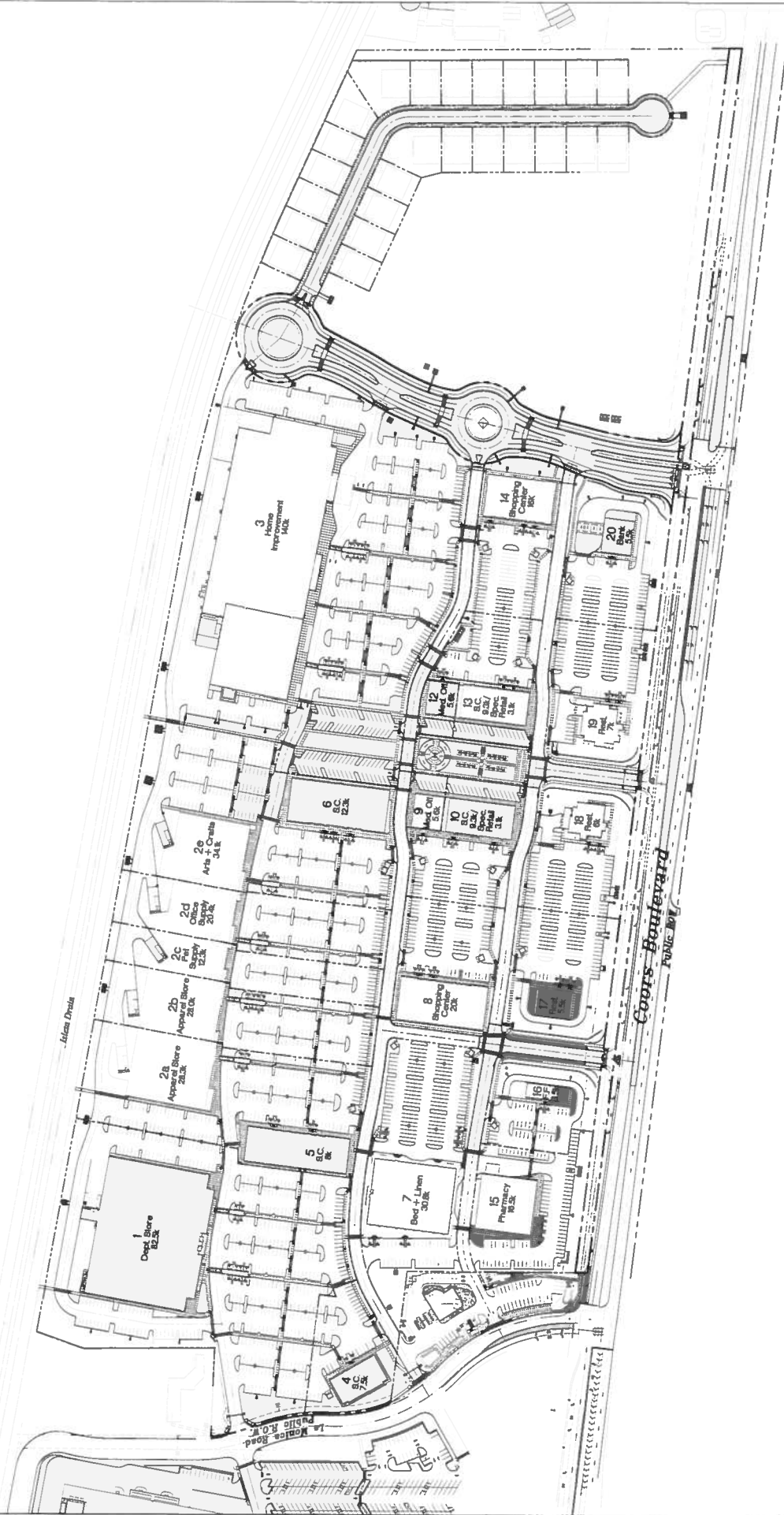
Las Estancias Development (Update)

Recommendations for Traffic Impact Study Update

Intersection:	Mitigation Measure Recommended in 2008 TIS	Comment / Recommendation
1 Rio Bravo / Coors Blvd.	Construct new EB right turn lane (300' plus transition) DMS Sign	This intersection is close to the project and expected to be impacted. Recommend re-analysis.
2 Rio Bravo / Loris Dr.	None	No recommendations based 2008 Traffic Study.
3 Rio Bravo / Isleta	Implement dual EB / WB left turn lanes DMS Sign	Intersection falls in the 2012 NO BUILD Condition. New volumes still expected to have reduced impact on the intersection. Recommend re-analysis.
4 Rio Bravo / Poco Loco	None	No recommendations based 2008 Traffic Study.
5 Rio Bravo / 2nd St.	Construct new NB right turn lane (250' plus transition) Extend NB left turn lane to a total length of 175' plus transition.	Due to the reduction in generated trips by this project and the distance of this intersection from the project, recommendation is to eliminate this requirement.
6 Rio Bravo / Prince St.	None	No recommendations based 2008 Traffic Study.
7 Rio Bravo / Broadway Blvd.	Extend SB right turn lane from 300' to 450' plus transition.	Previous recommendation to extend length of SB right turn lane would not be expected to significantly improve the operation of the intersection. With reduced volumes and consideration of distance from project, recommendation is to eliminate the requirement.
8 Rio Bravo / I-25 West Ramp	None	No recommendations based 2008 Traffic Study.
9 Rio Bravo / I-25 East Ramp	None	No recommendations based 2008 Traffic Study.
10 Central Ave. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
11 Bridge Blvd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
12 Tower Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
13 Sage Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
14 Eduardo Dr. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
15 Arenal Rd. / Coors Blvd.	Extend dual NB left turn lanes from 150' to 225' plus transition.	Due to reduction in projected trip generation rate for project and adjustments to volumes at intersection to account for Unser connection, it is recommended that this intersection be re-analyzed.
16 Blake Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
17 Barcelona Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
18 Gun Club Rd. / Coors Blvd.	None	No recommendations based 2008 Traffic Study.
19 Lamonica Rd. / Coors Blvd.	Construct WB right turn overlap phase in signal	This intersection works acceptably during the AM and PM Peak Hour NO BUILD Conditions and is impacted significantly by the proposed Las Estancias Development. A reduction in volumes generated should not result in a change of recommended mitigation measures for this intersection.
20 Driveway "A" / Coors Blvd.	Signalize - Construct dual WB left turn lanes and one right turn lane.	The reduction in volumes generated by the project should not result in a change of recommendations, but probably a change in timing of implementation of signalization of the driveway. Signalization should be determined based on actual turning movement volumes counts applied to signal warrant criteria. Therefore, intersection volumes at Driveway "A" should be monitored to test to determine if signal is warranted.
21 Driveway "B" / Coors Blvd.	(Not Used)	N/A
22 Driveway "C" / Coors Blvd.	Right-in, right-out driveway	Reduction in project volumes generated should have no impact on the recommendations for Driveway "C".
23 Driveway "D" / Coors Blvd.	Right-in, right-out driveway	Reduction in project volumes generated should have no impact on the recommendations for Driveway "D".
24 Lamonica Dr. / Driveway "E"	Full Access	Reduction in project volumes generated should have no impact on the recommendations for Driveway "E".
25 Lamonica Dr. / Driveway "F"	Full Access	Reduction in project volumes generated should have no impact on the recommendations for Driveway "F".
26 Dennis Chavez Blvd. / 118th St.	None	No recommendations based 2008 Traffic Study.
27 Dennis Chavez Blvd. / 98th St.	None	No recommendations based 2008 Traffic Study.
28 Dennis Chavez Bd. / Unser Blvd.	None	No recommendations based 2008 Traffic Study.
XXX	Recommended re-analysis of intersection based on changed conditions.	
XXX	Recommend elimination of requirement mitigation measures based on changed conditions.	
XXX	Recommend mitigation measures be consistent with 2008 Study.	

Las Estancias

Approved Site Plan



Monday, September 13, 2010

Richard Meadows, Transportation Planner
Bernalillo County Public Works Department
2400 Broadway Blvd. SE
Albuquerque, NM 87102

Re: Las Estancias Update (Coors Blvd. S. of La Monica Dr.)

Dear Richard:

Attached are three (3) copies of the above referenced report, which is a supplemental report to the approved Rio Bravo / Coors Commercial Development (Las Estancias) Traffic Impact Study, which was finalized on June 30, 2008. This update was explained in the Scoping Study dated July 11, 2010 and made adjustments to the TIS analysis for the new site plan. Following are the Scoping Report, the revised *Summary of Results* and *Recommendations* for the new site plan, and the Appendix (including excerpts from the original TIS). This submittal is being made for your review and comment.

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

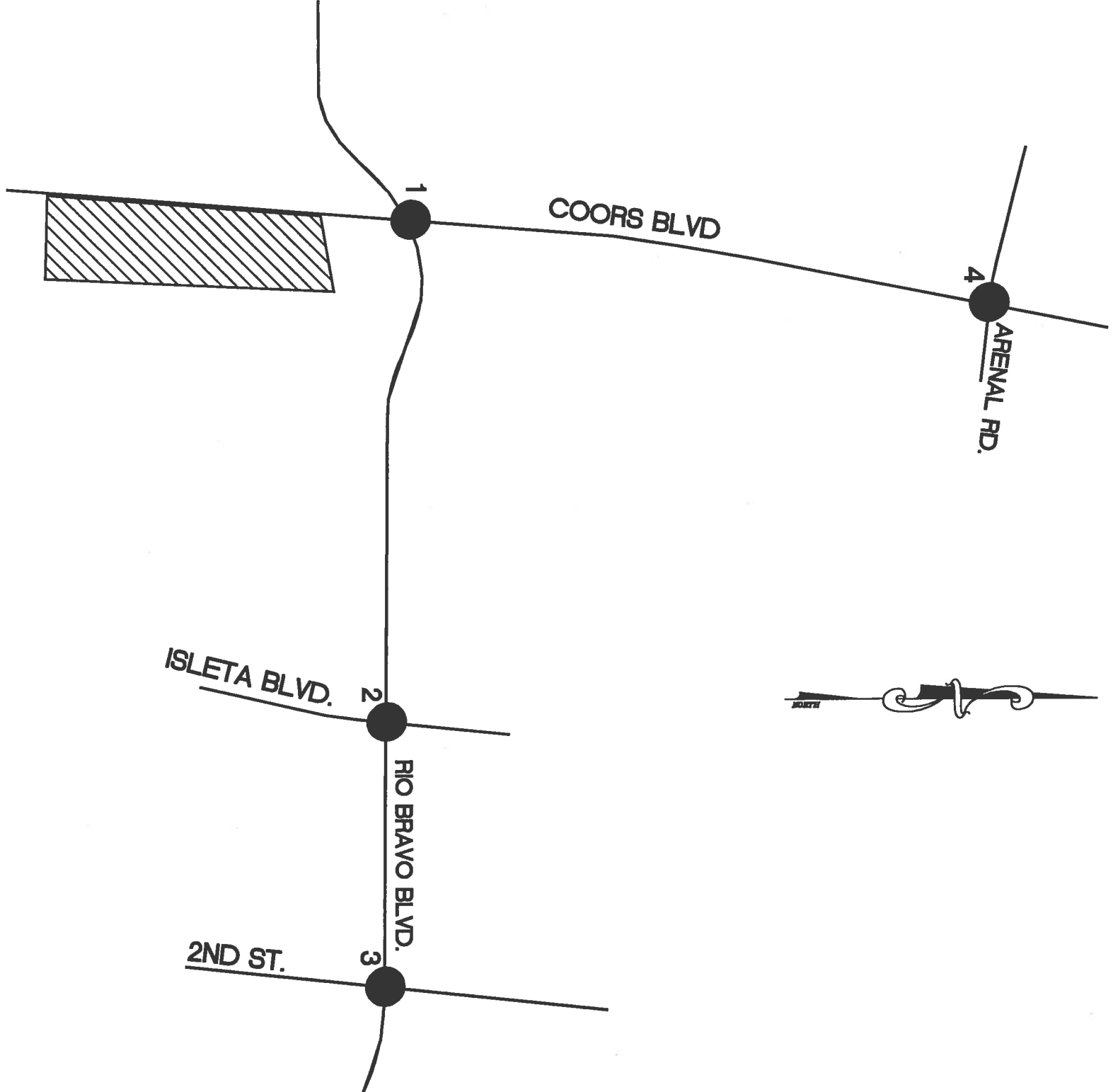
Best Regards,



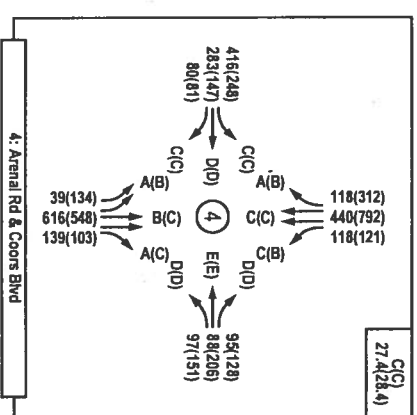
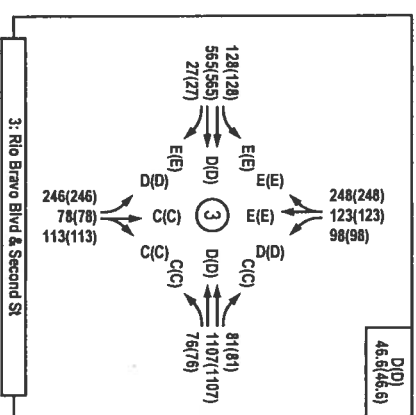
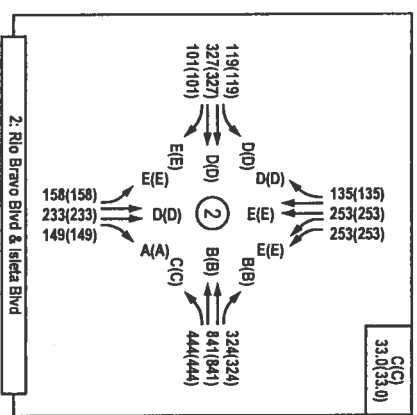
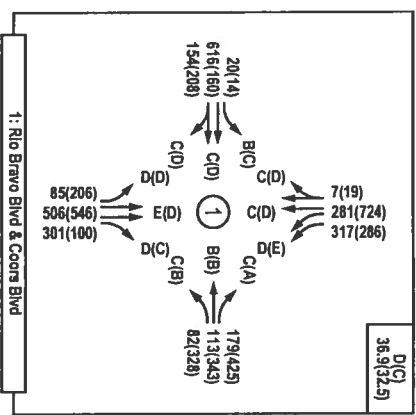
Terry O. Brown, P.E.

attachments as noted

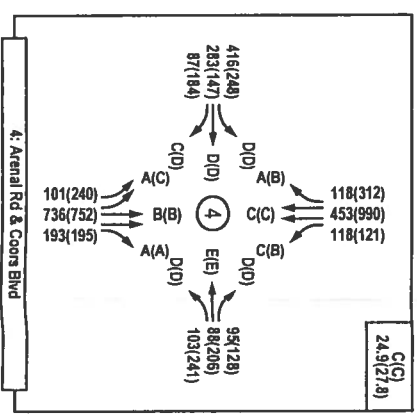
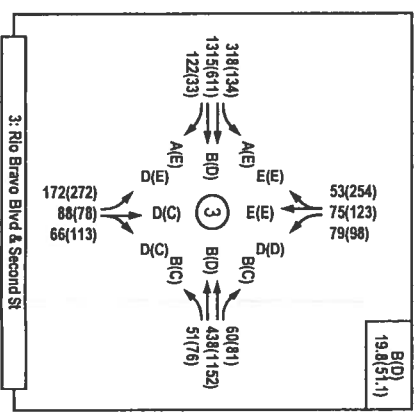
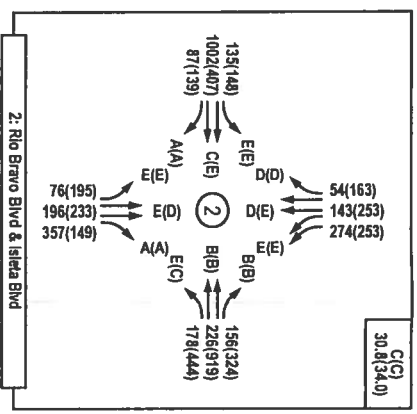
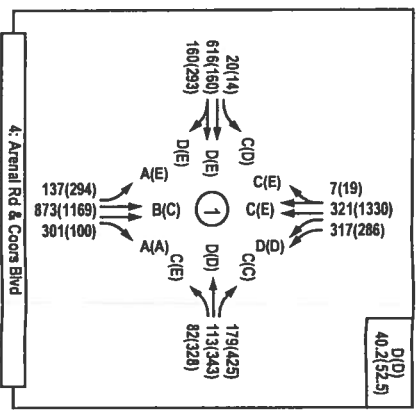
cc: Tony Abbo, NM DOT District 3 Traffic Engineer w/1 copy of report
Tony Loyd, City of Albuquerque w/ 1 copy of report
Wes Butero, SMC Property Company, LLC w/1 copy of report



NO BUILD Analysis



BUILD Analysis



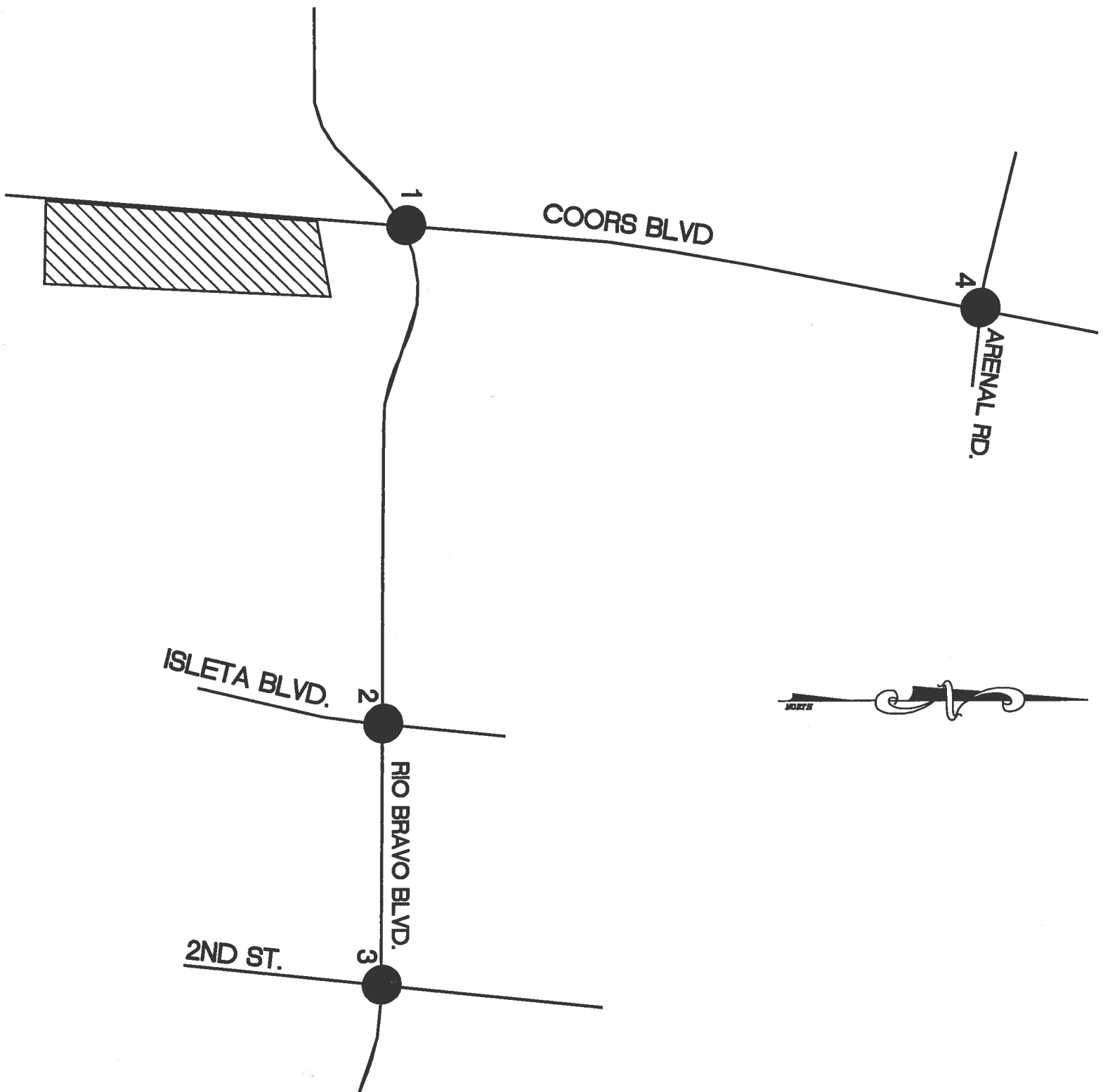
BUILD Analysis
MITIGATED

NO MITIGATION RECOMMENDED

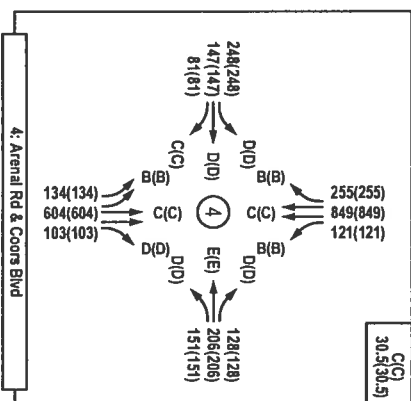
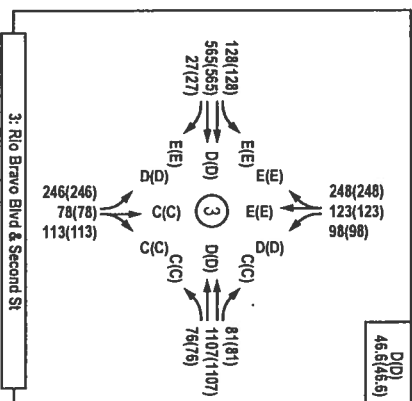
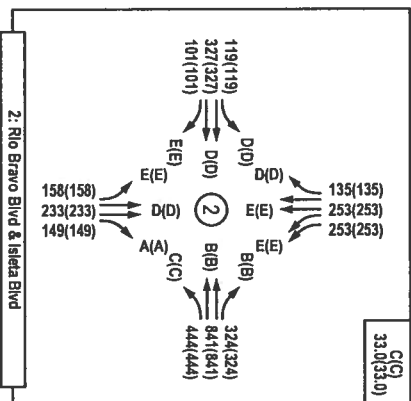
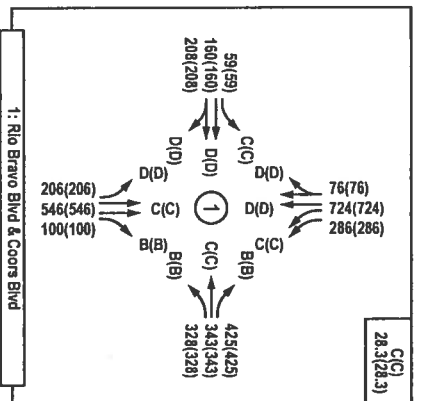
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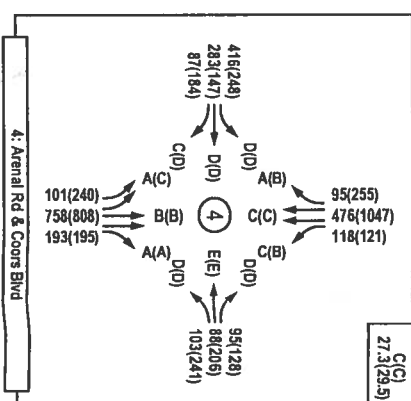
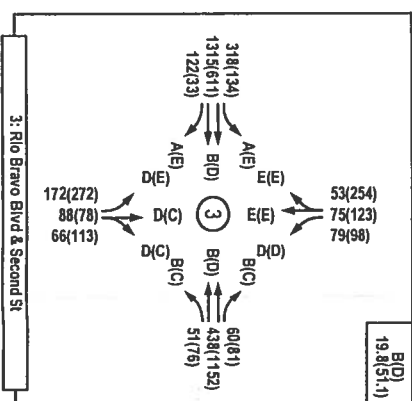
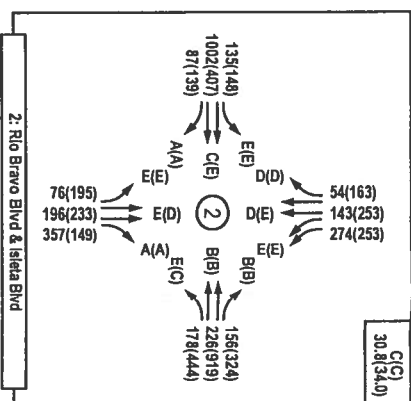
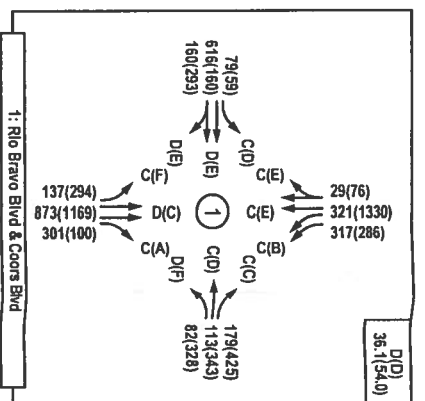
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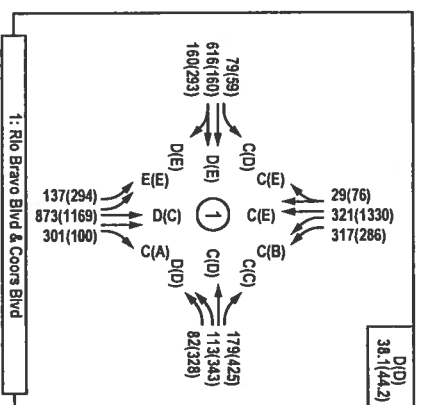
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BUILD Analysis



BUILD Analysis MITIGATED

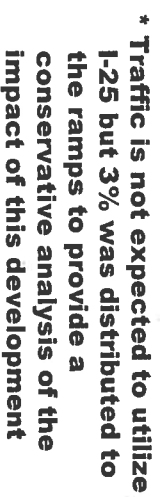


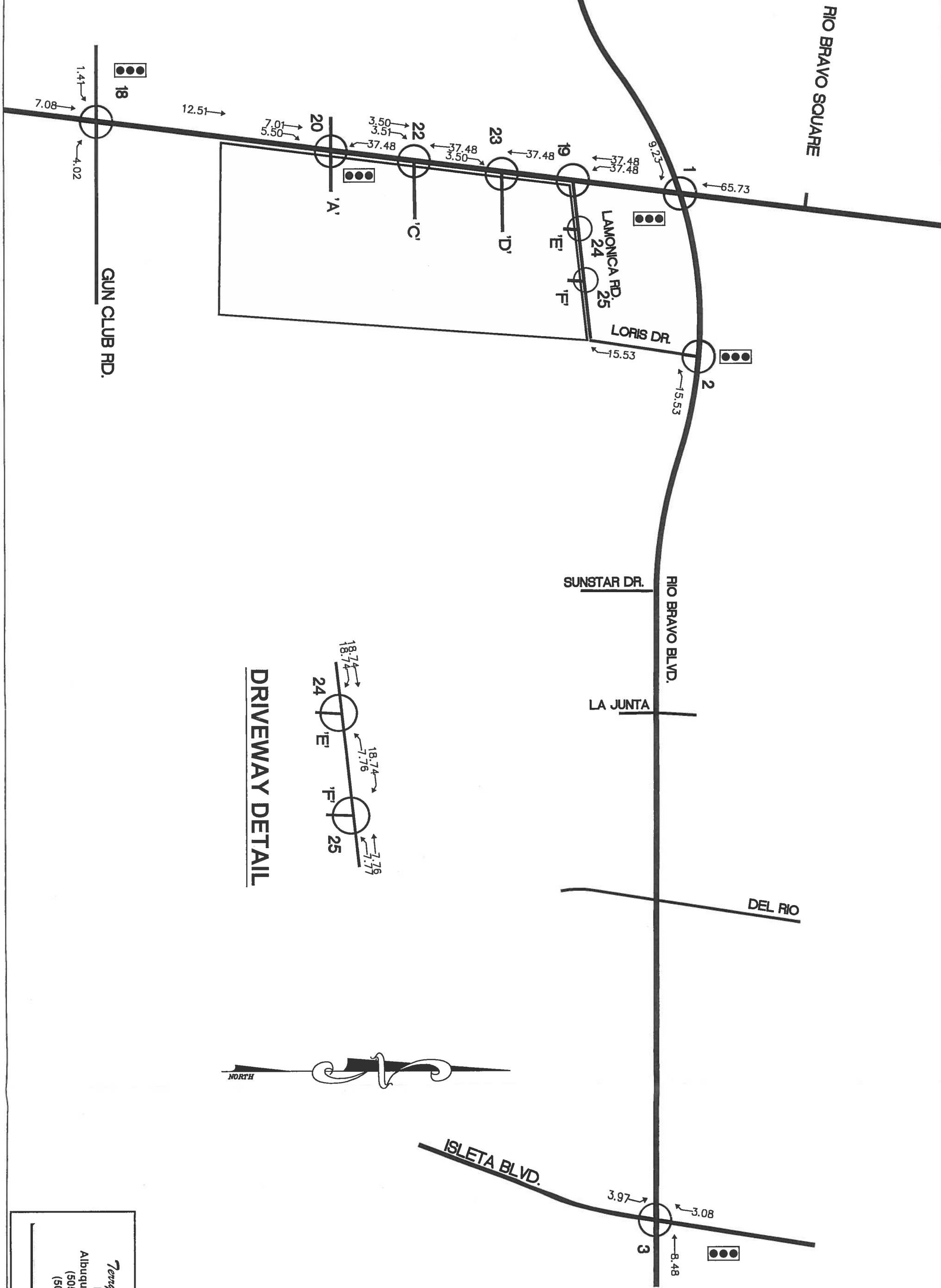
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**Rio Bravo Blvd / Coors Blvd
Trip Distribution Map**



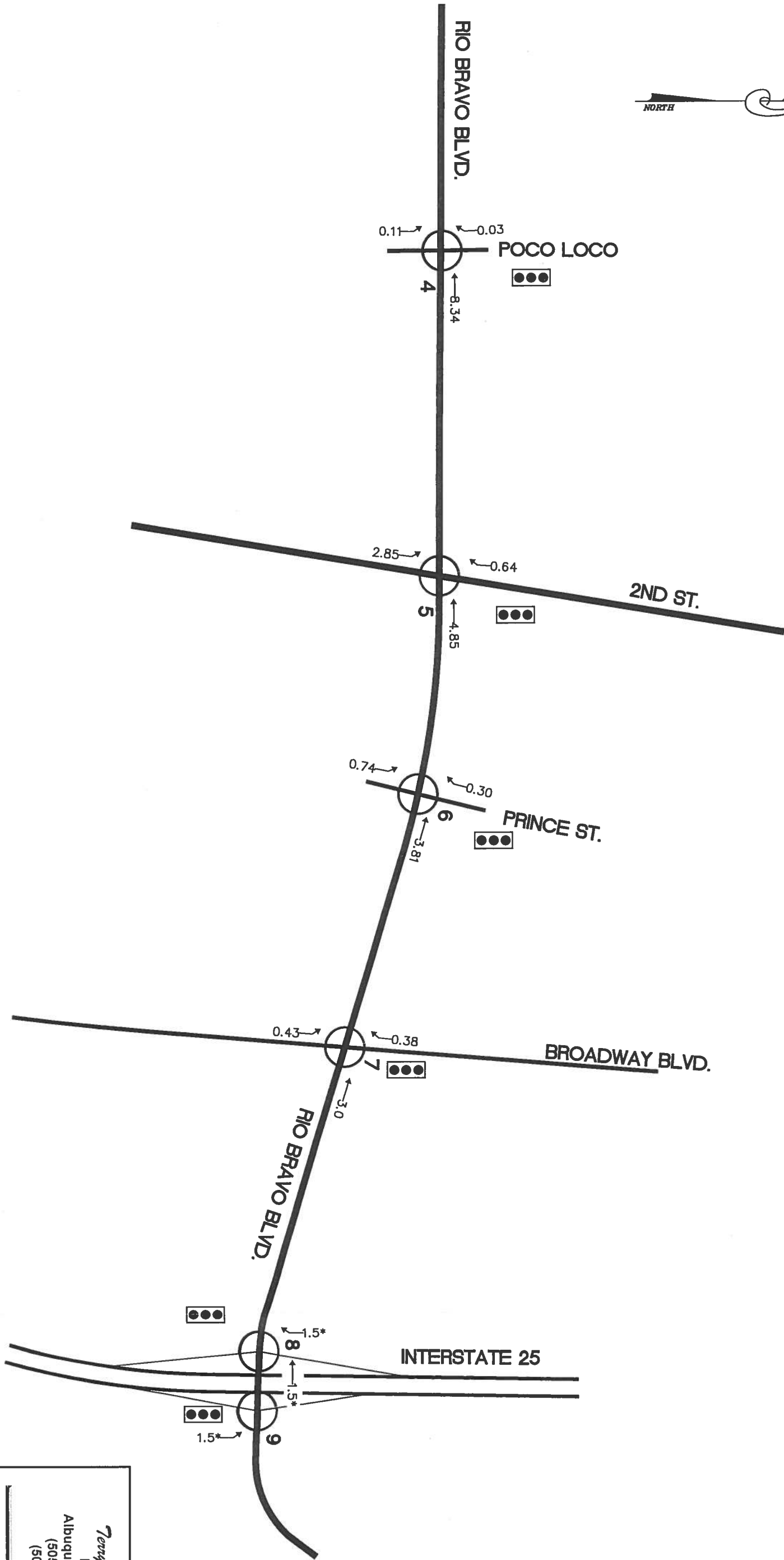


DRIVEWAY DETAIL



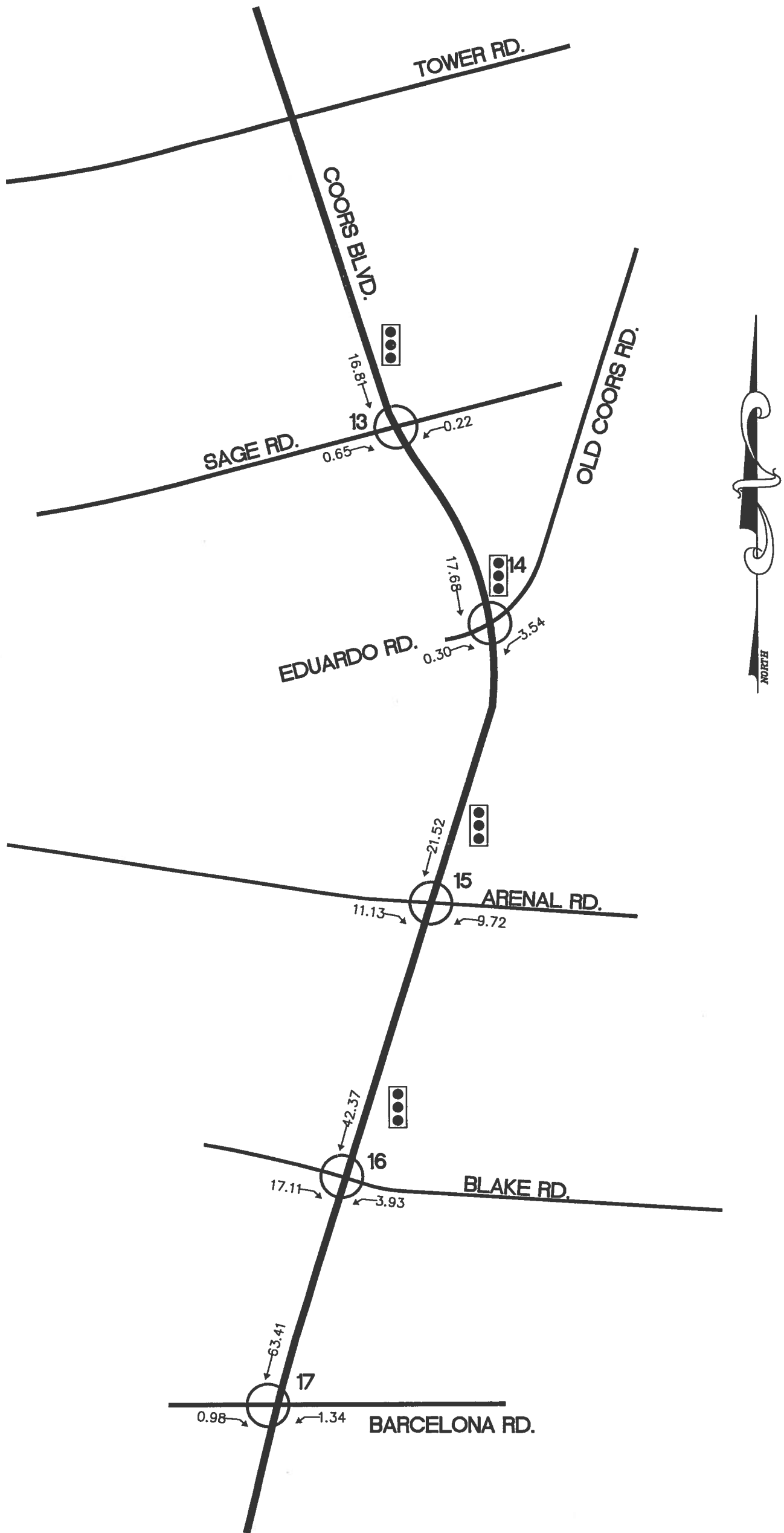
Rio Bravo / Coors Comm. Dev.
 Rio Bravo Blvd / Coors Blvd
 Peak Hour Volumes - % Entering - AM(PM)

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 Albuquerque, NM 87199-2051
 (505)883-8807 (Voice)
 (505)212-0267 (Fax)



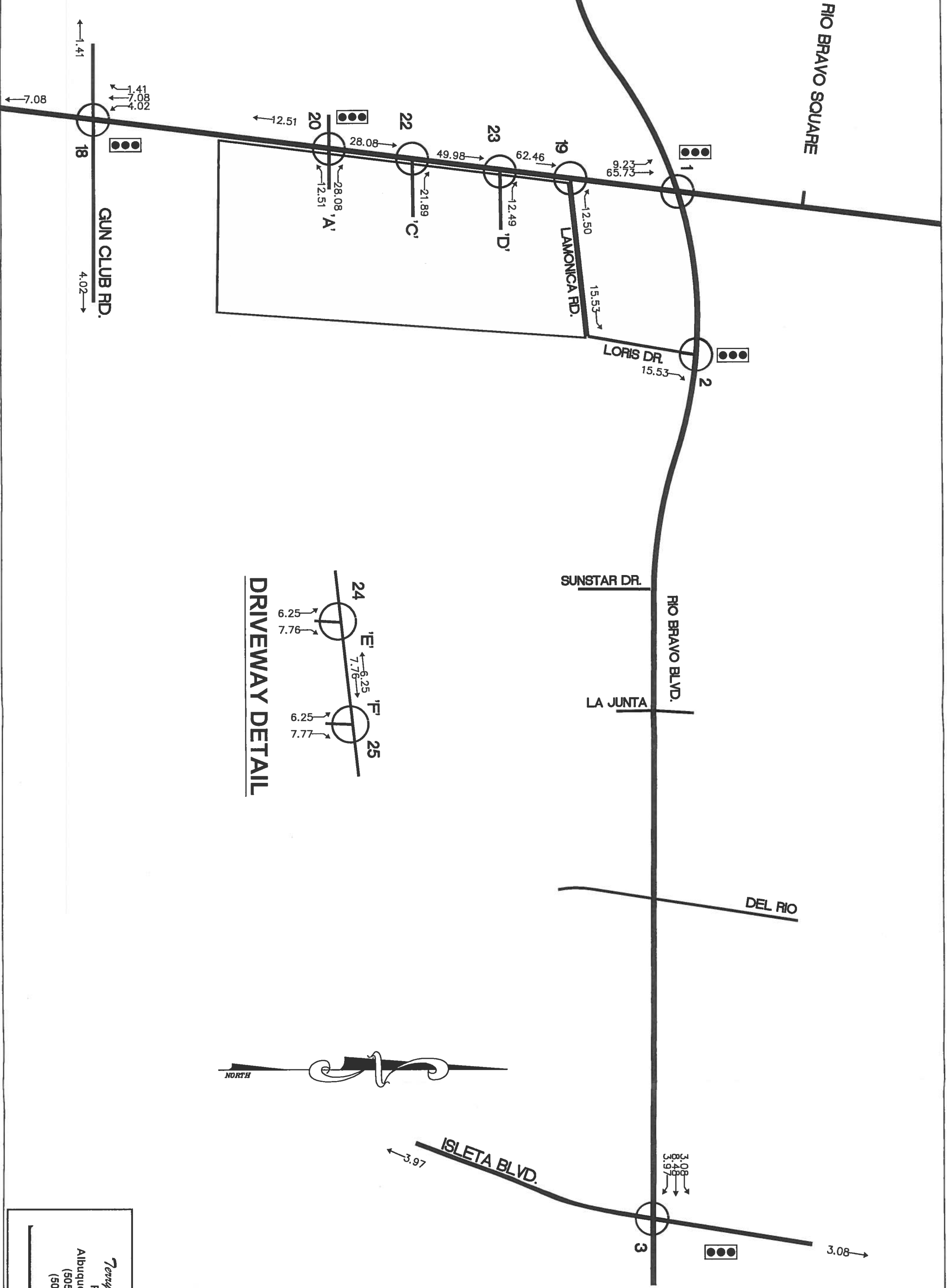
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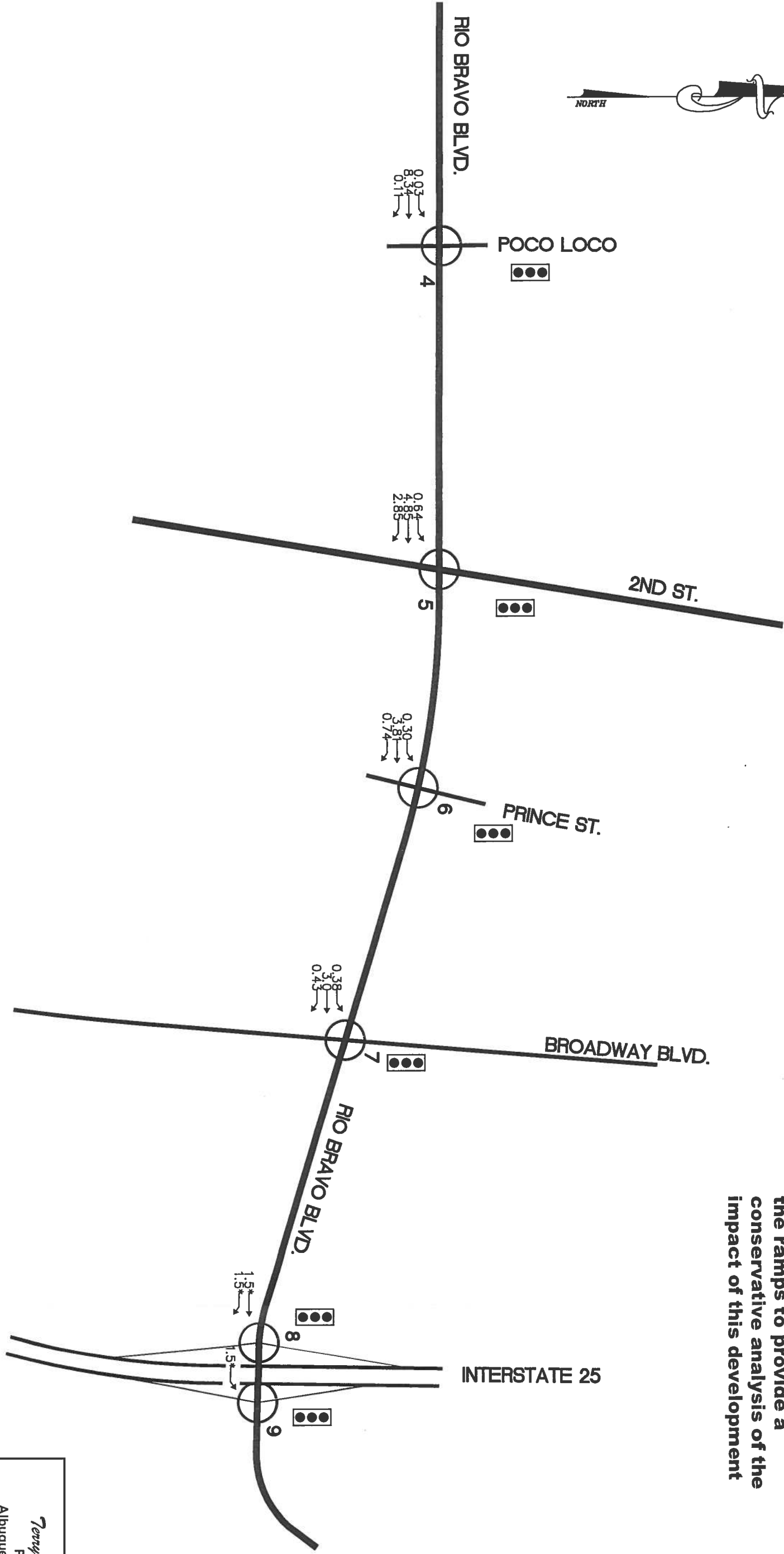
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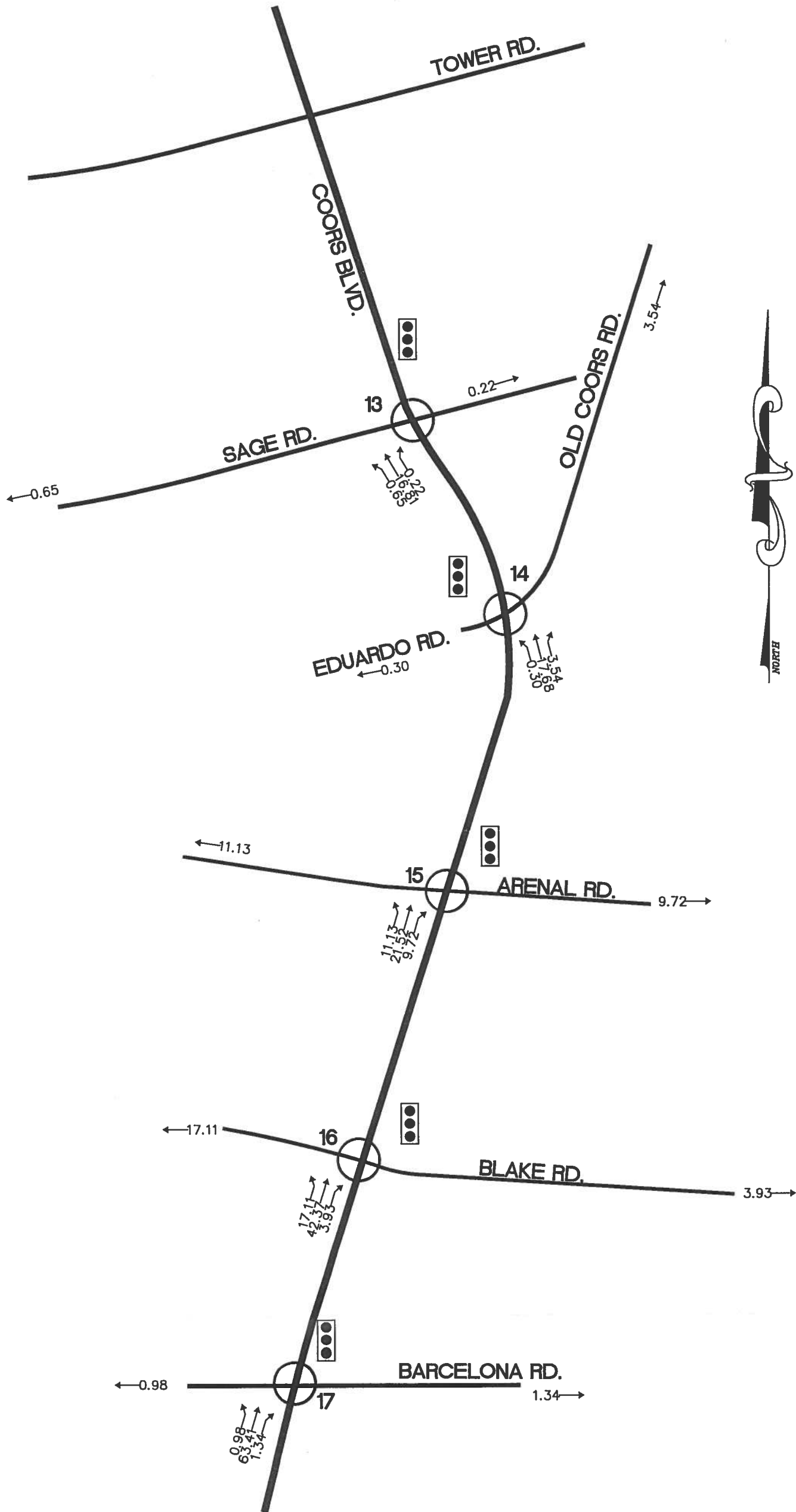
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* Traffic is not expected to utilize I-25 but 3% was distributed to the ramps to provide a conservative analysis of the impact of this development

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