Terry O. Brown P.E.

Mechenbier Building
(4545 Alameda Blvd. NE)

Traffic Impact Study

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Presented to:

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

Prepared for:

Mechenbier Construction
8500 Washington St. NE #A-6
Albuquerque, NM 87113

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

Traffic Impact Study
Mechenbier Building – (4545 Alameda Blvd. NE)

STUDY PURPOSE

The purpose of this study is to identify the development's impact on the adjacent transportation system. The study is being conducted in conjunction with a request for approval of a proposed plan for a commercial/office development located along Alameda Blvd. between Jefferson St. and Horizon Blvd. in Albuquerque, New Mexico. This study is presented to satisfy the requirements of the New Mexico Department of Transportation, District 3 and the City of Albuquerque.

GENERAL

The proposed development is located along the north side of Alameda Blvd., at 4545 Alameda Blvd. NE, between Jefferson St. and Horizon Blvd. (see Appendix Page A-1 - Vicinity Map). The existing intersections of Alameda Blvd. / 2nd St., Alameda Blvd. / Horizon Blvd., Alameda Blvd. / Jefferson St., Alameda Blvd. / San Mateo Blvd., Alameda Blvd. / I-25 West Frontage Rd. and Alameda Blvd. / I-25 East Frontage Rd. are currently signalized intersections and will be analyzed in this study. In the future, the traffic signal at Horizon Blvd. will be removed and the traffic signal at Balloon Museum Dr. to the east will become operational. Since the time of this change is unknown, this report analyzes the existing condition.

Currently, properties in the area are commercial/office in nature, with a small amount of residential.

PROPOSED DEVELOPMENT

The proposed plan for this site consists of a 24,340 SF retail/office building. This development will be constructed in one phase and is proposed to take access from one full access driveway along Alameda Blvd.

The anticipated implementation year for this site is the year 2009.

STUDY PROCEDURES

A scoping meeting was held in September of 2007 with City of Albuquerque Transportation Development staff (Tony Loyd) to discuss scope and methodology to be utilized within the report. Specific items included format, intersections to be studied, intersection analysis procedures, existing traffic counts, trip distribution methodology, and implementation year definition. The same was discussed with New Mexico Department of Transportation, District 3 staff (Tony Abbo) via e-mail.

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

- Calculate the generated trips for this proposed commercial / office development as defined on Page A-2 of the Appendix of this report and more specifically defined in the Trip Generation Table on Page A-4 of the Appendix of this report. The trips generated for the implementation year analyses (2009) will assume that 100% of the development has occurred. Since the number of office trips generated is quite low compared to the total, the office trips and commercial trips will not be distributed separately, but be grouped together as commercial.
- Calculate trip distribution for the newly generated trips by this development. The new commercial trips will be distributed based on year 2009 population within a two (2) mile radius boundary of the proposed site as shown on Page A-8 in the Appendix of this report.
- Determine Trip Assignments for the newly generated trips based on the results of the Trip Distribution Analysis and logical routing to and from the new site.
- Obtain AM Peak Hour and PM Peak Hour Turning Movement Volumes Traffic Counts for the intersections of Alameda Blvd. / 2nd St., Alameda Blvd. / Horizon Blvd., Alameda Blvd. / Jefferson St., Alameda Blvd. / San Mateo Blvd., Alameda Blvd. / I-25 West Frontage Rd., and Alameda Blvd. / I-25 East Frontage Rd.
- Determine Historic Growth Rates for background traffic volumes based on an analysis of the growth trend of recent AWDT Volumes obtained from 2002 thru 2006 MRCOG Traffic Flow Maps.
- Determine the 2009 NO BUILD Volumes for each intersection to be analyzed by growing the background traffic growth from the year of the counts to 2009.
- Add data from Trip Assignments Maps and Tables to the 2009 NO BUILD Volumes to obtain the 2009 BUILD Volumes for this project.
- Provide signalized and unsignalized intersection analyses for the following intersections:

INTERSECTION	TYPE CONTROL	NO BUILD ANALYSIS	BUILD ANALYSIS
Alameda Blvd. / 2nd St.	Traffic Signal	2009	2009
Alameda Blvd. / Horizon Blvd.	Traffic Signal	2009	2009
Alameda Blvd. / Jefferson St.	Traffic Signal	2009	2009
Alameda Blvd. / San Mateo Blvd.	Traffic Signal	2009	2009
Alameda Blvd. / I-25 W. Frntg. Rd.	Traffic Signal	2009	2009
Alameda Blvd. / I-25 E. Frntg. Rd.	Traffic Signal	2009	2009
Alameda Blvd. / Driveway 'A'	Stop Sign	N/A	2009

TRIP GENERATION WORKSHEET

Projected trips were calculated from the ITE trip generation data for shopping center, specialty retail center, and general office building – less than 51,000 SF. Trips for the development were determined based on land use defined on the Conceptual Site Development Plan on Page A-2 in the Appendix of this report.

See Appendix Page A-4 thru A-7 for the Trip Generation Summary Table and Worksheets for this project.

Mechenbier Building - Alameda
Trip Generation Data

USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
DESCRIPTION		*GROSS*	*ENTER*	*EXIT*	*ENTER*	*EXIT*
Summary Sheet	Units					
Shopping Center (820)	7.30	1,239	20	13	54	58
Specialty Retail Center (814)	7.30	350	67	85	17	22
General Office Building (710) - Less than 51,000 S.F.	9.74	143	18	2	4	19
Total	24.34	1,732	105	100	75	99

BACKGROUND TRAFFIC GROWTH

Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2002, 2003, 2004, 2005 and 2006 Traffic Flow maps prepared by the Mid-Region Council of Governments. Most of the Traffic Flow Data for those years taken from the MRCOG Traffic Flow Maps were Standard Data. The data from those years for each approach was plotted on a graph and a linear "regression trend line" calculated using the equation format $y=mx+b$. The growth rate was determined by calculating the average volume increase per year during the time period considered and dividing that volume into the most recent AWDT used in the analysis from which future volumes will be calculated. The rate of growth of that trend line was utilized as the annual growth rate for each approach if that calculated rate appeared feasible. However, there were some instances where the rate indicated a negative growth trend or appeared to be unreasonably high or low. In those cases, an appropriate growth rate from an adjacent segment of the same roadway was used, a shorter time span was used to determine the growth rate, or the growth rate was considered to be 1% or a generic 3% if appropriate. Due to the possible potential for growth in the area, it was believed that a 3% growth rate was appropriate for this study. Therefore, a growth rate of 3 % was used if the linear regression analysis showed the growth rate to be negative. Additionally, if the R^2 value of the trend line was low, other means of establishing a probable growth rate from the data accumulated was considered. Historical Growth Rate Graphs with linear regression trendlines are shown in the Appendix on Pages A-15 through A-27. Additionally, the growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (Appendix Pages A-30 through A-43).

PROJECTED PEAK HOUR TURNING MOVEMENTS FOR 2009 BUILDOUT

The calculated growth rates were applied to the most recent peak hour traffic counts (conducted for this study) to derive the 2009 AM and PM Peak Hour NO BUILD Volumes. To these volumes, the generated trips based on implementation of the proposed Site Development Plan (100% development) were added to obtain BUILD volumes for the intersection analyses. See Appendix Pages A-72 through A-78 for further information regarding the turning movement counts. Turning Movement Volumes Maps for the 2009 NO BUILD Conditions, Trips Generated, and 2009 BUILD Conditions are shown on Pages A-44 thru A-45 in the Appendix of this report.

The volumes along the project area were balanced using Synchro 6 in order to make the model analogous to actual conditions.

TRIP DISTRIBUTION

Primary and Diverted Linked Trips:

Commercial Land Use

Primary and diverted linked trips for the commercial land use development were distributed proportionally to the 2009 projected population of Data Analysis Subzones within a two-mile radius of the proposed development. Population data for the years 2000 and 2025 were taken from the 2025 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico, S-03-01, 2003, Appendix B and Appendix C, supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2000 and 2025 was interpolated linearly to obtain 2009 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of subareas and data analysis subzones is shown on Appendix Pages A-9 thru A-13.

RESULTS OF SIGNALIZED INTERSECTION CAPACITY ANALYSES

#1 - Alameda Blvd. / 2nd St. - Pages A-46 thru A-49

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

Alameda Blvd. / 2nd St.	No Build		BUILD	
2009	A.M.	P.M.	A.M.	P.M.
Existing Geometry	D – 40.9	C – 34.1	D – 46.9	C – 34.8

The implementation year analysis of the intersection of Alameda Blvd. / 2nd St. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour conditions. The implementation year analysis shows that the proposed development increases the AM delay at the intersection by 6 seconds and the PM delay by only 7 tenths of a second. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Alameda Blvd. / 2nd St.

Geometry used for this analysis of Alameda Blvd. / 2nd St. is demonstrated in the following table:

Existing Geometry (*Alameda Blvd. / 2nd St.*)

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

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Mechenbier Building (4545 Alameda Blvd. NE)
Intersection: **Alameda Blvd. / 2nd St.**

2009

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*44*	*100*	*2*	*1,597*	*Cont*	*1*	*196*	*200*
AM NO BUILD Queue	1	47	75	2	1,696	875	1	208	250
AM BUILD Queue	**1**	**47**	**75**	**2**	**1,706**	**875**	**1**	**208**	**250**
Existing Lane Length	*1*	*114*	*100*	*2*	*1,005*	*Cont*	*1*	*203*	*200*
PM NO BUILD Queue	1	121	175	2	1,067	575	1	216	250
PM BUILD Queue	**1**	**121**	**175**	**2**	**1,074**	**575**	**1**	**216**	**250**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*74*	*100*	*2*	*537*	*Cont*	*1*	*36*	*150*
AM NO BUILD Queue	1	79	125	2	572	350	1	38	75
AM BUILD Queue	**1**	**84**	**125**	**2**	**582**	**350**	**1**	**42**	**75**
Existing Lane Length	*1*	*197*	*100*	*2*	*1,398*	*Cont*	*1*	*65*	*150*
PM NO BUILD Queue	1	210	250	2	1,490	775	1	69	**100**
PM BUILD Queue	**1**	**215**	**250**	**2**	**1,500**	**775**	**1**	**73**	**125**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*2*	*182*	*150*	*2*	*299*	*Cont*	*0*	*402*	*Cont.*
AM NO BUILD Queue	2	193	150	2	317	225	0	426	450
AM BUILD Queue	**2**	**193**	**150**	**2**	**317**	**225**	**0**	**431**	**450**
Existing Lane Length	*2*	*300*	*150*	*2*	*325*	*Cont*	*0*	*86*	*Cont.*
PM NO BUILD Queue	2	318	225	2	345	225	0	91	125
PM BUILD Queue	**2**	**318**	**225**	**2**	**345**	**225**	**0**	**94**	**125**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*2*	*78*	*175*	*2*	*222*	*Cont*	*0*	*37*	*Cont.*
AM NO BUILD Queue	2	84	75	2	240	175	0	40	75
AM BUILD Queue	**2**	**89**	**75**	**2**	**240**	**175**	**0**	**40**	**75**
Existing Lane Length	*2*	*49*	*175*	*2*	*267*	*Cont*	*0*	*52*	*Cont.*
PM NO BUILD Queue	2	53	**50**	2	288	200	0	56	100
PM BUILD Queue	**2**	**56**	**75**	**2**	**288**	**200**	**0**	**56**	**100**

	AM	PM
Cycle Length:	100	100

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates that the calculated queue > 1

The recommendations based on the queuing analysis for the auxiliary lanes at the intersection are summarized in the following table:

Lane Description	Existing Length (Ft)	NO BUILD Length (F	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	100	175	175	**175' plus transition.**
Eastbound Right Turn:*	200	130	130	No Recommendation
Westbound Left Turn:	100	250	250	**250' plus transition.**
Westbound Right Turn:*	150	50	60	No Recommendation
Northbound Left Turn:	150	225	225	**225' plus transition.**
Northbound Right Turn:*	Cont.	230	230	No Recommendation
Southbound Left Turn:	175	75	75	No Recommendation
Southbound Right Turn:*	Cont.	50	50	No Recommendation

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

#2 - Alameda Blvd. / Horizon Blvd. - Pages A-50 thru A-53

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

Alameda Blvd. / Horizon Blvd.	No Build		BUILD	
2009	A.M.	P.M.	A.M.	P.M.
Existing Geometry	A – 2.5	A – 9.0	A – 1.7	A – 7.2

The implementation year analysis of the intersection of Alameda Blvd. / Horizon Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM peak hour conditions. The implementation year analysis shows that there is no increase in delay at the intersection due to the development. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Alameda Blvd. / Horizon Blvd.

Geometry used for this analysis of Alameda Blvd. / Horizon Blvd. is demonstrated in the following table:

Existing Geometry (*Alameda Blvd. / Horizon Blvd.*)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Alameda Blvd.	1	0	1	1	0
WB Alameda Blvd.	1	0	2	0	1
SB Horizon Blvd.	1	0	0	0	1

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Mechenbier Building (4545 Alameda Blvd. NE)
Intersection: **Alameda Blvd. / Horizon Blvd.**

2009

Approach	Left Turns			Thru Movements				Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*58*	*100*	*2*	*1,521*	*Cont*		*0*	*0*	*0*
AM NO BUILD Queue	1	67	100	2	1,749	875		0	0	0
AM BUILD Queue	**1**	**67**	**100**	**2**	**1,791**	**900**		**0**	**0**	**0**
Existing Lane Length	*1*	*41*	*100*	*2*	*896*	*Cont*		*0*	*0*	*0*
PM NO BUILD Queue	1	47	75	2	1,030	575		0	0	0
PM BUILD Queue	**1**	**47**	**75**	**2**	**1,060**	**575**		**0**	**0**	**0**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*0*	*0*	*2*	*977*	*Cont*		*1*	*103*	*175*
AM NO BUILD Queue	1	0	0	2	1,124	600		1	118	150
AM BUILD Queue	**1**	**0**	**0**	**2**	**1,164**	**625**		**1**	**120**	**175**
Existing Lane Length	*1*	*0*	*0*	*2*	*2,102*	*Cont*		*1*	*69*	*175*
PM NO BUILD Queue	1	0	0	2	2,417	1,001	*	1	79	125
PM BUILD Queue	**1**	**0**	**0**	**2**	**2,456**	**1,001**	*	**1**	**81**	**125**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*0*	*0*	*0*	*0*	*0*	*Cont*		*0*	*0*	*0*
AM NO BUILD Queue	0	0	0	0	0	0		0	0	0
AM BUILD Queue	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**
Existing Lane Length	*0*	*0*	*0*	*0*	*0*	*Cont*		*0*	*0*	*0*
PM NO BUILD Queue	0	0	0	0	0	0		0	0	0
PM BUILD Queue	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*16*	*Cont.*	*0*	*0*	*Cont*		*1*	*7*	*Cont.*
AM NO BUILD Queue	1	18	50	0	0	0		1	8	25
AM BUILD Queue	**1**	**20**	**50**	**0**	**0**	**0**		**1**	**8**	**25**
Existing Lane Length	*1*	*138*	*Cont.*	*0*	*0*	*Cont*		*1*	*57*	*Cont.*
PM NO BUILD Queue	1	159	200	0	0	0		1	66	100
PM BUILD Queue	**1**	**160**	**200**	**0**	**0**	**0**		**1**	**66**	**100**

	AM	PM
Cycle Length:	100	100

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates that the calculated queue > 1

The recommendations based on the queuing analysis for the auxiliary lanes at the intersection are summarized in the following table:

Lane Description	Existing Length (Ft)	NO BUILD Length (F	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	100	100	100	No Recommendation
Eastbound Right Turn:*	0	0	0	No Recommendation
Westbound Left Turn:	0	0	0	No Recommendation
Westbound Right Turn:*	175	80	90	No Recommendation
Northbound Left Turn:	0	0	0	No Recommendation
Northbound Right Turn:*	0	0	0	No Recommendation
Southbound Left Turn:	Cont.	200	200	No Recommendation
Southbound Right Turn:*	Cont.	50	50	No Recommendation

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

#3 - Alameda Blvd. / Jefferson St. - Pages A-54 thru A-57

The results of the implementation year analysis of the signalized intersection of Alameda Blvd. / Jefferson St. are summarized in the following table:

Alameda Blvd. / Jefferson St.	No Build		BUILD	
2009	A.M.	P.M.	A.M.	P.M.
Existing Geometry	B – 14.2	B – 15.8	B – 14.1	B – 16.5

The implementation year analysis of the intersection of Alameda Blvd. / Jefferson St. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour conditions. The implementation year analysis shows that the proposed development does not increase the AM delay and increases the PM delay at the intersection by only 7 tenths of a second. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Alameda Blvd. / Jefferson St.

Geometry used for this analysis of Alameda Blvd. / Jefferson St. is demonstrated in the following table:

Existing Geometry (*Alameda Blvd. / Jefferson St.*)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Alameda Blvd.	1	0	1	1	0
WB Alameda Blvd.	1	0	1	1	0
NB Jefferson St.	1	0	1	1	0
SB Jefferson St.	1	0	1	1	0

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Mechenbier Building (4545 Alameda Blvd. NE)
Intersection: **Alameda Blvd. / Jefferson St.**

2009

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*112*	*175*	*2*	*1,233*	*Cont*	*0*	*273*	*Cont.*
AM NO BUILD Queue	1	129	175	2	1,418	750	0	314	350
AM BUILD Queue	**1**	**131**	**175**	**2**	**1,471**	**775**	**0**	**318**	**350**
Existing Lane Length	*1*	*30*	*175*	*2*	*1,253*	*Cont*	*0*	*119*	*Cont.*
PM NO BUILD Queue	1	35	75	2	1,441	750	0	137	175
PM BUILD Queue	**1**	**37**	**75**	**2**	**1,493**	**775**	**0**	**141**	**175**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*114*	*375*	*2*	*864*	*Cont*	*0*	*109*	*Cont.*
AM NO BUILD Queue	1	127	175	2	959	525	0	121	175
AM BUILD Queue	**1**	**127**	**175**	**2**	**1,014**	**550**	**0**	**121**	**175**
Existing Lane Length	*1*	*131*	*375*	*2*	*792*	*Cont*	*0*	*41*	*Cont.*
PM NO BUILD Queue	1	145	200	2	879	500	0	46	75
PM BUILD Queue	**1**	**145**	**200**	**2**	**918**	**500**	**0**	**46**	**75**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*129*	*175*	*2*	*76*	*Cont*	*0*	*120*	*Cont.*
AM NO BUILD Queue	1	137	175	2	81	75	0	127	175
AM BUILD Queue	**1**	**141**	**175**	**2**	**81**	**75**	**0**	**127**	**175**
Existing Lane Length	*1*	*130*	*175*	*2*	*47*	*Cont*	*0*	*96*	*Cont.*
PM NO BUILD Queue	1	138	175	2	50	50	0	102	150
PM BUILD Queue	**1**	**141**	**175**	**2**	**50**	**50**	**0**	**102**	**150**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*78*	*150*	*2*	*43*	*Cont*	*0*	*20*	*Cont.*
AM NO BUILD Queue	1	83	125	2	46	50	0	21	50
AM BUILD Queue	**1**	**83**	**125**	**2**	**46**	**50**	**0**	**23**	**50**
Existing Lane Length	*1*	*136*	*150*	*2*	*102*	*Cont*	*0*	*52*	*Cont.*
PM NO BUILD Queue	1	144	200	2	108	100	0	55	100
PM BUILD Queue	**1**	**144**	**200**	**2**	**108**	**100**	**0**	**56**	**100**

	AM	PM
Cycle Length:	100	100

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates that the calculated queue > 1

The recommendations based on the queuing analysis for the auxiliary lanes at the intersection are summarized in the following table:

Lane Description	Existing Length (Ft)	NO BUILD Length (F	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	175	175	175	No Recommendation
Eastbound Right Turn:*	Cont.	180	180	No Recommendation
Westbound Left Turn:	375	200	200	No Recommendation
Westbound Right Turn:*	Cont.	90	90	No Recommendation
Northbound Left Turn:	175	175	175	No Recommendation
Northbound Right Turn:*	Cont.	90	90	No Recommendation
Southbound Left Turn:	150	200	200	**200' plus transition.**
Southbound Right Turn:*	Cont.	50	50	No Recommendation

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

#4 – Alameda Blvd. / San Mateo Blvd. - Pages A-58 thru A-61

The results of the implementation year analysis of the signalized intersection of Alameda Blvd. / San Mateo Blvd. are summarized in the following table:

Alameda Blvd. / San Mateo Blvd.	No Build		BUILD	
2009	A.M.	P.M.	A.M.	P.M.
Existing Geometry	B – 12.1	C – 20.6	B – 18.9	C – 21.8

The implementation year analysis of the intersection of Alameda Blvd. / San Mateo Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour conditions. The implementation year analysis shows that the proposed development increases the delays at the intersection by 1.2 - 6.8 seconds. Therefore, this study concludes that the development of the proposed development presents no significant impact to the calculated delays at the intersection of Alameda Blvd. / San Mateo Blvd.

Geometry used for this analysis of Alameda Blvd. / San Mateo Blvd. is demonstrated in the following table:

Existing Geometry (*Alameda Blvd. / San Mateo Blvd.*)

Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Alameda Blvd.	1	0	1	1	0
WB Alameda Blvd.	1	0	1	1	0
NB San Mateo Blvd.	1	0	1	1	0
SB San Mateo Blvd.	1	0	0	1	0

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Mechenbier Building (4545 Alameda Blvd. NE)
Intersection: **Alameda Blvd. / San Mateo Blvd.**

2009

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*172*	*250*	*2*	*1,227*	*Cont*	*0*	*17*	*Cont.*
AM NO BUILD Queue	1	198	250	2	1,411	725	0	20	50
AM BUILD Queue	**1**	**198**	**250**	**2**	**1,462**	**750**	**0**	**21**	**50**
Existing Lane Length	*1*	*51*	*250*	*2*	*1,356*	*Cont*	*0*	*32*	*Cont.*
PM NO BUILD Queue	1	59	100	2	1,559	800	0	37	75
PM BUILD Queue	**1**	**59**	**100**	**2**	**1,609**	**825**	**0**	**38**	**75**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*54*	*225*	*2*	*1,082*	*Cont*	*0*	*416*	*Cont.*
AM NO BUILD Queue	1	60	100	2	1,201	650	0	462	475
AM BUILD Queue	**1**	**60**	**100**	**2**	**1,254**	**675**	**0**	**462**	**475**
Existing Lane Length	*1*	*56*	*225*	*2*	*1,181*	*Cont*	*0*	*97*	*Cont.*
PM NO BUILD Queue	1	62	100	2	1,311	700	0	108	150
PM BUILD Queue	**1**	**62**	**100**	**2**	**1,349**	**700**	**0**	**108**	**150**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*9*	*75*	*2*	*20*	*Cont*	*0*	*23*	*Cont.*
AM NO BUILD Queue	1	10	25	2	21	25	0	24	50
AM BUILD Queue	**1**	**11**	**25**	**2**	**21**	**25**	**0**	**24**	**50**
Existing Lane Length	*1*	*23*	*75*	*2*	*9*	*Cont*	*0*	*48*	*Cont.*
PM NO BUILD Queue	1	24	50	2	10	25	0	51	100
PM BUILD Queue	**1**	**25**	**50**	**2**	**10**	**25**	**0**	**51**	**100**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	*1*	*54*	*300*	*1*	*7*	*Cont*	*0*	*35*	*Cont.*
AM NO BUILD Queue	1	57	100	1	7	25	0	37	75
AM BUILD Queue	**1**	**57**	**100**	**1**	**7**	**25**	**0**	**37**	**75**
Existing Lane Length	*1*	*203*	*300*	*1*	*18*	*Cont*	*0*	*149*	*Cont.*
PM NO BUILD Queue	1	215	250	1	19	50	0	158	200
PM BUILD Queue	**1**	**215**	**250**	**1**	**19**	**50**	**0**	**158**	**200**

	AM	PM
Cycle Length:	100	100

NOTE: Queue lengths are in feet.

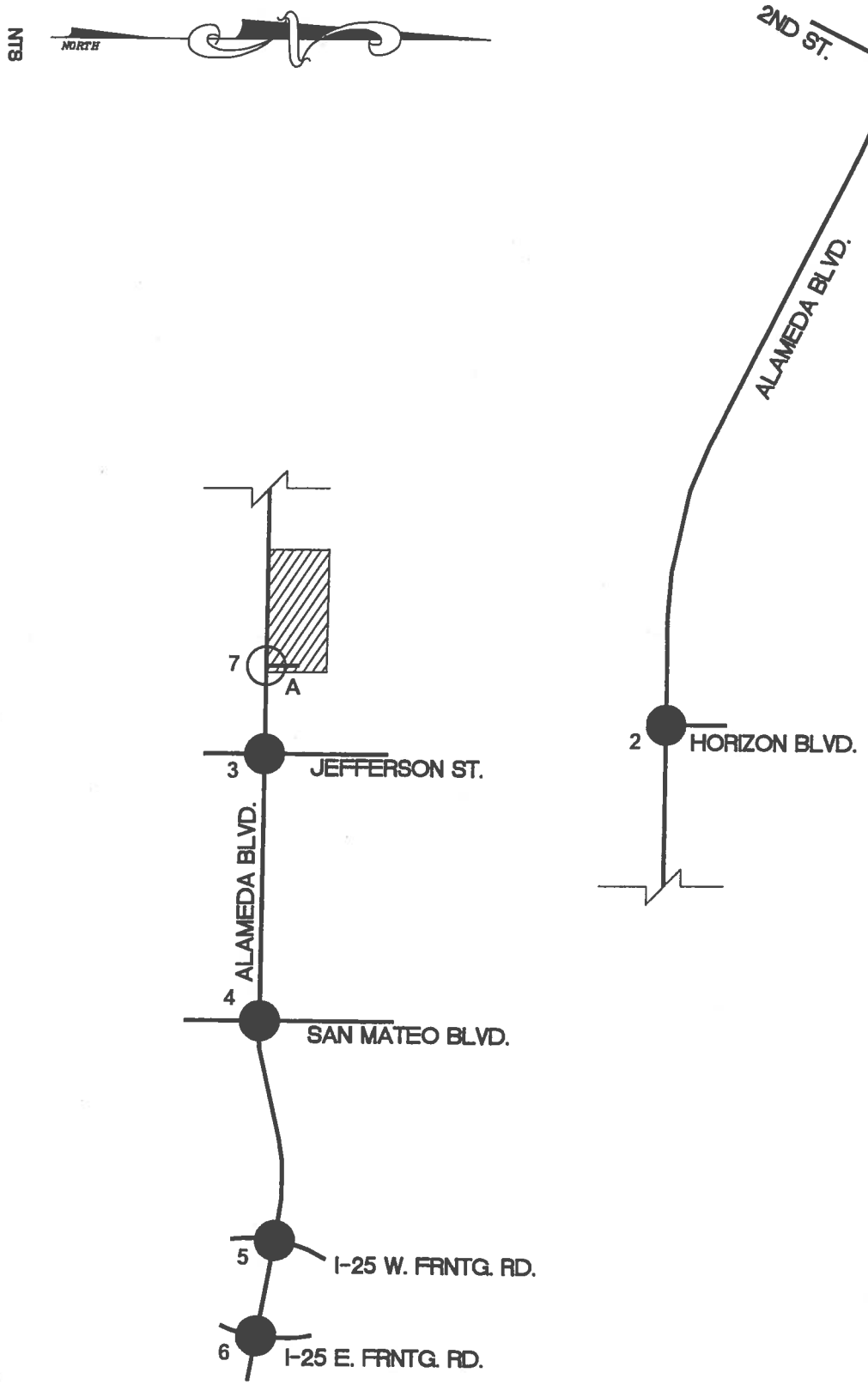
* - Queue Length of 1,001 indicates that the calculated queue > 1

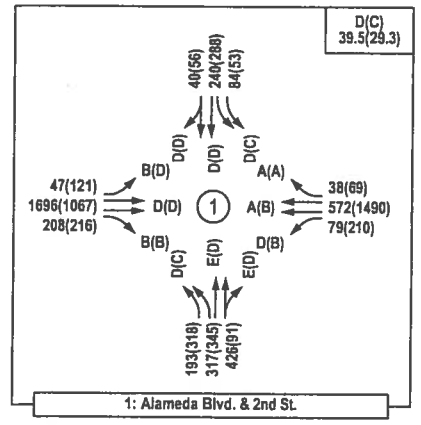
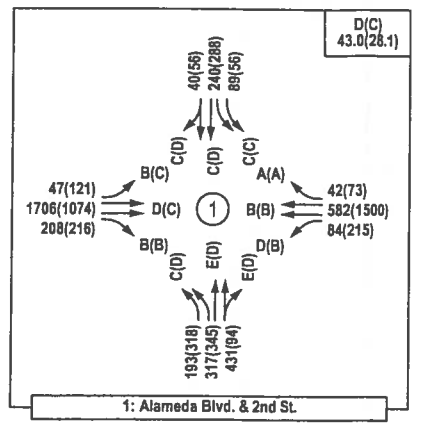
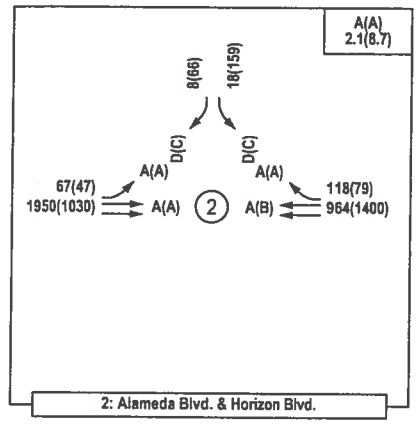
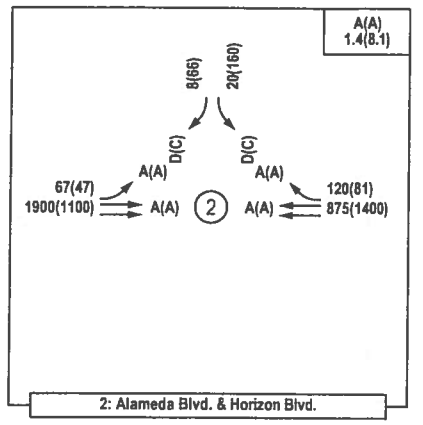
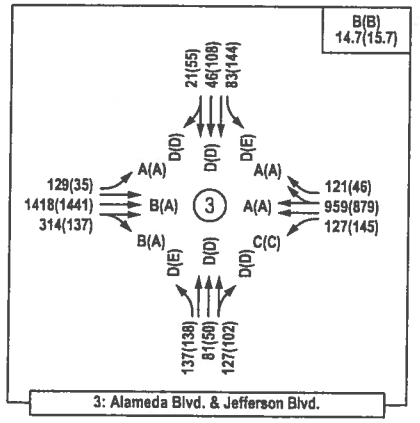
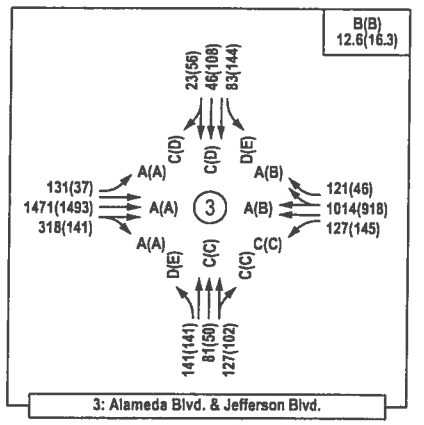
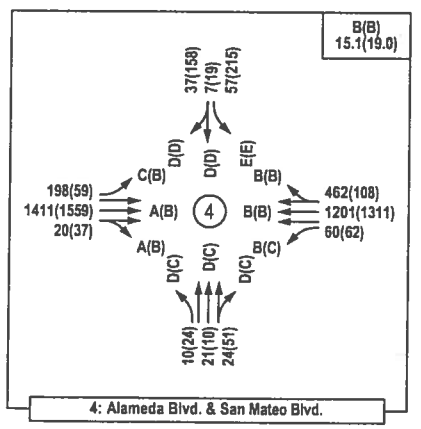
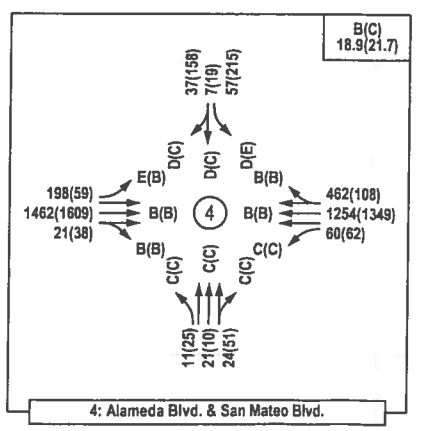
The recommendations based on the queuing analysis for the auxiliary lanes at the intersection are summarized in the following table:

Alameda Blvd.) for access. The driveway should be unsignalized and should be constructed with one entering lane and one exiting lane.

- Lengthen the EB, WB, and NB left turn lanes at Alameda Blvd. / 2nd St. to 175 feet, 250 feet, and 225 feet, respectively, plus transition.
- Lengthen the SB left turn lane at Alameda Blvd. / Jefferson St. to 200 feet plus transition.

Appendix

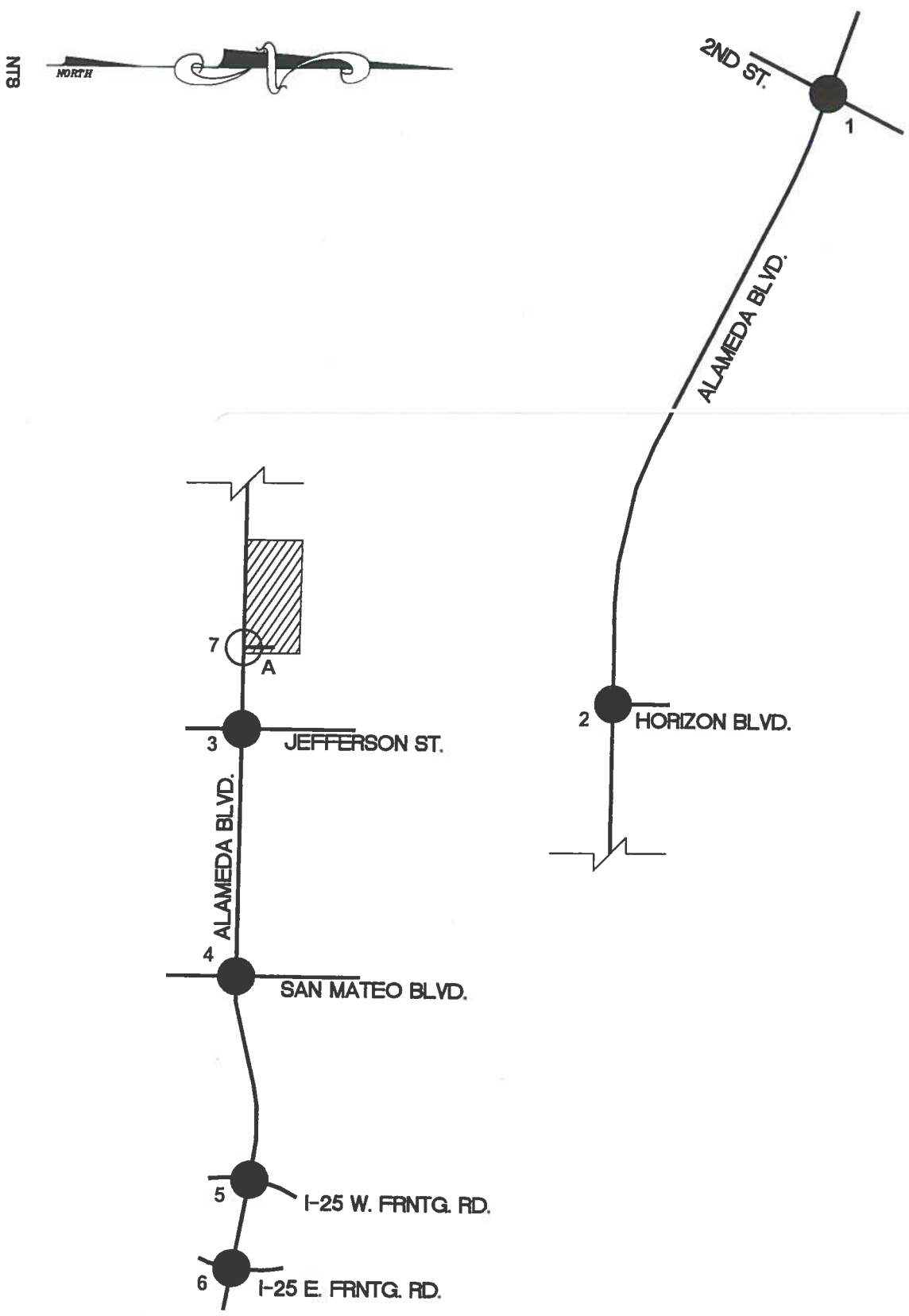


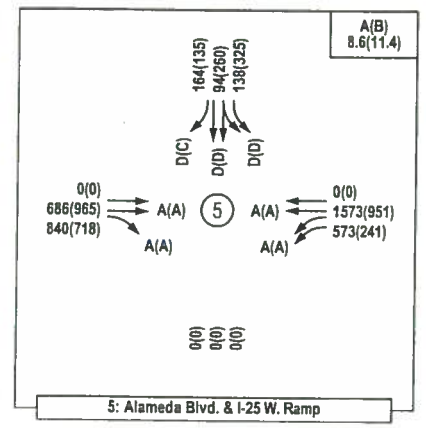
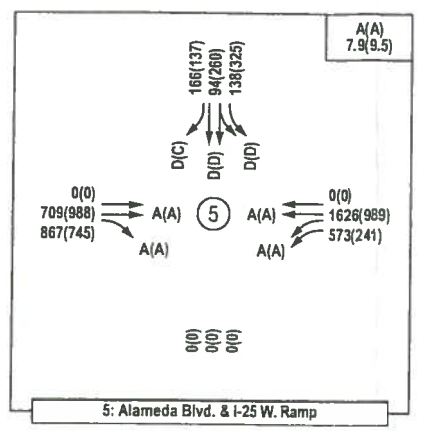
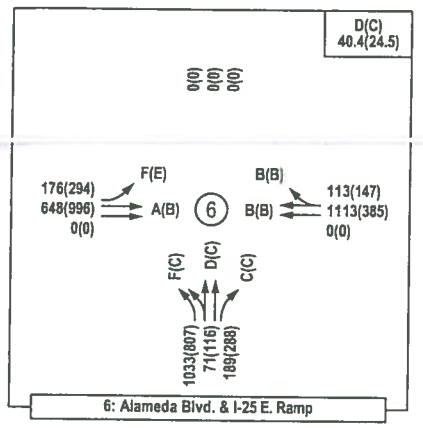
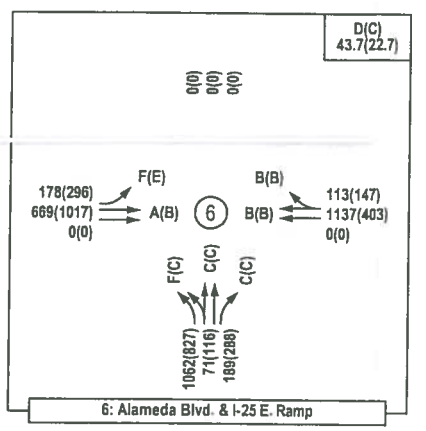
NO BUILD Analysis	BUILD Analysis	BUILD Analysis (Mitigated)
		NO RECOMMENDATION
		NO RECOMMENDATION
		NO RECOMMENDATION
		NO RECOMMENDATION

Mechenlier Building

4545 Alameda Blvd. NE

LOS / Volume Analysis Map



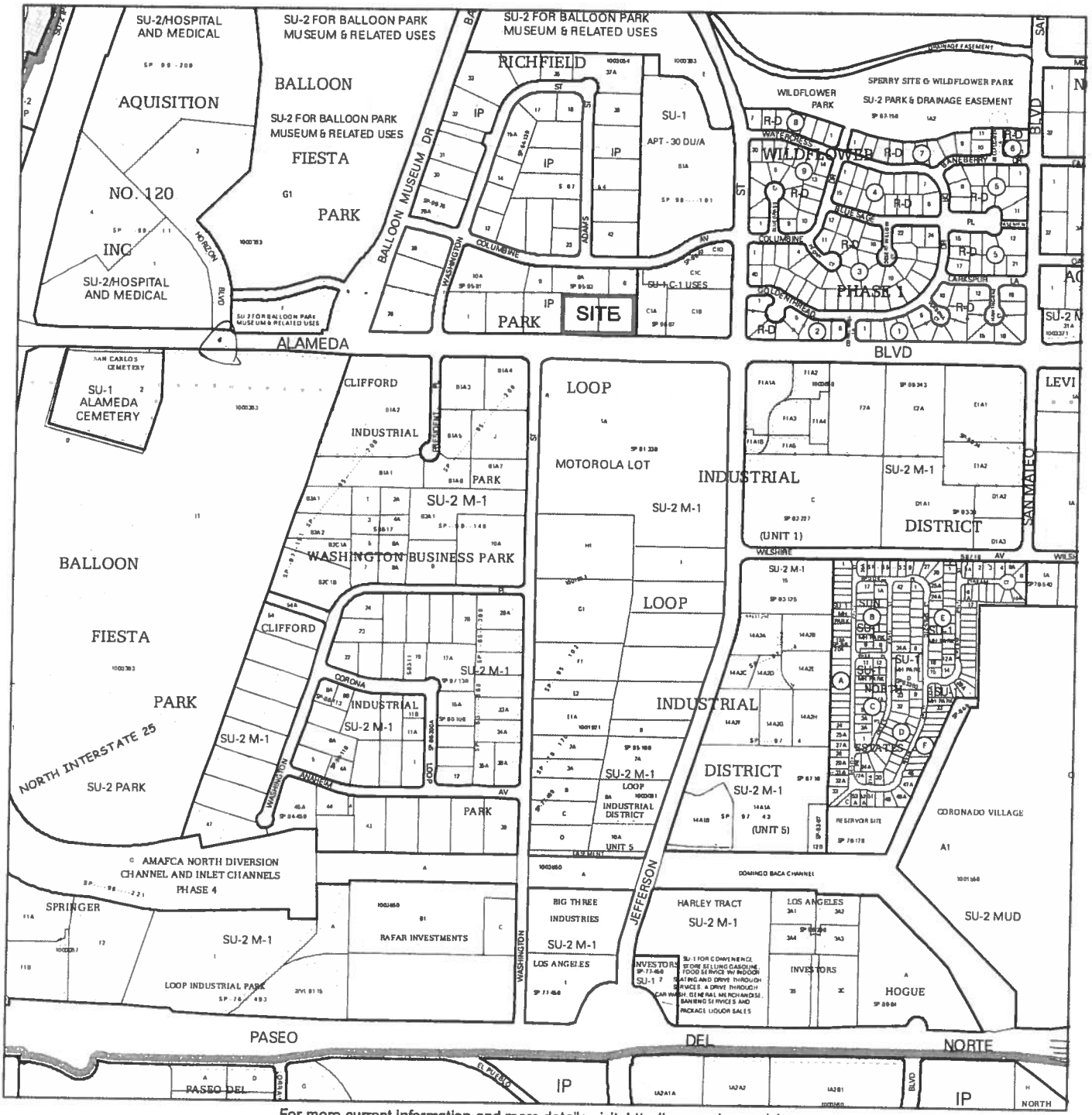
	NO BUILD Analysis	BUILD Analysis	BUILD Analysis (Mitigated)
5: Alameda Blvd. & I-25 W. Ramp			NO RECOMMENDATION
6: Alameda Blvd. & I-25 E. Ramp			NO RECOMMENDATION

Mechenbier Building

4545 Alameda Blvd. NE

LOS / Volume Analysis Map

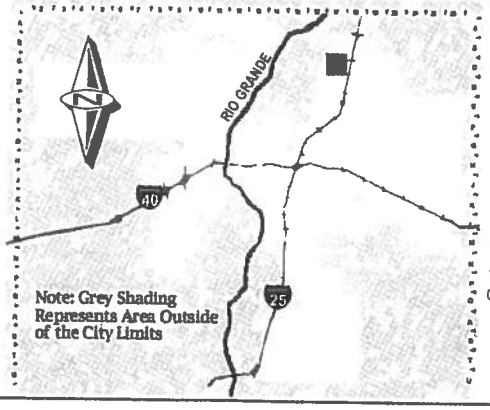
APPENDIX



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

Albuquerque Geographic Information System

Map amended through: 9/5/2006



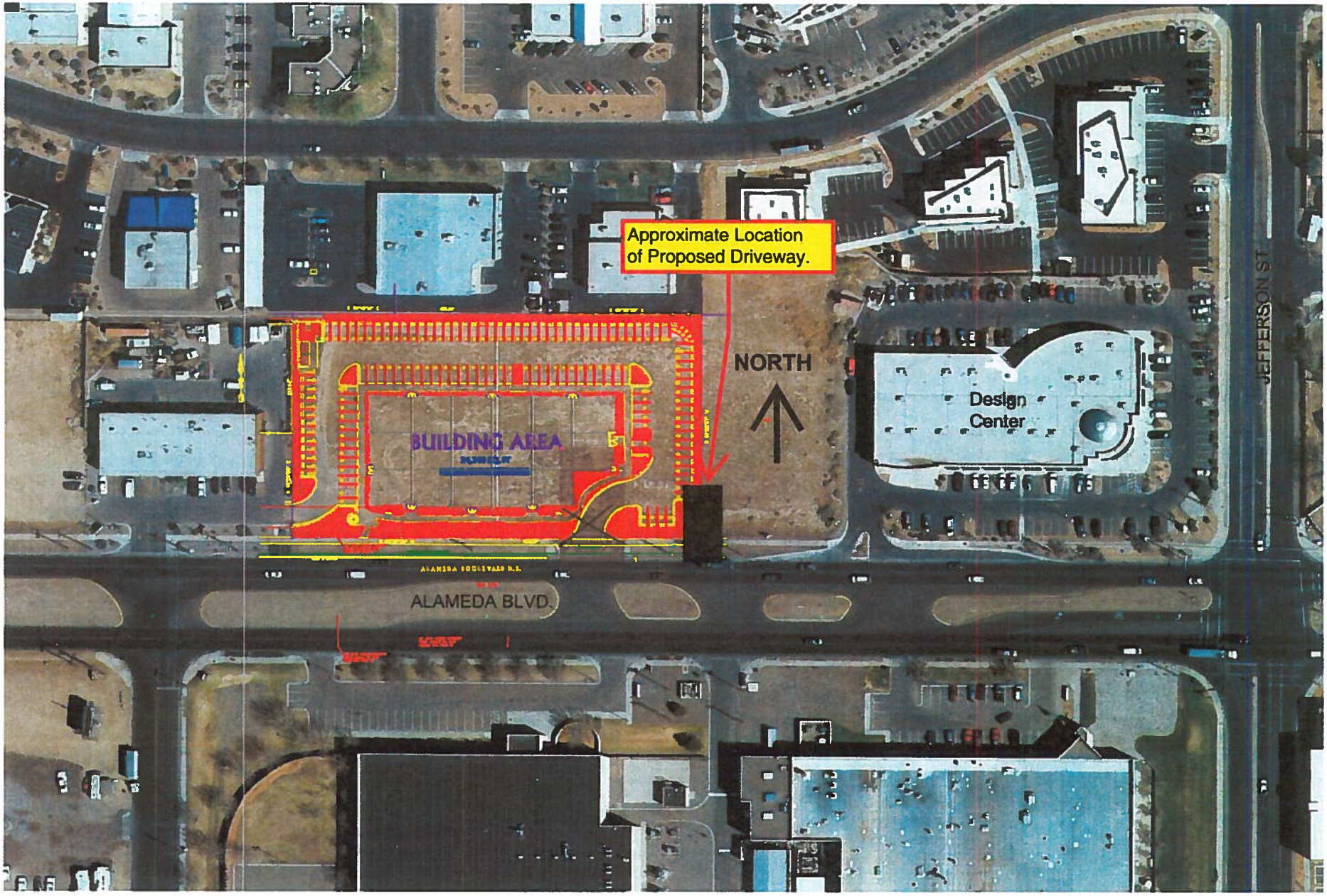
Zone Atlas Page:

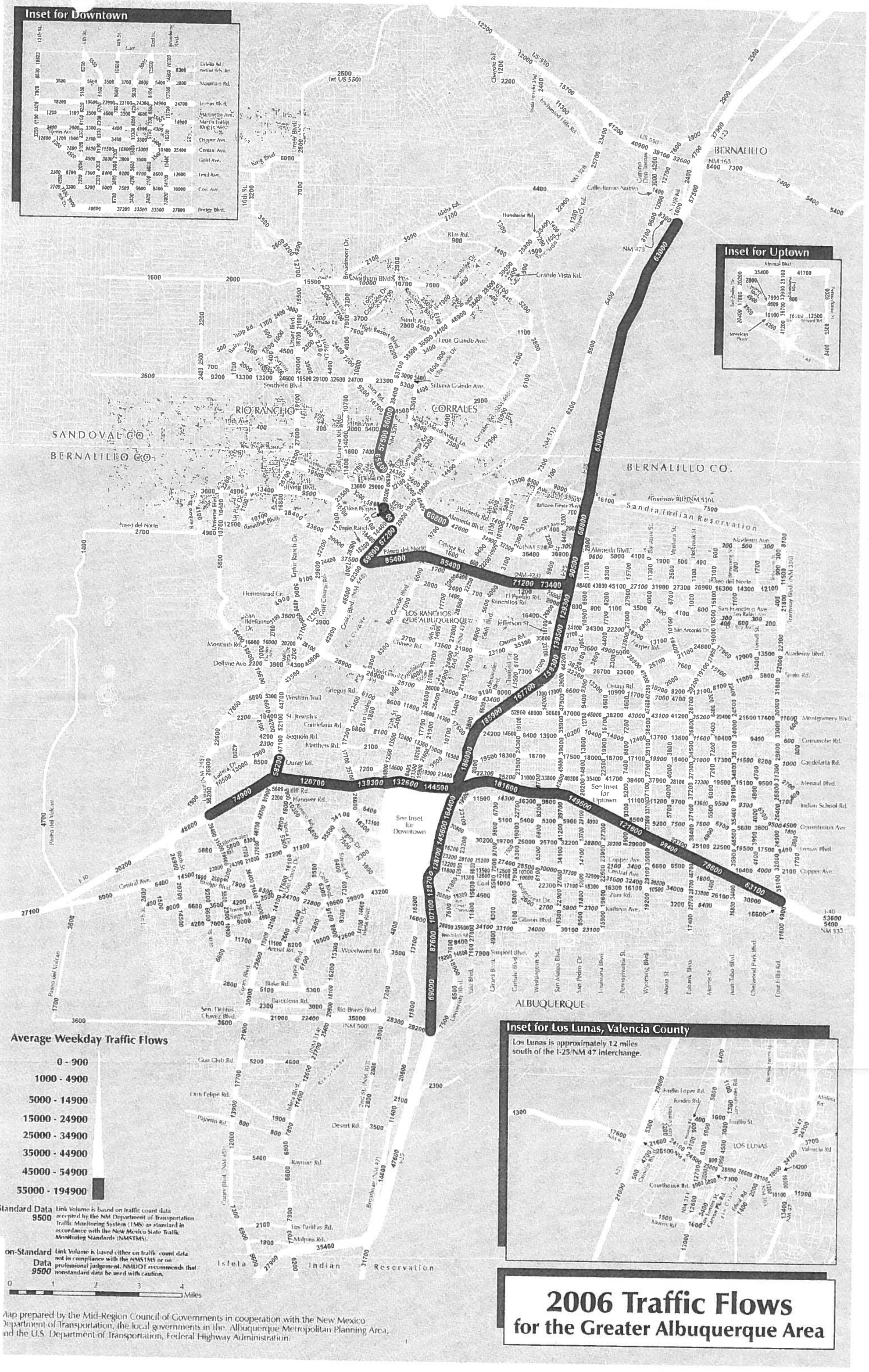
C-17-Z

Selected Symbols

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

0 750 1,500 Feet


Approximate Location
of Proposed Driveway.
NORTH
BUILDING AREA
Design
Center
JEFFERSON ST
ALAMEDA BLVD.


Inset for Downtown
Inset for Uptown
Inset for Los Lunas, Valencia County
Los Lunas is approximately 12 miles south of the I-25/NM 47 interchange.
RIO RANCHO
CORRALES
BERNALILLO
BERNALILLO CO.
SANDOVAL CO.
ALBUQUERQUE
Sandia Indian Reservation
Isleta Indian Reservation
LOS RANCHOS DE ALBUQUERQUE
LOS LUNAS
See Inset for Downtown
See Inset for Uptown
Average Weekday Traffic Flows
0 - 900
1000 - 4900
5000 - 14900
15000 - 24900
25000 - 34900
35000 - 44900
45000 - 54900
55000 - 194900
Standard Data 9500 Link Volume is based on traffic count data accepted by the NM Department of Transportation Traffic Monitoring System (TMS) as standard in accordance with the New Mexico State Traffic Monitoring Standards (NMSTMS).
on-Standard Data 9500 Link Volume is based either on traffic count data not in compliance with the NMSTMS or on professional judgement. NMDOT recommends that nonstandard data be used with caution.
0 1 2 3 4 Miles
Map prepared by the Mid-Region Council of Governments in cooperation with the New Mexico Department of Transportation, the local governments in the Albuquerque Metropolitan Planning Area, and the U.S. Department of Transportation, Federal Highway Administration.
2006 Traffic Flows
for the Greater Albuquerque Area

Mechenbier Building - Alameda

Trip Generation Data

	USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
	DESCRIPTION		*GROSS*	*ENTER*	*EXIT*	*ENTER*	*EXIT*
Summary Sheet		Units					
Shopping Center (820)		7.30	1,239	20	13	54	58
Specialty Retail Center (814)		7.30	350	67	85	17	22
General Office Building (710) - Less than 51,000 S.F.		9.74	143	18	2	4	19
	Total	24.34	1,732	105	100	75	99

Mechenbier Building - Alameda
Trip Generation Data

USE (ITE CODE)		24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		GROSS	ENTER	EXIT	ENTER	EXIT
	Units					
Shopping Center (820)	*7.30*	1,239	20	13	54	58
	1,000 S.F.					

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) = *0.6* Ln(X) + *2.29*
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) = *0.66* Ln(X) + *3.403*
48% Enter, *52%* Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 7th Edition

T = *42.78* (X) + *37.66*
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)

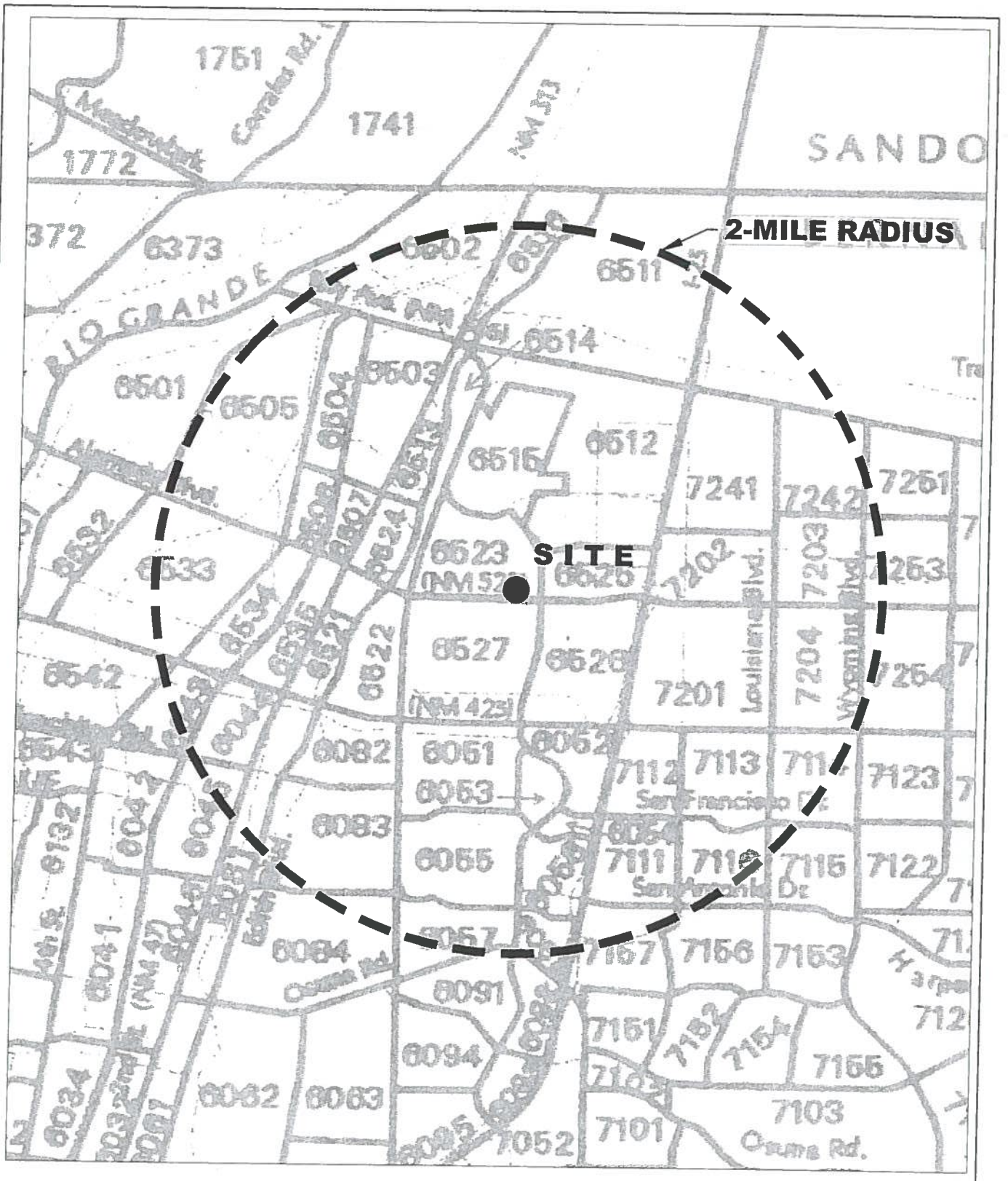
T = *4.9* (X) + *115.59*
44% Enter, *56%* Exit

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

T = *2.4* (X) + *21.48*
44% Enter, *56%* Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 7th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP

Mechenbier Building (4545 Alameda Blvd. NE)

Trip Distribution Table
Mechenbier Building (4545 Alameda Blvd. NE)

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

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(AW) Alameda Blvd. West			(2N) 2nd St. North			(AMN) Alameda Blvd. Mid. North			(HN) Horizon Blvd. North		
DASZ #	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2004	2030	2009														
Boundary Specified on DASZ Map																		
6502	60%	115	161	124	74	0.36%	0%	0.00%	0	40%	0.14%	30	60%	0.22%	44	0%	0.00%	0
6503	100%	870	853	867	867	4.22%	0%	0.00%	0	80%	3.37%	694	20%	0.84%	173	0%	0.00%	0
6504	100%	321	323	321	321	1.56%	50%	0.78%	161	50%	0.78%	161	0%	0.00%	0	0%	0.00%	0
6505	100%	1045	1017	1,040	1,040	5.06%	100%	5.06%	1,040	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	72	63	70	70	0.34%	0%	0.00%	0	20%	0.07%	14	80%	0.27%	56	0%	0.00%	0
6511	70%	35	45	37	26	0.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6512	100%	3	2	3	3	0.01%	0%	0.00%	0	0%	0.00%	0	10%	0.00%	0	0%	0.00%	0
6513	100%	170	168	170	170	0.83%	0%	0.00%	0	0%	0.00%	0	100%	0.83%	170	0%	0.00%	0
6514	100%	105	149	113	113	0.55%	0%	0.00%	0	0%	0.00%	0	100%	0.55%	113	0%	0.00%	0
6515	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0	0%	0.00%	0
6521	100%	187	175	185	185	0.90%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6522	100%	3	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	100%	703	834	728	728	3.54%	0%	0.00%	0	0%	0.00%	0	25%	0.89%	182	50%	1.77%	364
6524	100%	262	249	260	260	1.26%	0%	0.00%	0	0%	0.00%	0	100%	1.26%	260	0%	0.00%	0
6525	100%	379	350	373	373	1.81%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6526	100%	1308	1249	1,297	1,297	6.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6527	100%	8	0	6	6	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6533	50%	1212	1414	1,251	626	3.05%	100%	3.05%	626	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6534	100%	343	364	347	347	1.69%	50%	0.84%	174	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6535	100%	452	449	451	451	2.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6043	40%	1057	1029	1,052	421	2.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6044	100%	214	195	210	210	1.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6045	15%	692	721	698	105	0.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6051	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6052	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6054	100%	2	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6055	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6056	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6057	60%	6	0	5	3	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6058	70%	56	68	58	41	0.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6082	100%	113	104	111	111	0.54%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6083	100%	2263	2283	2,267	2,267	11.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6084	10%	2469	2547	2,484	248	1.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7111	100%	1159	1073	1,142	1,142	5.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7112	100%	5	6	5	5	0.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7113	100%	884	826	873	873	4.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7114	60%	1460	1373	1,443	866	4.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7115	5%	1513	1408	1,493	75	0.36%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7116	80%	1413	1496	1,429	1,143	5.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7201	100%	2058	1982	2,043	2,043	9.94%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7202	100%	104	434	167	167	0.81%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7203	100%	1423	1612	1,459	1,459	7.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7204	100%	1066	1513	1,152	1,152	5.60%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7241	100%	0	373	72	72	0.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7242	90%	102	991	273	246	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7251	5%	204	471	255	13	0.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7253	10%	1096	1477	1,169	117	0.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7254	10%	1730	1604	1,706	171	0.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6081	50%	343	443	362	181	0.88%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6516	60%	129	213	145	87	0.42%	0%	0.00%	0	0%	0.00%	0	50%	0.21%	44	0%	0.00%	0
7157	50%	735	831	753	377	1.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7231	5%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
				30,473	20,556	100.00%			2,000			898			1,043			364
									9.73%			4.37%			5.07%			1.77%

Trip Distribution Table
Mechenbier Building (4545 Alameda Blvd. NE)

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

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(JN) Jefferson St. North			(SN) San Mateo Blvd. North			(IW) I-25 W. Frntg. Rd.			(IE) I-25 E. Frntg. Rd.		
DASZ #	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	**Population in Study**	**Percent Population**	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2004	**2030**	**2009**														
Boundary Specified on DASZ Map																		
6502	60%	115	161	124	74	**0.36%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6503	100%	870	853	867	867	**4.22%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	100%	321	323	321	321	**1.56%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6505	100%	1045	1017	1,040	1,040	**5.06%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	72	63	70	70	**0.34%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6511	70%	35	45	37	26	**0.13%**	0%	0.00%	0	0%	0.00%	0	100%	0.13%	26	0%	0.00%	0
6512	100%	3	2	3	3	**0.01%**	40%	0.01%	1	0%	0.00%	0	50%	0.01%	2	0%	0.00%	0
6513	100%	170	168	170	170	**0.83%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6514	100%	105	149	113	113	**0.55%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6515	100%	0	0	0	0	**0.00%**	60%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6521	100%	187	175	185	185	**0.90%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6522	100%	3	0	2	2	**0.01%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	100%	703	834	728	728	**3.54%**	25%	0.89%	182	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6524	100%	262	249	260	260	**1.26%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6525	100%	379	350	373	373	**1.81%**	60%	1.09%	224	20%	0.36%	75	20%	0.36%	75	0%	0.00%	0
6526	100%	1308	1249	1,297	1,297	**6.31%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	1.26%	259
6527	100%	8	0	6	6	**0.03%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6533	50%	1212	1414	1,251	626	**3.05%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6534	100%	343	364	347	347	**1.69%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6535	100%	452	449	451	451	**2.19%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6043	40%	1057	1029	1,052	421	**2.05%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6044	100%	214	195	210	210	**1.02%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6045	15%	692	721	698	105	**0.51%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6051	100%	0	0	0	0	**0.00%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6052	100%	0	0	0	0	**0.00%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	100%	0	0	0	0	**0.00%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	70%	0.00%	0
6054	100%	2	0	2	2	**0.01%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	70%	0.00%	0
6055	100%	0	0	0	0	**0.00%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.01%	2
6056	100%	0	0	0	0	**0.00%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6057	60%	6	0	5	3	**0.01%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0
6058	70%	56	68	58	41	**0.20%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6082	100%	113	104	111	111	**0.54%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.10%	21
6083	100%	2263	2283	2,267	2,267	**11.03%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6084	10%	2469	2547	2,484	248	**1.21%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.60%	124
7111	100%	1159	1073	1,142	1,142	**5.56%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	5.56%	1,142
7112	100%	5	6	5	5	**0.02%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.02%	5
7113	100%	884	826	873	873	**4.25%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	4.25%	873
7114	60%	1460	1373	1,443	866	**4.21%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	4.21%	866
7115	5%	1513	1408	1,493	75	**0.36%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.36%	75
7116	80%	1413	1496	1,429	1,143	**5.56%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	70%	3.89%	800
7201	100%	2058	1982	2,043	2,043	**9.94%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	4.97%	1,022
7202	100%	104	434	167	167	**0.81%**	0%	0.00%	0	0%	0.00%	0	10%	0.08%	17	0%	0.00%	0
7203	100%	1423	1612	1,459	1,459	**7.10%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7204	100%	1066	1513	1,152	1,152	**5.60%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7241	100%	0	373	72	72	**0.35%**	0%	0.00%	0	0%	0.00%	0	100%	0.35%	72	0%	0.00%	0
7242	90%	102	991	273	246	**1.20%**	0%	0.00%	0	0%	0.00%	0	100%	1.20%	246	0%	0.00%	0
7251	5%	204	471	255	13	**0.06%**	0%	0.00%	0	0%	0.00%	0	50%	0.03%	7	0%	0.00%	0
7253	10%	1096	1477	1,169	117	**0.57%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7254	10%	1730	1604	1,706	171	**0.83%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	30%	0.25%	51
6081	50%	343	443	362	181	**0.88%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6516	60%	129	213	145	87	**0.42%**	0%	0.00%	0	0%	0.00%	0	50%	0.21%	44	0%	0.00%	0
7157	50%	735	831	753	377	**1.83%**	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	1.83%	377
7231	5%	0	0	0	0	**0.00%**	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
				30,473	20,556	100.00%			**407**			**75**			**487**			**5,617**
									1.98%			0.36%			2.37%			27.32%

Trip Distribution Table
Mechenbier Building (4545 Alameda Blvd. NE)

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

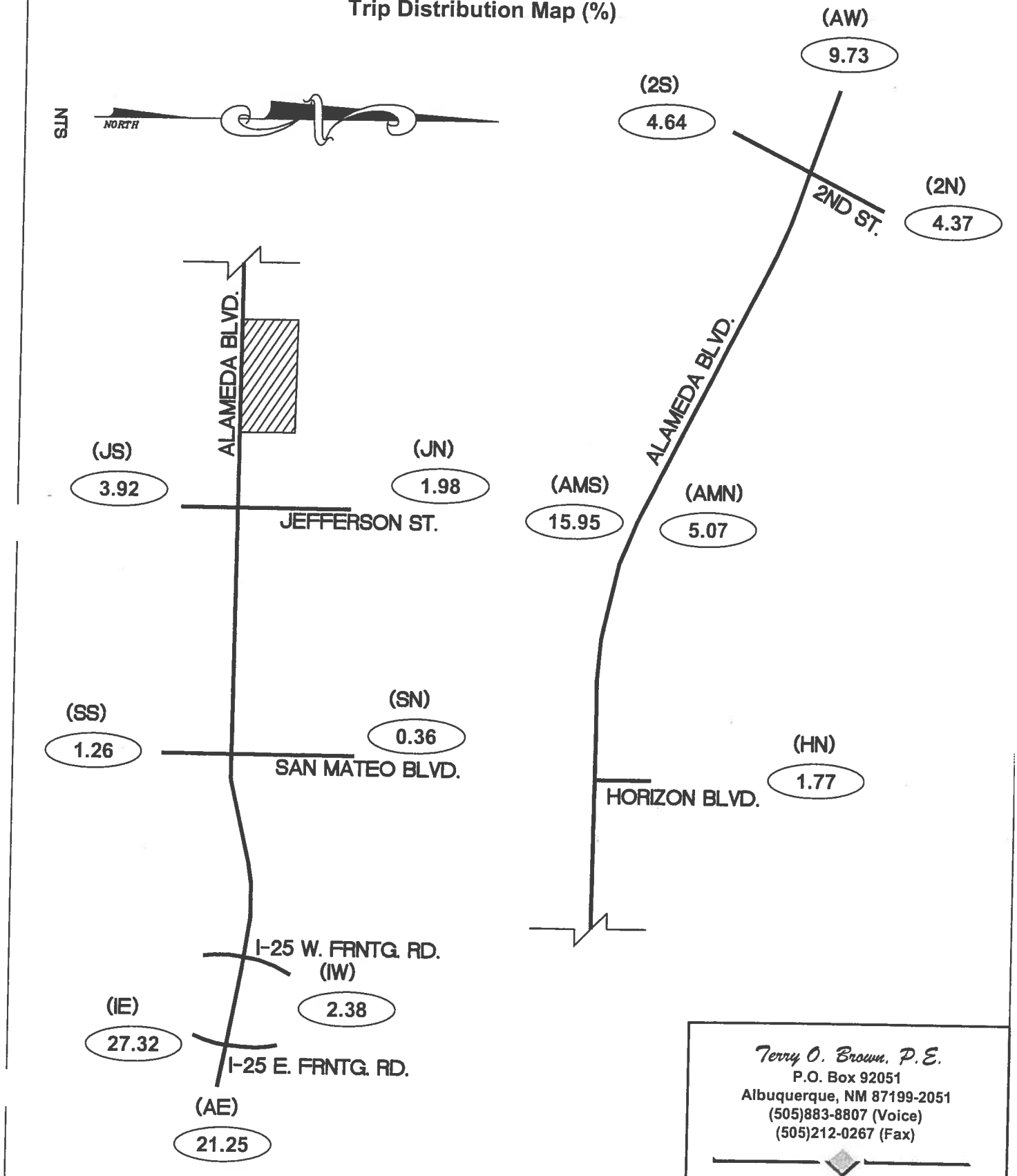
2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(AE) Alameda Blvd. East			(SS) San Mateo Blvd. South			(JS) Jefferson St. South			(AMS) Alameda Blvd. Mid. South			(2S) 2nd St. South		
DASZ #	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2004	2030	2009																	
Boundary Specified on DASZ Map																					
6502	60%	115	161	124	74	0.36%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6503	100%	870	853	867	867	4.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	100%	321	323	321	321	1.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6505	100%	1045	1017	1,040	1,040	5.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	72	63	70	70	0.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6511	70%	35	45	37	26	0.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6512	100%	3	2	3	3	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6513	100%	170	168	170	170	0.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6514	100%	105	149	113	113	0.55%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6515	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6521	100%	187	175	185	185	0.90%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.90%	185	0%	0.00%	0
6522	100%	3	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.01%	2	0%	0.00%	0
6523	100%	703	834	728	728	3.54%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6524	100%	262	249	260	260	1.26%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6525	100%	379	350	373	373	1.81%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6526	100%	1308	1249	1,297	1,297	6.31%	0%	0.00%	0	20%	1.26%	259	60%	3.79%	778	0%	0.00%	0	0%	0.00%	0
6527	100%	8	0	6	6	0.03%	0%	0.00%	0	0%	0.00%	0	80%	0.02%	5	20%	0.01%	1	0%	0.00%	0
6533	50%	1212	1414	1,251	626	3.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6534	100%	343	364	347	347	1.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.84%	174
6535	100%	452	449	451	451	2.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	90%	1.97%	406	10%	0.22%	45
6043	40%	1057	1029	1,052	421	2.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	2.05%	421
6044	100%	214	195	210	210	1.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	1.02%	210
6045	15%	692	721	698	105	0.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.51%	105
6051	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	50%	0.00%	0	50%	0.00%	0	0%	0.00%	0
6052	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	30%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	30%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6054	100%	2	0	2	2	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6055	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	50%	0.00%	0	50%	0.00%	0	0%	0.00%	0
6056	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6057	60%	6	0	5	3	0.01%	0%	0.00%	0	0%	0.00%	0	50%	0.01%	2	50%	0.01%	2	0%	0.00%	0
6058	70%	56	68	58	41	0.20%	0%	0.00%	0	0%	0.00%	0	50%	0.10%	21	0%	0.00%	0	0%	0.00%	0
6082	100%	113	104	111	111	0.54%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.54%	111	0%	0.00%	0
6083	100%	2263	2283	2,267	2,267	11.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	11.03%	2,267	0%	0.00%	0
6084	10%	2469	2547	2,484	248	1.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.60%	124	0%	0.00%	0
7111	100%	1159	1073	1,142	1,142	5.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7112	100%	5	6	5	5	0.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7113	100%	884	826	873	873	4.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7114	60%	1460	1373	1,443	866	4.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7115	5%	1513	1408	1,493	75	0.36%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7116	80%	1413	1496	1,429	1,143	5.56%	30%	1.67%	343	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7201	100%	2058	1982	2,043	2,043	9.94%	50%	4.97%	1,022	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7202	100%	104	434	167	167	0.81%	90%	0.73%	150	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7203	100%	1423	1612	1,459	1,459	7.10%	100%	7.10%	1,459	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7204	100%	1066	1513	1,152	1,152	5.60%	100%	5.60%	1,152	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7241	100%	0	373	72	72	0.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7242	90%	102	991	273	246	1.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7251	5%	204	471	255	13	0.06%	50%	0.03%	7	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7253	10%	1096	1477	1,169	117	0.57%	100%	0.57%	117	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7254	10%	1730	1604	1,706	171	0.83%	70%	0.58%	120	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6081	50%	343	443	362	181	0.88%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.88%	181	0%	0.00%	0
6516	60%	129	213	145	87	0.42%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7157	50%	735	831	753	377	1.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7231	5%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
				30,473	20,556	100.00%			**4,369**			**259**			**805**			**3,279**			**955**
									21.25%			1.26%			3.92%			15.95%			4.64%

Mechenbier Building

(4545 Alameda Blvd. NE)

Trip Distribution Map (%)

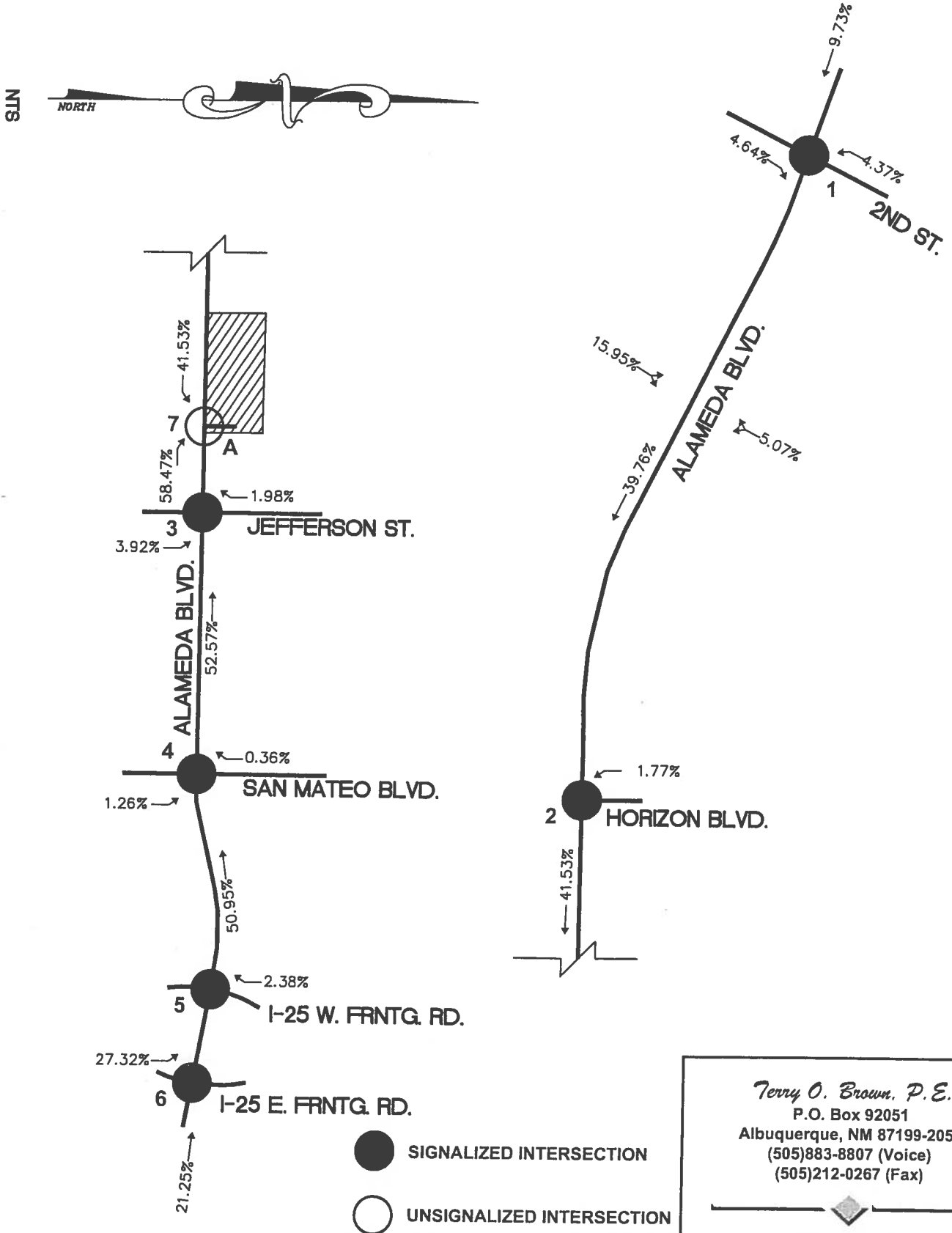


Terry O. Brown, P.E.
P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)

Mechenbier Building

(4545 Alameda Blvd. NE)

Trip Assignments (% Entering)

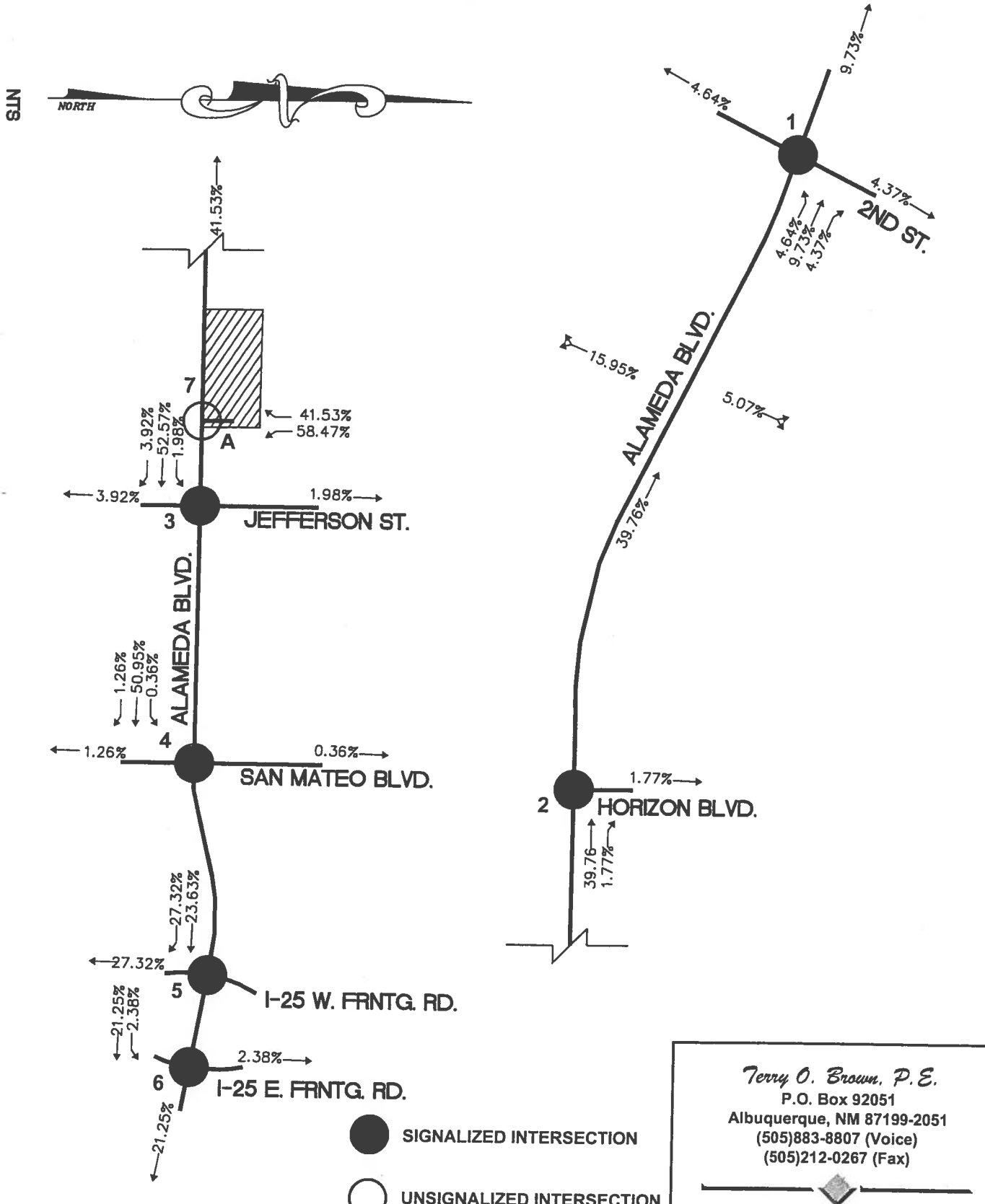


Terry O. Brown, P.E.
P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)

Mechenbier Building

(4545 Alameda Blvd. NE)

Trip Assignments (% Exiting)

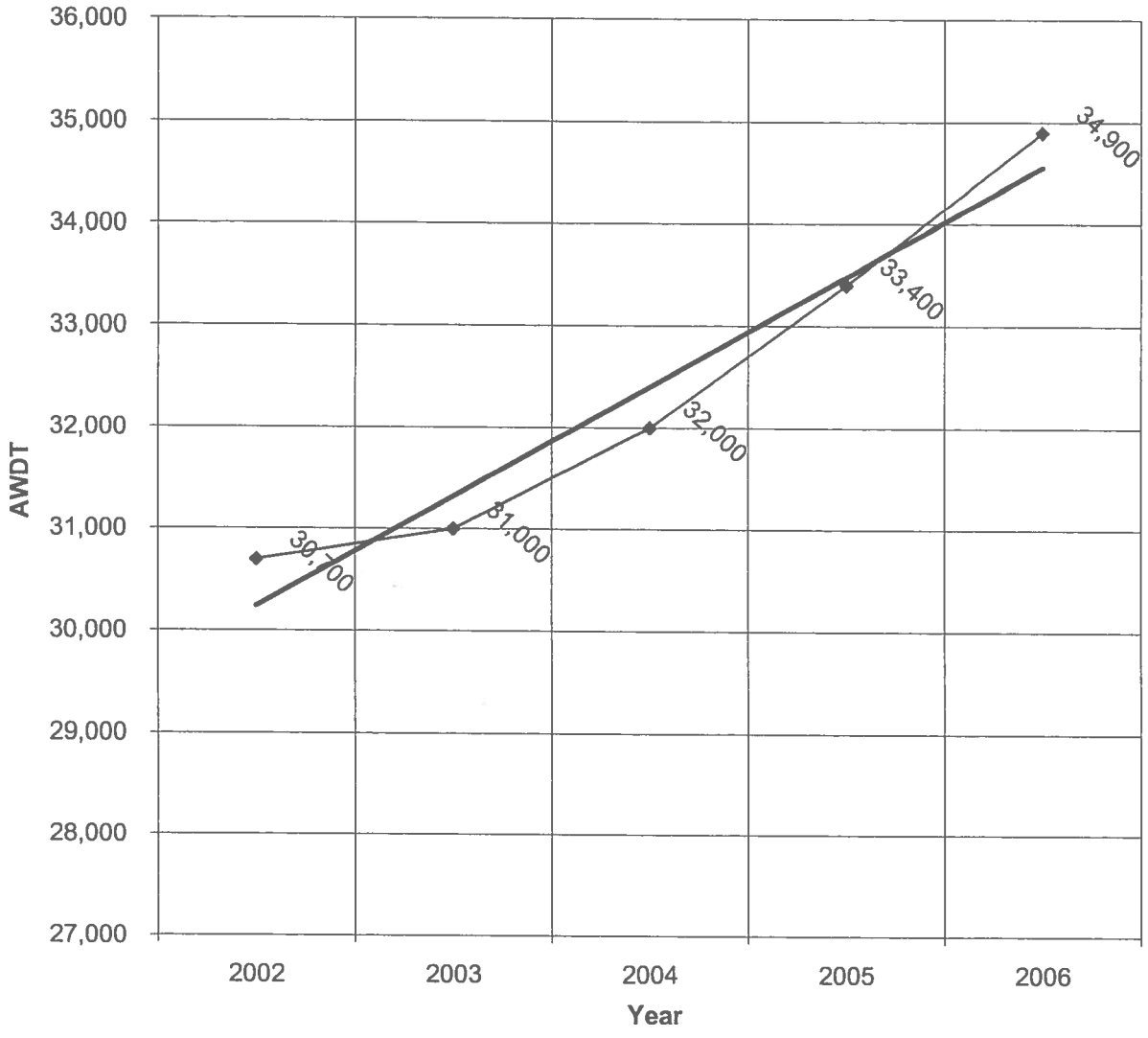


Terry O. Brown, P.E.
P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)

Traffic Flow Table for Mechenbier Building (4545 Alameda Blvd. NE)

	2002	2003	2004	2005	2006
Alameda Blvd. W. of 2nd St.	30,700	31,000	32,000	33,400	34,900
Alameda Blvd. E. of 2nd St.	30,200	24,200	29,600	30,900	32,300
2nd St. N. of Alameda Blvd.	10,300	8,900	9,200	9,600	10,100
2nd St. S. of Alameda Blvd.	16,600	14,600	15,100	15,800	14,900
Alameda Blvd. W. of Jefferson St.	26,600	27,000	33,300	34,800	36,400
Alameda Blvd. E. of Jefferson St.	29,700	27,700	30,700	33,500	36,900
Jefferson St. N. of Alameda Blvd.	-	2,800	2,900	3,000	2,200
Jefferson St. S. of Alameda Blvd.	13,200	13,400	9,700	9,400	9,800
Alameda Blvd. W. of I-25	29,700	27,700	30,700	33,500	36,900
Alameda Blvd. E. of I-25	9,400	9,500	9,400	9,500	9,600
I-25 N. of Alameda Blvd.	51,400	60,600	64,900	64,800	68,800
I-25 S. of Alameda Blvd.	76,600	82,900	86,900	87,200	90,500

Growth Chart for Alameda Blvd. West of 2nd St.



Annual Increase in Volume - 1,080 vehicles/day

Rate of Increase - 1,080 / 34,900

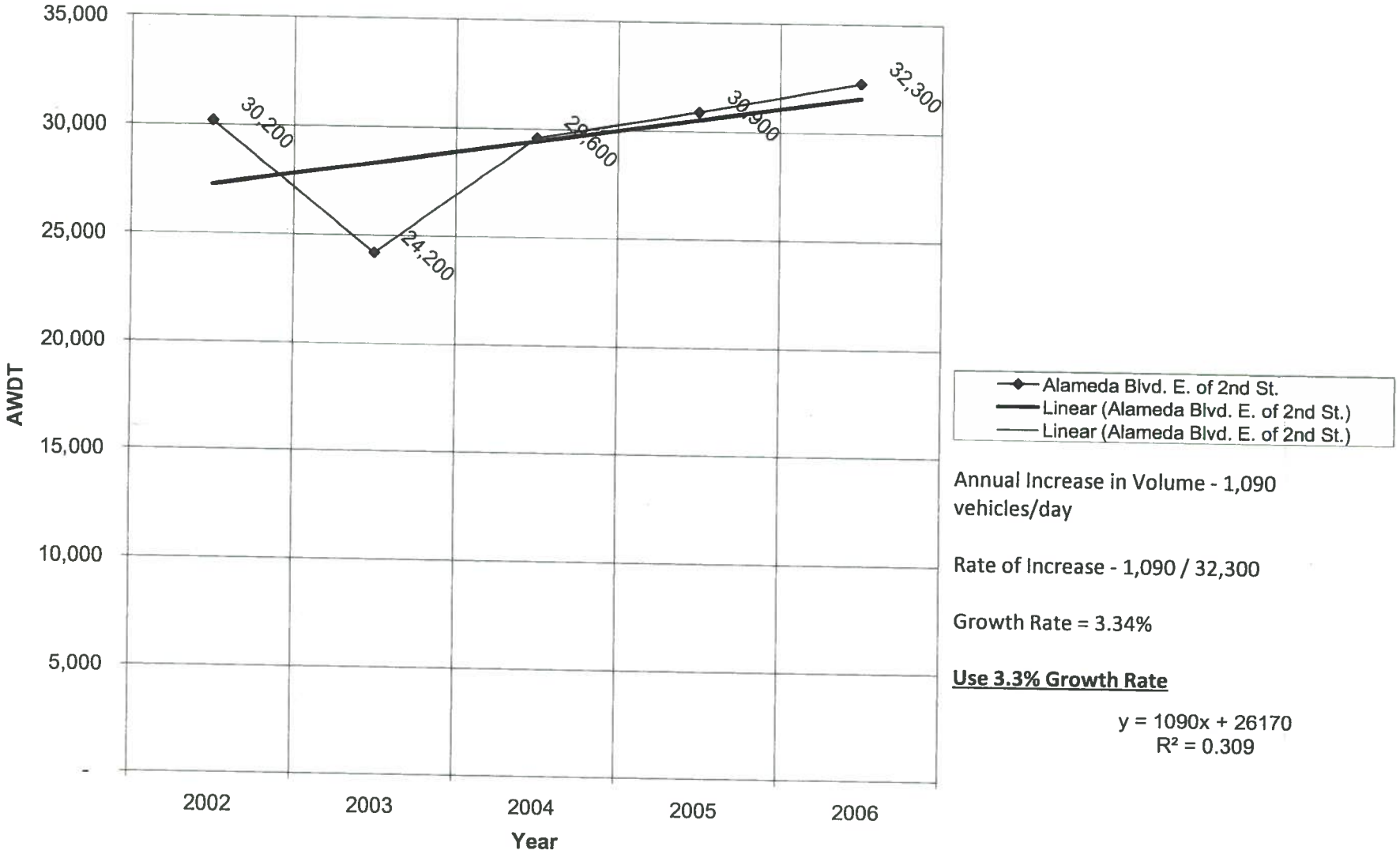
Growth Rate = 3.09%

Use 3.1% Growth Rate

$y = 1080x + 29160$

$R^2 = 0.951$

Growth Chart for Alameda East of 2nd St.



Annual Increase in Volume - 1,090 vehicles/day

Rate of Increase - 1,090 / 32,300

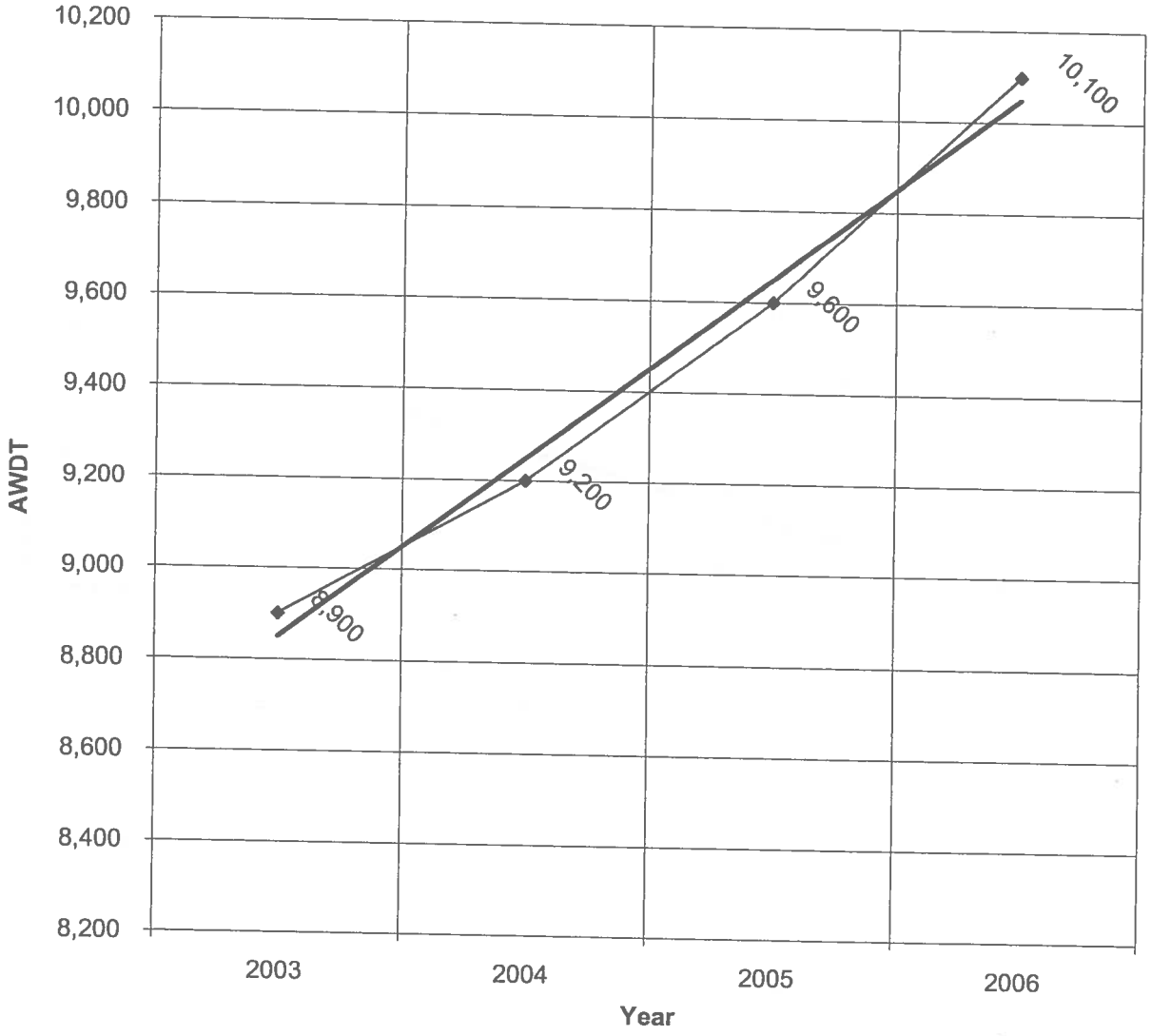
Growth Rate = 3.34%

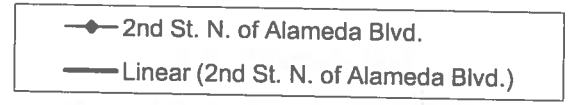
Use 3.3% Growth Rate

$y = 1090x + 26170$

$R^2 = 0.309$

Growth Chart for 2nd St. North of Alameda Blvd.





Annual Increase in Volume - 400 vehicles/day

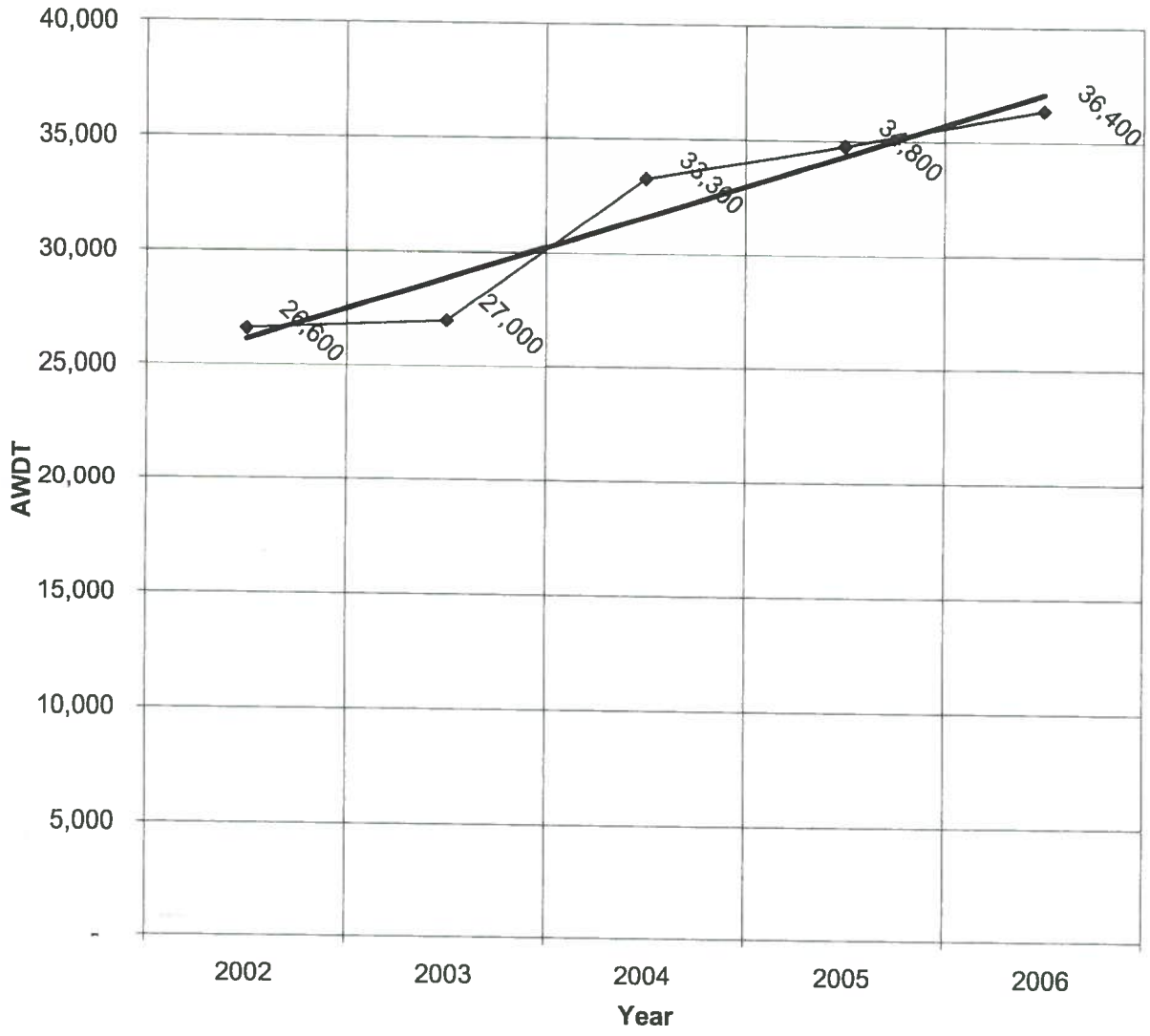
Rate of Increase - 400 / 10,100

Growth Rate = 3.96%

Use 4.0% Growth Rate

$y = 400x + 8450$
$R^2 = 0.987$

Growth Chart for Alameda West of Jefferson St.



Annual Increase in Volume - 2,740 vehicles/day

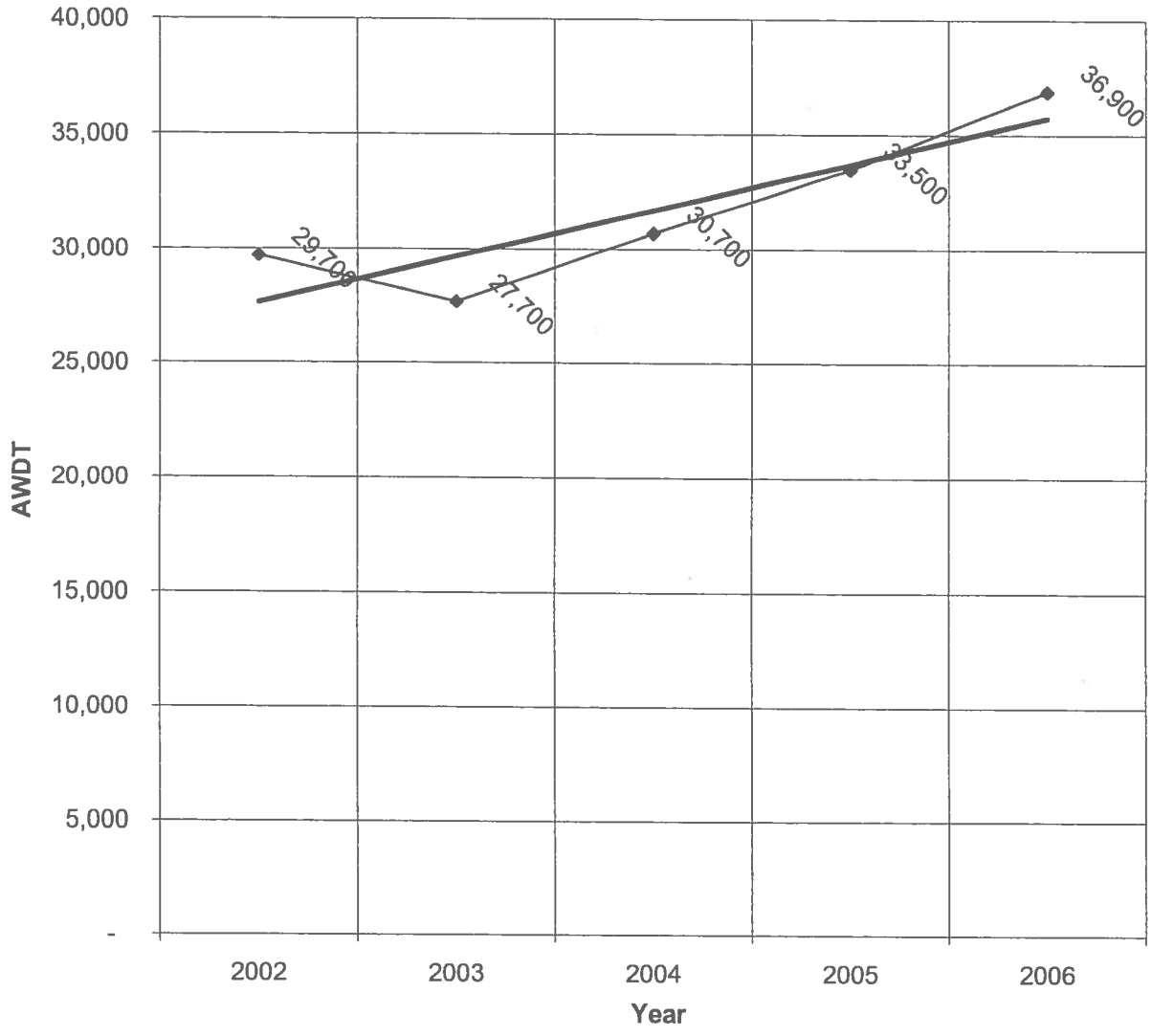
Rate of Increase - 2,740 / 36,400

Growth Rate = 7.53%

Use 7.5% Growth Rate

$y = 2740x + 23400$
$R^2 = 0.911$

Growth Chart for Alameda Blvd. East of Jefferson St.



Annual Increase in Volume - 2,020 vehicles/day

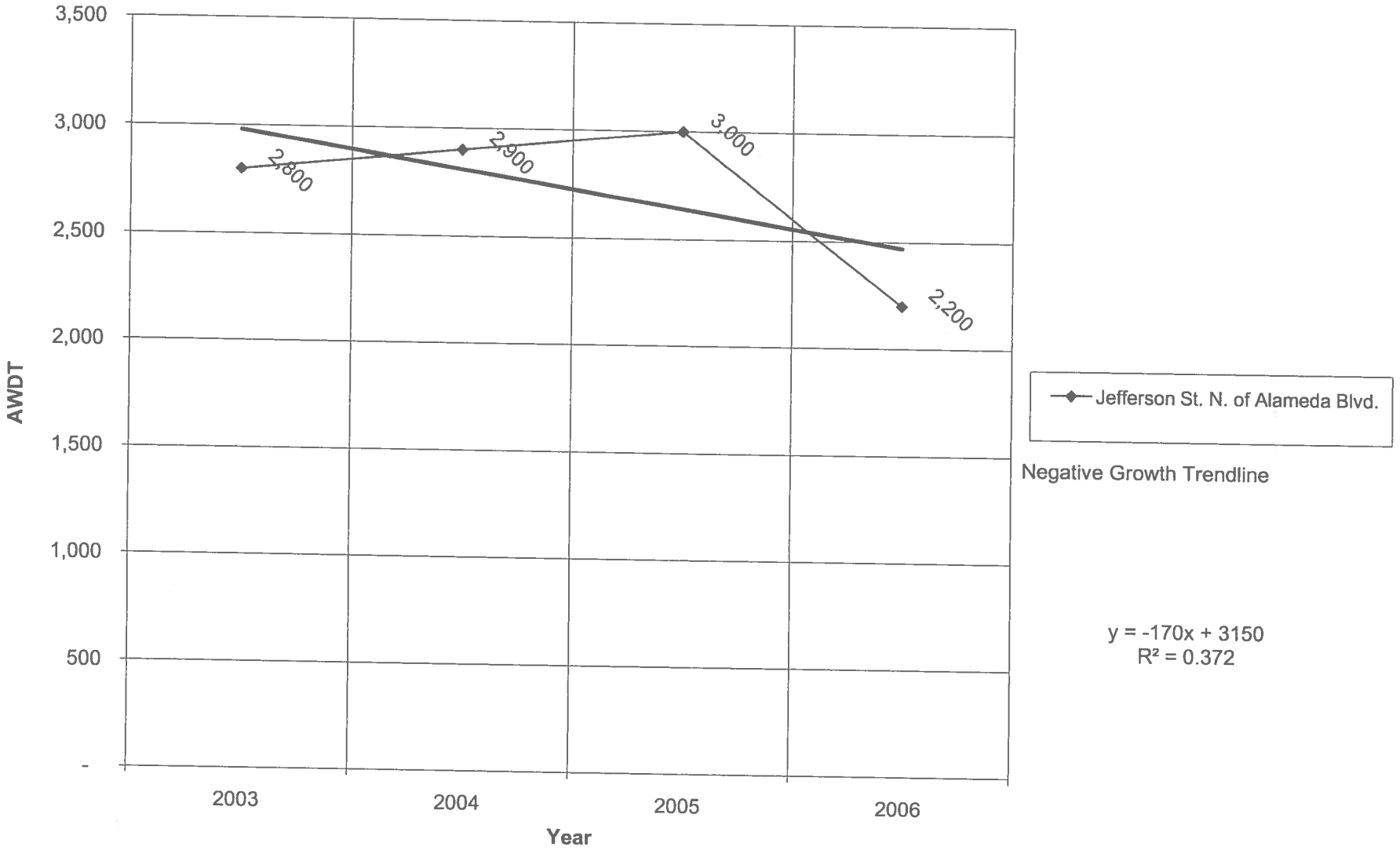
Rate of Increase - 2,020 / 36,900

Growth Rate = 5.47%

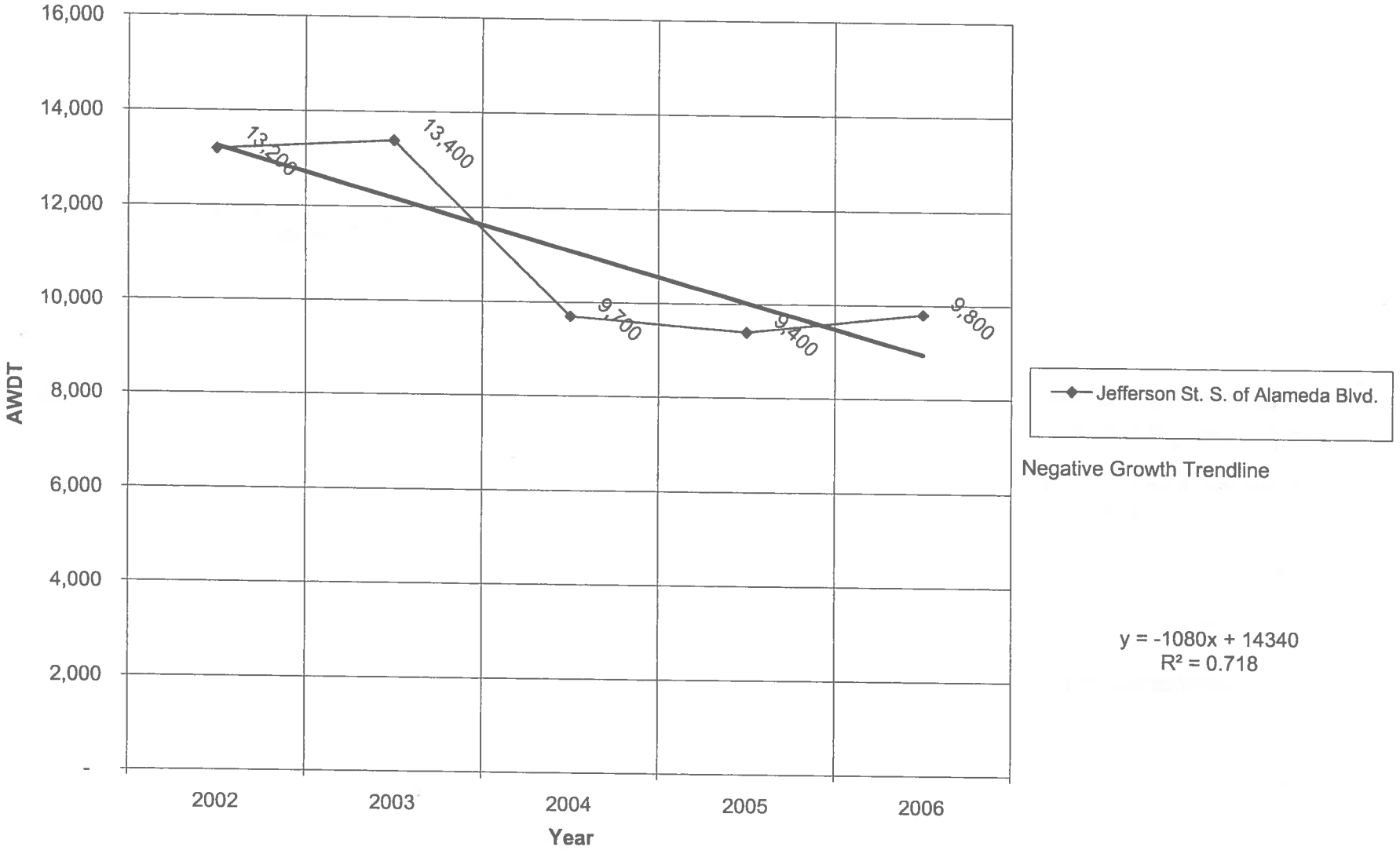
Use 5.5% Growth Rate

$y = 2020x + 25640$
$R^2 = 0.795$

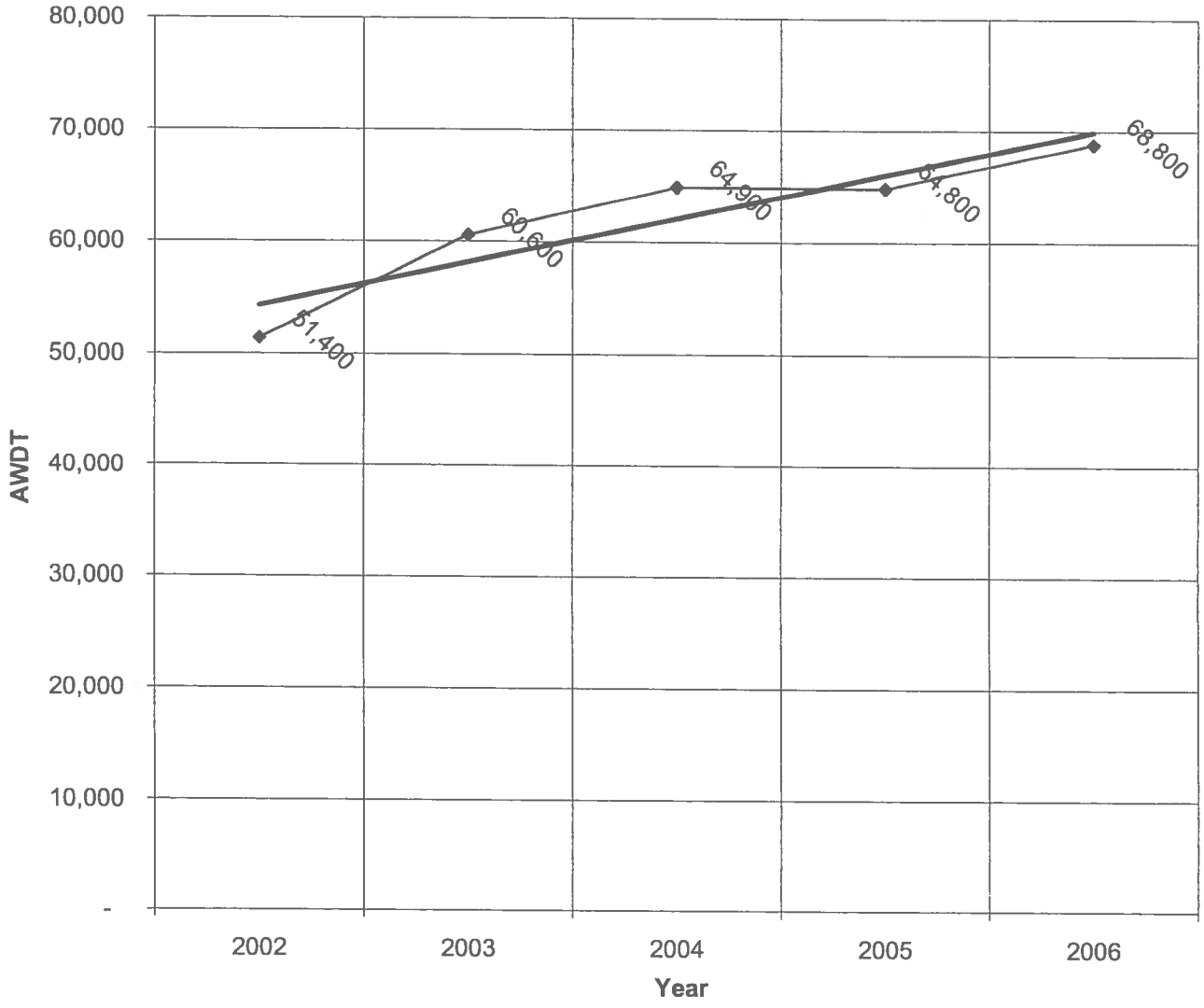
Growth Chart for Jefferson St. North of Alameda Blvd.



Growth Chart for Jefferson St. South of Alameda Blvd.



Growth Chart for I-25 North of Alameda Blvd.



Annual Increase in Volume - 3,900 vehicles/day

Rate of Increase - 3,900 / 68,800

Growth Rate = 5.67%

Use 5.7% Growth Rate

$y = 3900x + 50400$
$R^2 = 0.860$

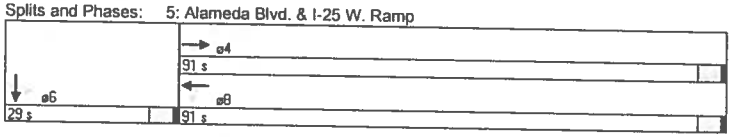
Timings
5: Alameda Blvd. & I-25 W. Ramp

Terry O. Brown, P.E.
10/8/2007

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	686	840	573	1573	138	94	164
Turn Type		Perm	Perm		Perm		Perm
Protected Phases	4			8		6	
Permitted Phases		4	8		6		6
Detector Phases	4	4	8	8	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	91.0	91.0	91.0	91.0	29.0	29.0	29.0
Total Split (%)	75.8%	75.8%	75.8%	75.8%	24.2%	24.2%	24.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	88.9	88.9	88.9	88.9	23.1	23.1	23.1
Actuated g/C Ratio	0.74	0.74	0.74	0.74	0.19	0.19	0.19
v/c Ratio	0.28	0.69	0.67	0.65	0.26	0.27	0.52
Control Delay	6.1	6.5	10.6	7.8	45.7	44.0	39.4
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	6.1	6.5	10.6	8.5	45.7	44.0	39.4
LOS	A	A	B	A	D	D	D
Approach Delay	6.3			9.1		42.4	
Approach LOS	A			A		D	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 116 (97%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 11.3 — Intersection LOS: B
Intersection Capacity Utilization 117.7% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 5: Alameda Blvd. & I-25 W. Ramp



HCM Signalized Intersection Capacity Analysis
5: Alameda Blvd. & I-25 W. Ramp

Terry O. Brown, P.E.
10/8/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3323	1583
Flt Permitted		1.00	1.00	0.35	1.00					0.95	0.98	1.00
Satd. Flow (perm)		3539	1583	1261	3539					1610	3323	1583
Volume (vph)	0	686	840	573	1573	0	0	0	0	138	94	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	746	913	623	1710	0	0	0	0	150	102	178
RTOR Reduction (vph)	0	0	151	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	746	762	623	1710	0	0	0	0	81	171	141
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		87.9	87.9	87.9	87.9					22.1	22.1	22.1
Effective Green, g (s)		88.9	88.9	88.9	88.9					23.1	23.1	23.1
Actuated g/C Ratio		0.74	0.74	0.74	0.74					0.19	0.19	0.19
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2622	1173	934	2622					310	640	305
v/s Ratio Prot		0.21			0.48							
v/s Ratio Perm			0.48	c0.49						0.05	0.05	c0.09
v/c Ratio		0.28	0.65	0.67	0.65					0.26	0.27	0.46
Uniform Delay, d1		5.1	7.8	8.0	7.8					41.2	41.2	42.9
Progression Factor		1.15	1.79	0.95	0.87					1.00	1.00	1.00
Incremental Delay, d2		0.0	1.0	1.2	0.4					2.0	1.0	5.0
Delay (s)		5.9	14.9	8.8	7.2					43.2	42.3	47.9
Level of Service		A	B	A	A					D	D	D
Approach Delay (s)		10.9			7.6			0.0			44.8	
Approach LOS		B			A			A			D	

Intersection Summary

HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	117.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

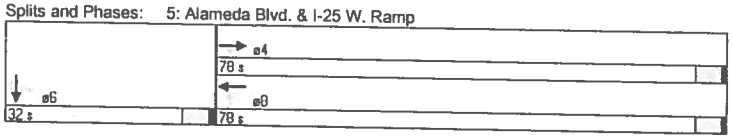
Timings
5: Alameda Blvd. & I-25 W. Ramp

Terry O. Brown, P.E.
10/8/2007

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	965	718	241	951	325	260	135
Turn Type		Perm	Perm		Perm		Perm
Protected Phases	4			8		6	
Permitted Phases		4	8		6		6
Detector Phases	4	4	8	8	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	78.0	78.0	78.0	78.0	32.0	32.0	32.0
Total Split (%)	70.9%	70.9%	70.9%	70.9%	29.1%	29.1%	29.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	76.0	76.0	76.0	76.0	26.0	26.0	26.0
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.24	0.24	0.24
v/c Ratio	0 43	0.66	0.46	0.42	0.54	0.55	0.30
Control Delay	4.0	3.0	5.5	3.7	43.9	40.7	7.7
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	4.0	3.0	5.5	3.9	43.9	40.7	7.7
LOS	A	A	A	A	D	D	A
Approach Delay	3.6			4.2		35.4	
Approach LOS	A			A		D	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 84 (76%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.1 — Intersection LOS: B
Intersection Capacity Utilization 72.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: Alameda Blvd. & I-25 W. Ramp



HCM Signalized Intersection Capacity Analysis
5: Alameda Blvd. & I-25 W. Ramp

Terry O. Brown, P.E.
10/8/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3333	1583
Flt Permitted		1.00	1.00	0.23	1.00					0.95	0.98	1.00
Satd. Flow (perm)		3539	1583	843	3539					1610	3333	1583
Volume (vph)	0	965	718	241	951	0	0	0	0	325	260	135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1049	780	262	1034	0	0	0	0	353	283	147
RTOR Reduction (vph)	0	0	79	0	0	0	0	0	0	0	0	110
Lane Group Flow (vph)	0	1049	701	262	1034	0	0	0	0	205	431	37
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		75.0	75.0	75.0	75.0					25.0	25.0	25.0
Effective Green, g (s)		76.0	76.0	76.0	76.0					26.0	26.0	26.0
Actuated g/C Ratio		0.69	0.69	0.69	0.69					0.24	0.24	0.24
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2445	1094	582	2445					381	788	374
v/s Ratio Prot		0.30			0.29							
v/s Ratio Perm			c0.44	0.31						0.13	0.13	0.02
v/c Ratio		0.43	0.64	0.45	0.42					0.54	0.55	0.10
Uniform Delay, d1		7.5	9.4	7.6	7.4					36.7	36.8	32.8
Progression Factor		0.50	0.27	0.38	0.42					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.6	0.5	0.1					5.4	2.7	0.5
Delay (s)		3.8	3.1	3.4	3.2					42.1	39.6	33.4
Level of Service		A	A	A	A					D	D	C
Approach Delay (s)		3.5			3.3			0.0			39.1	
Approach LOS		A			A			A			D	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
5: Alameda Blvd. & I-25 W. Ramp

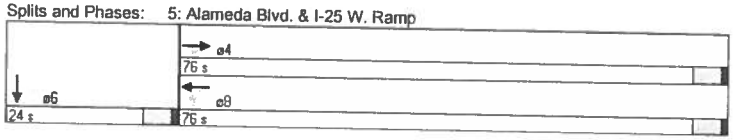
Terry O. Brown, P.E.
10/9/2007

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Volume (vph)	709	867	573	1626	138	94	166
Turn Type		Perm	Perm		Perm		Perm
Protected Phases	4			8		6	
Permitted Phases		4	8		6		6
Detector Phases	4	4	8	8	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	76.0	76.0	76.0	76.0	24.0	24.0	24.0
Total Split (%)	76.0%	76.0%	76.0%	76.0%	24.0%	24.0%	24.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	77.0	77.0	77.0	77.0	15.0	15.0	15.0
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.15	0.15	0.15
v/c Ratio	0.28	0.70	0.66	0.65	0.33	0.34	0.66
Control Delay	2.1	5.8	5.5	3.3	40.5	39.0	42.4
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	2.1	5.8	5.5	3.9	40.5	39.0	42.4
LOS	A	A	A	A	D	D	D
Approach Delay	4.1			4.3		40.7	
Approach LOS	A			A		D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 88 (88%), Referenced to phase 2: and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 7.7 Intersection LOS: A
Intersection Capacity Utilization 120.6% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 5: Alameda Blvd. & I-25 W. Ramp



HCM Signalized Intersection Capacity Analysis
5: Alameda Blvd. & I-25 W. Ramp

Terry O. Brown, P.E.
10/9/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.98	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1610	3323	1583
Flt Permitted		1.00	1.00	0.35	1.00					0.95	0.98	1.00
Satd. Flow (perm)		3539	1583	1254	3539					1610	3323	1583
Volume (vph)	0	709	867	573	1626	0	0	0	0	138	94	166
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	771	942	623	1767	0	0	0	0	150	102	180
RTOR Reduction (vph)	0	0	130	0	0	0	0	0	0	0	0	34
Lane Group Flow (vph)	0	771	812	623	1767	0	0	0	0	81	171	146
Turn Type			Perm	Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases			4	8						6		6
Actuated Green, G (s)		76.0	76.0	76.0	76.0					14.0	14.0	14.0
Effective Green, g (s)		77.0	77.0	77.0	77.0					15.0	15.0	15.0
Actuated g/C Ratio		0.77	0.77	0.77	0.77					0.15	0.15	0.15
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2725	1219	966	2725					242	498	237
v/s Ratio Prot		0.22			0.50							
v/s Ratio Perm			c0.51	0.50						0.05	0.05	c0.09
v/c Ratio		0.28	0.67	0.64	0.65					0.33	0.34	0.62
Uniform Delay, d1		3.4	5.4	5.3	5.3					38.0	38.1	39.8
Progression Factor		0.51	1.47	0.47	0.43					1.00	1.00	1.00
Incremental Delay, d2		0.0	1.0	0.9	0.3					3.7	1.9	11.4
Delay (s)		1.8	9.0	3.4	2.6					41.7	40.0	51.2
Level of Service		A	A	A	A					D	D	D
Approach Delay (s)		5.7			2.8			0.0			45.0	
Approach LOS		A			A			A			D	

Intersection Summary

HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Timings
6: Alameda Blvd. & I-25 E. Ramp

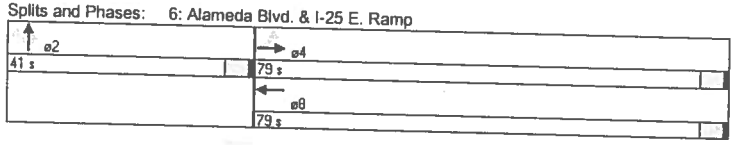
Terry O. Brown, P.E.
10/8/2007

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	176	648	1113	1033	71	189
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		2	
Permitted Phases	4			2		2
Detector Phases	4	4	8	2	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	79.0	79.0	79.0	41.0	41.0	41.0
Total Split (%)	65.8%	65.8%	65.8%	34.2%	34.2%	34.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	75.0	75.0	75.0	37.0	37.0	37.0
Actuated g/C Ratio	0.62	0.62	0.62	0.31	0.31	0.31
v/c Ratio	1.19	0.32	0.61	1.13	1.08dl	0.33
Control Delay	153.0	11.3	14.9	121.0	39.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	153.0	11.3	14.9	121.0	39.2	5.6
LOS	F	B	B	F	D	A
Approach Delay		41.5	14.9		67.0	
Approach LOS		D	B		E	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 3 (3%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 41.6 Intersection LOS: D
Intersection Capacity Utilization 117.7% ICU Level of Service H
Analysis Period (min) 15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Alameda Blvd. & I-25 E. Ramp



HCM Signalized Intersection Capacity Analysis
6: Alameda Blvd. & I-25 E. Ramp

Terry O. Brown, P.E.
10/8/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91	1.00			
Frt	1.00	1.00			0.99		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3490		1610	3247	1583			
Flt Permitted	0.14	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	256	3539			3490		1610	3247	1583			
Volume (vph)	176	648	0	0	1113	113	1033	71	189	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	704	0	0	1210	123	1123	77	205	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	142	0	0	0
Lane Group Flow (vph)	191	704	0	0	1327	0	562	638	63	0	0	0
Turn Type	Perm						Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	74.0	74.0			74.0		36.0	36.0	36.0			
Effective Green, g (s)	75.0	75.0			75.0		37.0	37.0	37.0			
Actuated g/C Ratio	0.62	0.62			0.62		0.31	0.31	0.31			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	160	2212			2181		496	1001	488			
v/s Ratio Prot		0.20			0.38							
v/s Ratio Perm	c0.75						c0.35	0.20	0.04			
v/c Ratio	1.19	0.32			0.61		1.13	1.08dl	0.13			
Uniform Delay, d1	22.5	10.5			13.6		41.5	35.7	29.9			
Progression Factor	0.90	1.03			1.00		1.00	1.00	1.00			
Incremental Delay, d2	131.8	0.1			0.5		82.3	3.1	0.5			
Delay (s)	152.0	10.9			14.1		123.8	38.8	30.4			
Level of Service	F	B			B		F	D	C			
Approach Delay (s)		41.0			14.1			71.6			0.0	
Approach LOS		D			B			E			A	

Intersection Summary

HCM Average Control Delay	43.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	117.7%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Timings
6: Alameda Blvd. & I-25 E. Ramp

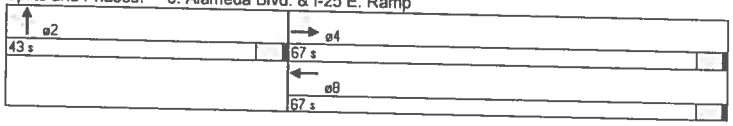
Terry O. Brown, P.E.
10/8/2007

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	294	996	385	807	116	288
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		2	
Permitted Phases	4			2		2
Detector Phases	4	4	8	2	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	67.0	67.0	67.0	43.0	43.0	43.0
Total Split (%)	60.9%	60.9%	60.9%	39.1%	39.1%	39.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	51.7	51.7	51.7	50.3	50.3	50.3
Actuated g/C Ratio	0.47	0.47	0.47	0.46	0.46	0.46
v/c Ratio	0.92	0.65	0.35	0.60	0.38	0.41
Control Delay	50.9	18.0	15.2	29.8	22.9	18.4
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	50.9	18.2	15.2	29.8	22.9	18.4
LOS	D	B	B	C	C	B
Approach Delay		25.6	15.2		24.1	
Approach LOS		C	B		C	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 23.2 — Intersection LOS: C
Intersection Capacity Utilization 72.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Alameda Blvd. & I-25 E. Ramp



HCM Signalized Intersection Capacity Analysis
6: Alameda Blvd. & I-25 E. Ramp

Terry O. Brown, P.E.
10/8/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91	1.00			
Frt	1.00	1.00			0.96		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3392		1610	3263	1583			
Flt Permitted	0.37	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	686	3539			3392		1610	3263	1583			
Volume (vph)	294	996	0	0	385	147	807	116	288	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	320	1083	0	0	418	160	877	126	313	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	0	48	0	0	0
Lane Group Flow (vph)	320	1083	0	0	533	0	439	564	265	0	0	0
Turn Type	Perm						Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	50.7	50.7			50.7		49.3	49.3	49.3			
Effective Green, g (s)	51.7	51.7			51.7		50.3	50.3	50.3			
Actuated g/C Ratio	0.47	0.47			0.47		0.46	0.46	0.46			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	322	1663			1594		736	1492	724			
v/s Ratio Prot		0.31			0.16							
v/s Ratio Perm	c0.47						c0.27	0.17	0.17			
v/c Ratio	0.99	0.65			0.33		0.60	0.38	0.37			
Uniform Delay, d1	29.0	22.3			18.3		22.3	19.6	19.5			
Progression Factor	0.78	0.75			1.00		1.00	1.00	1.00			
Incremental Delay, d2	45.8	0.8			0.1		3.5	0.7	1.4			
Delay (s)	68.4	17.5			18.5		25.8	20.3	20.9			
Level of Service	E	B			B		C	C	C			
Approach Delay (s)		29.1			18.5			22.3			0.0	
Approach LOS		C			B			C			A	

Intersection Summary

HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

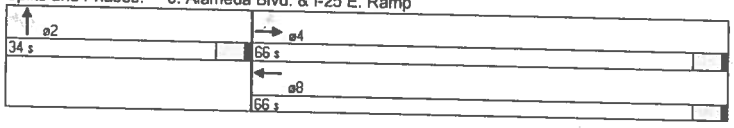
Timings
6: Alameda Blvd. & I-25 E. Ramp

Terry O. Brown, P.E.
10/9/2007

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	178	669	1137	1062	71	189
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		2	
Permitted Phases	4			2		2
Detector Phases	4	4	8	2	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	66.0	66.0	66.0	34.0	34.0	34.0
Total Split (%)	66.0%	66.0%	66.0%	34.0%	34.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	62.0	62.0	62.0	30.0	30.0	30.0
Actuated g/C Ratio	0.62	0.62	0.62	0.30	0.30	0.30
v/c Ratio	1.26	0.33	0.63	1.19	1.14dl	0.33
Control Delay	178.8	4.8	13.2	139.5	34.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	178.8	4.8	13.2	139.5	34.8	5.4
LOS	F	A	B	F	C	A
Approach Delay		41.3	13.2		72.6	
Approach LOS		D	B		E	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.26
Intersection Signal Delay: 43.1 Intersection LOS: D
Intersection Capacity Utilization 120.6% ICU Level of Service H
Analysis Period (min) 15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Alameda Blvd. & I-25 E. Ramp



HCM Signalized Intersection Capacity Analysis
6: Alameda Blvd. & I-25 E. Ramp

Terry O. Brown, P.E.
10/9/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91	1.00			
Frt	1.00	1.00			0.99		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3491		1610	3247	1583			
Flt Permitted	0.13	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	246	3539			3491		1610	3247	1583			
Volume (vph)	178	669	0	0	1137	113	1062	71	189	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	727	0	0	1236	123	1154	77	205	0	0	0
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	144	0	0	0
Lane Group Flow (vph)	193	727	0	0	1351	0	577	654	62	0	0	0
Turn Type	Perm						Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	61.0	61.0			61.0		29.0	29.0	29.0			
Effective Green, g (s)	62.0	62.0			62.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.62	0.62			0.62		0.30	0.30	0.30			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	153	2194			2164		483	974	475			
v/s Ratio Prot		0.21			0.39							
v/s Ratio Perm	c0.78						c0.36	0.20	0.04			
v/c Ratio	1.26	0.33			0.62		1.19	1.14dl	0.13			
Uniform Delay, d1	19.0	9.1			11.8		35.0	30.7	25.5			
Progression Factor	0.67	0.47			1.00		1.00	1.00	1.00			
Incremental Delay, d2	158.6	0.1			0.6		106.4	3.7	0.6			
Delay (s)	171.3	4.4			12.3		141.4	34.4	26.1			
Level of Service	F	A			B		F	C	C			
Approach Delay (s)		39.4			12.3			76.2			0.0	
Approach LOS		D			B			E			A	

Intersection Summary

HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

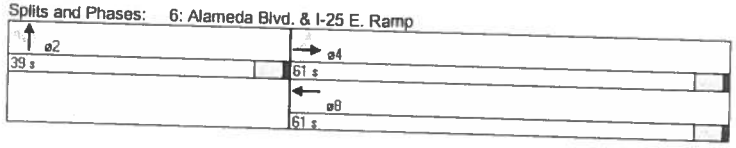
Timings
6: Alameda Blvd. & I-25 E. Ramp

Terry O. Brown, P.E.
10/9/2007

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	296	1017	403	827	116	288
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		2	
Permitted Phases	4			2		2
Detector Phases	4	4	8	2	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	61.0	61.0	61.0	39.0	39.0	39.0
Total Split (%)	61.0%	61.0%	61.0%	39.0%	39.0%	39.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min	C-Min	C-Min	C-Min
Act Effct Green (s)	48.1	48.1	48.1	43.9	43.9	43.9
Actuated g/C Ratio	0.48	0.48	0.48	0.44	0.44	0.44
v/c Ratio	0.93	0 65	0.36	0.64	0.40	0.42
Control Delay	48.8	15.9	13.4	30.0	22.3	18.3
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	48.8	16.0	13.4	30.0	22.3	18.3
LOS	D	B	B	C	C	B
Approach Delay		23.4	13.4		24.0	
Approach LOS		C	B		C	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 21.9
Intersection LOS: C
Intersection Capacity Utilization 74.1%
ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 6: Alameda Blvd. & I-25 E. Ramp



HCM Signalized Intersection Capacity Analysis
6: Alameda Blvd. & I-25 E. Ramp

Terry O. Brown, P.E.
10/9/2007

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95			0.95		0.91	0.91	1.00			
Frt	1.00	1.00			0.96		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (prot)	1770	3539			3397		1610	3263	1583			
Flt Permitted	0.36	1.00			1.00		0.95	0.96	1.00			
Satd. Flow (perm)	678	3539			3397		1610	3263	1583			
Volume (vph)	296	1017	0	0	403	147	827	116	288	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	322	1105	0	0	438	160	899	126	313	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	0	47	0	0	0
Lane Group Flow (vph)	322	1105	0	0	553	0	450	575	266	0	0	0
Turn Type	Perm						Perm		Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	47.1	47.1			47.1		42.9	42.9	42.9			
Effective Green, g (s)	48.1	48.1			48.1		43.9	43.9	43.9			
Actuated g/C Ratio	0.48	0.48			0.48		0.44	0.44	0.44			
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	326	1702			1634		707	1432	695			
v/s Ratio Prot		0.31			0.16							
v/s Ratio Perm	c0.47						c0.28	0.18	0.17			
v/c Ratio	0.99	0.65			0.34		0.64	0.40	0.38			
Uniform Delay, d1	25.7	19.6			16.1		21.8	19.1	18.9			
Progression Factor	0.76	0.75			1.00		1.00	1.00	1.00			
Incremental Delay, d2	43.5	0.8			0.1		4.3	0.8	1.6			
Delay (s)	62.9	15.4			16.2		26.2	19.9	20.5			
Level of Service	E	B			B		C	B	C			
Approach Delay (s)		26.1			16.2			22.2			0.0	
Approach LOS		C			B			C			A	

Intersection Summary

HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Traffic Count Data Sheet

Project Name

Year Counts Taken: **2007**

E-W Street **ALAMEDA**
N-S Street: **2ND ST**

UNSIGNALIZED

Speed Limit (ALAMEDA)= **35** MPH
Speed Limit (2ND ST)= **45** MPH
Date of Count: **9/18/07**

Begin Time	End Time	Eastbound (ALAMEDA)			Westbound (ALAMEDA)			Northbound (2ND ST)			Southbound (2ND ST)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	~~2~~	~~402~~	~~59~~	~~13~~	~~97~~	~~6~~	~~36~~	~~54~~	~~82~~	~~26~~	~~56~~	~~5~~
7:15 AM	7:30 AM	6	396	51	16	101	9	41	61	90	20	51	4
7:30 AM	7:45 AM	9	426	66	20	114	11	54	73	104	31	62	6
7:45 AM	8:00 AM	10	418	33	18	142	10	41	100	102	12	65	15
8:00 AM	8:15 AM	19	357	46	20	180	6	46	65	106	15	44	12
8:15 AM	8:30 AM	~~6~~	~~299~~	~~38~~	~~25~~	~~170~~	~~4~~	~~32~~	~~56~~	~~67~~	~~13~~	~~22~~	~~8~~
8:30 AM	8:45 AM	~~5~~	~~317~~	~~44~~	~~21~~	~~180~~	~~11~~	~~31~~	~~43~~	~~43~~	~~17~~	~~37~~	~~16~~
8:45 AM	9:00 AM	~~6~~	~~322~~	~~49~~	~~19~~	~~181~~	~~9~~	~~54~~	~~47~~	~~50~~	~~19~~	~~41~~	~~25~~
AM Peak Hour Volumes		**44**	**1597**	**196**	**74**	**537**	**36**	**182**	**299**	**402**	**78**	**222**	**37**
% of Total Traffic		1.2%	43.1%	5.3%	2.0%	14.5%	1.0%	4.9%	8.1%	10.9%	2.1%	6.0%	1.0%
% Directional			49.6%			17.5%			23.8%			9.1%	
AM Peak Hour Factor			*0.92*			*0.79*			*0.91*			*0.85*	

Begin Time	End Time	Eastbound (ALAMEDA)			Westbound (ALAMEDA)			Northbound (2ND ST)			Southbound (2ND ST)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	28	250	53	47	392	20	71	84	23	11	54	9
4:15 PM	4:30 PM	26	241	50	41	367	16	68	79	16	10	60	11
4:30 PM	4:45 PM	31	255	55	46	358	18	72	86	20	12	68	13
4:45 PM	5:00 PM	29	259	45	63	281	11	89	76	27	16	85	19
5:00 PM	5:15 PM	~~29~~	~~190~~	~~51~~	~~41~~	~~164~~	~~9~~	~~66~~	~~74~~	~~13~~	~~11~~	~~66~~	~~10~~
5:15 PM	5:30 PM	~~24~~	~~173~~	~~54~~	~~52~~	~~286~~	~~15~~	~~70~~	~~79~~	~~17~~	~~9~~	~~60~~	~~12~~
5:30 PM	5:45 PM	~~19~~	~~214~~	~~49~~	~~67~~	~~345~~	~~23~~	~~79~~	~~88~~	~~19~~	~~7~~	~~54~~	~~16~~
5:45 PM	6:00 PM	~~16~~	~~199~~	~~41~~	~~50~~	~~321~~	~~19~~	~~67~~	~~71~~	~~16~~	~~8~~	~~43~~	~~14~~
PM Peak Hour Volumes		**114**	**1005**	**203**	**197**	**1398**	**65**	**300**	**325**	**86**	**49**	**267**	**52**
% of Total Traffic		2.8%	24.7%	5.0%	4.9%	34.4%	1.6%	7.4%	8.0%	2.1%	1.2%	6.6%	1.3%
% Directional			32.6%			40.9%			17.5%			9.1%	
PM Peak Hour Factor			*0.97*			*0.90*			*0.93*			*0.77*	

Horizon II Development (Alameda Blvd. / Horizon Blvd.)

Projected Turning Movements Worksheet

Alameda Blvd. / Horizon Blvd.

INTERSECTION: E-W Street: **Alameda Blvd.** (4)
N-S Street: **Horizon Blvd.**

Year of Existing Counts 2004
Implementation Year **2008**

Growth Rates	7.00%			7.00%			3.00%			3.00%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Horizon Blvd.)			Southbound (Horizon Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	58	1,521	0	0	977	103	0	0	0	16	0	7
Background Traffic Growth	16	426	0	0	274	29	0	0	0	2	0	1
Subtotal	74	1,947	0	0	1,251	132	0	0	0	18	0	8
Horizon Trip Re-Assignments	0	0	0	0	0	***-30***	0	0	0	***-18***	0	0
Subtotal (NO BUILD - A.M.)	***74***	***1,947***	***0***	***0***	***1,251***	***102***	***0***	***0***	***0***	***0***	***0***	***8***
Percent Office Trips Generated(Entering)	*15.28%*	*0.00%*	*0.00%*	*0.00%*	*24.73%*	*40.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Percent Office Trips Generated(Exiting)	*0.00%*	*4.73%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*5.28%*
Total Trips Generated	33	1	0	0	53	86	0	0	0	0	0	2
Total AM Peak Hour BUILD Volumes	**107**	**1,948**	**0**	**0**	**1,304**	**188**	**0**	**0**	**0**	**0**	**0**	**10**

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Horizon Blvd.)			Southbound (Horizon Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	41	896	0	0	2,102	69	0	0	0	138	0	57
Background Traffic Growth	11	251	0	0	589	19	0	0	0	17	0	7
Subtotal	52	1,147	0	0	2,691	88	0	0	0	155	0	64
Horizon Trip Re-Assignments	0	0	0	0	0	***-20***	0	0	0	***-155***	0	0
Subtotal (NO BUILD - P.M.)	***52***	***1,147***	***0***	***0***	***2,691***	***68***	***0***	***0***	***0***	***0***	***0***	***64***
Percent Office Trips Generated(Entering)	*15.28%*	*0.00%*	*0.00%*	*0.00%*	*24.73%*	*40.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Percent Office Trips Generated(Exiting)	*0.00%*	*4.73%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*5.28%*
Total Trips Generated	6	9	0	0	10	16	0	0	0	0	0	10
Total PM Peak Hour BUILD Volumes	**58**	**1,156**	**0**	**0**	**2,701**	**84**	**0**	**0**	**0**	**0**	**0**	**74**

Number of Office Trips Generated	Entering	Exiting		
	216	**29**	A.M.	100% Office Development
	40	**196**	P.M.	

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Horizon Blvd.)			Southbound (Horizon Blvd.)		
2007 AM Peak Hr. Volumes	70	1840	0	0	1,182	125	0	0	0	17	0	8
2007 PM Peak Hr. Volumes	50	1,084	0	0	2,543	83	0	0	0	150	0	62