X-Ray Associates of New Mexico

(19th Ave.-Westside Blvd. / Unser Blvd.)

Traffic Impact Study

December 10, 2009

FINAL

Signature Date

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Introduction

The purpose of this study is to evaluate the access to the proposed medical office / retail commercial development at the southwest corner of 19th Ave. (Westside Blvd.) / Unser Blvd. and demonstrate the benefit, if any, to permitting a west leg at the signalized intersection of Wellspring (Rhonda Ave.) / Unser Blvd. Also discussed will be the advantage of permitting a full access driveway on 19th Ave. (Westside Blvd.) for the project. This report is to be considered as a companion report to the Traffic Impact Analysis for the proposed X-Ray Associates NM – Westside at the southwest corner of 19th Ave. (Westside Blvd.) / Unser Blvd. This study is for review by the Mid-Region Council of Governments' Roadway Access Committee (R.A.C.) and Transportation Coordinating Committee (T.C.C.).

The proposed access on Unser Blvd. aligned with Wellspring is subject to approval by the Mid-Region Council of Governments' Transportation Coordinating Committee (T.C.C.). The proposed full access driveway on 19th Ave. (Westside) Blvd. west of Unser Blvd. is also subject to approval by the Mid-Region Council of Governments' Transportation Coordinating Committee (T.C.C.).

Study Procedures

When evaluating the alternative access scenarios for the project, it is the case that the only intersections impacted are the signalized intersection of 19th Ave. (Westside Blvd.) / Unser Blvd. and the signalized intersection of Wellspring / Unser Blvd. All other intersections in the area are unaffected by the various proposed access scenarios and, therefore, are not considered in this analysis. They are, however, evaluated in the Traffic Impact Analysis for this project.

It was assumed in this analysis that the proposed access on Unser Blvd. (Rhonda Ave. connection) would be a full access signalized intersection which would constitute the west leg of the existing signalized intersection of Wellspring / Unser Blvd. The alternative access scenarios evaluated in this report are:

1) Case "N" – no access on Unser Blvd. south of 19th Ave. (Westside Blvd.)
2) Case "Y" – a new connection to Unser at Rhonda Ave. (a new west leg of the existing signalized intersection of Wellspring / Unser Blvd.)

The intersections impacted were evaluated to estimate level-of-service, delay, and 95th percentile queue length for each intersection and each movement associated with the two Cases evaluated.

Intersection capacity analyses were performed in accordance with the procedures for signalized and unsignalized intersections utilized in the Synchro (Version 7, Build 763) Transportation System analysis software program as required by the New Mexico Department of Transportation and other local governments. Synchro software deviates from the 2000 Highway Capacity Manual methods in several areas. The results obtained using Synchro software are generally deemed by the reviewing agencies to be relatively close to those based on the 2000 Highway Capacity Manual in most cases.

Intersections targeted for analysis in this study include 19th Ave. (Westside Blvd.) / Unser Blvd. and Wellspring (Rhonda Ave.) / Unser Blvd.

The results of the analyses of Case "Y" and Case "N" were then compared to determine the benefits, if any, of one Case over the other.

Description of Proposed Development

The X-Ray Associates of New Mexico Development is a proposed mixed use medical office / commercial project.

The proposed development is expected to consist of a 161,120 S.F. medical-dental office buildings, a gasoline station with convenience market, a 4,600 S.F. restaurant, 56,200 S.F. general office buildings, 28,700 S.F. of shopping center and a 2-bay drive-in bank. Proposed uses are speculative and, hence, are subject to change. The proposed land use scenario, though, should provide a representative traffic generation rate for most development scenarios associated with development of this property. If the property were to develop in a manner significantly different than the proposed plan considered in this report such that the number of generated trips are significantly greater, then an update to this study may be required by the City.

There is currently no approved access to this property from either major street. Both Unser Blvd. and 19th Ave. / Westside Blvd. are classified as Limited Access Principal Arterial roadways and, as such, partial access is required to be spaced ¼ mile apart, full access is required to be spaced ½ mile apart, and either partial or full access must be approved by the Mid-Region Council of Governments' Transportation Coordinating Committee.

If approved by the Transportation Coordinating Committee, access to this project will be via a full access signalized intersection on Unser Blvd. (the approved signalized access at Wellspring Rd.) and a full access driveway on 19th Ave. west of Unser Blvd.

Trip Generation Rates

Generation of the 2012 AM and PM Peak Hour BUILD conditions incorporated ITE Trip Generation Rates based on ITE's Trip Generation Manual (7th Edition).

Trip generation rates for this project were determined based unadjusted ITE Trip Generation data entered into the VISUM model for the City of Santa Fe. The trip generation rates were then adjusted for internal capture, pass-by trips, and transit reduction within the VISUM model.

The trip generation rate for this project was calculated utilizing data from the Institute of Transportation Engineers' (ITE) Trip Generation Manual (8th Edition). The following table summarizes the results of that calculation:

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

COMMENT	USE (ITE CODE) DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
Tract No.	Medical-Dental Office Building (720)	161.12	6,373	293	78	116	313
Tract No.	General Office Building (710)	56.20	856	104	14	24	118
Tr. 4-8 & 10	Shopping Center (820)	28.70	3,017	45	29	135	141
Tract 2	High Turnover (Sit-Down) Restaurant (932)	4.60	585	28	25	30	21
Tract 9	Gasoline / Service Station w/ Convenience Market (945)	12	1,953	61	61	80	80
Tract 3	Drive-In Bank (912)	2	279	11	8	27	28
	Subtotal		**13,063**	**542**	**215**	**412**	**701**
	Office / Medical Office Trips		**7,229**	**397**	**92**	**140**	**431**
	Retail Commercial Trips		**5,834**	**145**	**123**	**272**	**270**
	Pass-by Reduction for Commercial Trips	30%	(1,750)	(44)	(37)	(82)	(81)
	Adjusted Retail Commercial Trips		**4,084**	**101**	**86**	**190**	**189**

Note: All Units are 1,000's S.F. except Gasoline / Service Station is number of fueling positions and Drive-in Bank is number of windows.

The preceding table demonstrates the calculated trip generation rate based on the proposed plan and the projected uses for each building on the site. An adjustment of 30% was made to account for pass-by trips or mixed use (internal capture) traffic reductions. Trip Generation Rate Summary Table and Individual Trip Generation Rate Worksheets for individual land uses are contained on Pages A-7 thru A-10c in the Appendix.

Trip Distribution / Trip Assignments

Primary and Diverted Linked Trips:

Trips were distributed as follows:

Commercial Land Uses

Primary and diverted linked trips for the commercial land use development were distributed proportionally to the 2012 projected population of Data Analysis Subzones within a two mile radius of the proposed development. Population data for the years 2004 and 2030 were taken from the 2030 Socioeconomic Forecasts by Data Analysis Subzones for the MRCOG Region, S-07-01 (July, 2007), Appendix B and Appendix C, supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2004 and 2030 was interpolated linearly to obtain 2012 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 data analysis subzones is shown in the Appendix. The commercial Trip Distribution map can be found in the Appendix on Page A-11.

Office Land Uses

Primary and diverted linked trips for the office land use development were distributed proportionally to the 2012 projected population of Data Subareas citywide inversely proportional to the distance of the subarea from the project location. Population data for the years 2004 and 2030 were taken from the 2030 Socioeconomic Forecasts by Data Analysis Subzones for the MRCOG Region, S-07-01 (July, 2007), Appendix E and Appendix F, supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2004 and 2030 was interpolated linearly to obtain 2012 population data to utilize for this analysis. Population Subareas 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 data analysis subzones is shown in the Appendix. The office Trip Distribution map can be found in the Appendix on Page A-20.

Background Traffic Growth

Background traffic growth rates for the implementation year (2012) were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2003, 2004, 2005, 2006, 2007 Traffic Flow maps prepared by the Mid-Region Council of Governments (MRCOG). Almost all 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 growth rate for each approach if that calculated rate appeared feasible. However, there were some instances where the rate indicated a negative growth trend. In those cases, an appropriate growth rate from an adjacent segment of the same roadway was considered. Due to the potential for growth in the area, it was believed that a zero percent growth rate was unlikely in most cases for this study. 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 for the implementation year (2012) with linear regression trend lines are shown in the Appendix on Pages A-30 thru A-37. A Historic Growth Map can be found in the Appendix, pg. A-38. The growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (pp. A-42 thru A-75 in the Appendix).

Background traffic growth rates for the horizon year (2030) were calculated so as to approximate the 2030 AM and PM Peak Hour link volumes in the Mid-Region Council of Governments' regional transportation model. The worksheets for calculation of the annual growth rates associated with each intersection for the horizon year are contained under the 2030 Intersection Turning Movements Volumes Worksheets (Appendix Pages A-59 thru A-75). The calculated growth rate should result in approach volumes (NO BUILD) at each intersection that closely approximate the link volumes for the upstream roadway segment. If, however, the calculated growth rate based on the MRCOG regional model results in a negative growth rate, then this report assumes that the growth rate for that leg of the intersection is zero. Consequently, in those instances where the MRCOG growth rate appears to be negative, the projected horizon year volumes in this report will not match the MRCOG regional model volumes in those cases, but will be somewhat higher.

Projected Peak Hour Turning Movements for 2012 and 2030 Buildout

The calculated annual growth rates were applied to the most recent peak hour traffic count volumes and trips were added for Cabezon Community development, Tracts 12, 13, and 14 to account for trips generated by projects that are planned to be constructed in the near future. The sum of the existing volumes plus growth plus other proposed projects constitute the 2012 NO BUILD volumes utilized in this report. To these volumes, the generated trips based on implementation of the proposed X-Ray Associates of New Mexico development were added to obtain the 2012 BUILD Volumes utilized for the 2012 BUILD Condition analyses. See Appendix Pages A-42 thru A-75 for further information regarding the 2012 and 2030 turning movement volumes.

NOTE: The implementation year and the horizon year volumes utilized in this study were calculated in similar manner with one exception. The implementation year background traffic growth rates were based on historic growth rate data and the horizon year background traffic growth rates were based on the Mid-Region Council of Governments' regional transportation model link volumes for 2030.

Case "Y" and Case "N" Analyses

Classification of levels-of-service and delay for signalized and unsignalized intersections will be made based on criteria established by Synchro, Version 7 (Build 763) computer modeling software which approximates the 2000 Highway Capacity Manual methodology. The average control delay is calculated for each intersection and for each lane group of each leg of the intersection. The control delay then determines the level-of-service based on the following tables:

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

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

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

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

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

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

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

Intersection #3 – 19th Ave. (Westside Blvd.) / Unser Blvd. - Pages A-76 thru A-95

The following table provides a summary of the Levels-of-Service / delays associated with the 2012 NO BUILD and with the 2012 BUILD Conditions associated with each of the two cases analyzed in this study:

Intersection: **19th Ave. (Westside Blvd.) / Unser Blvd.**

		2012 AM Peak Hour						**2012 PM Peak Hour**					
		BASE GEOM.		Case "Y"		Case "N"		BASE GEOM.		Case "Y"		Case "N"	
		NO BUILD		BUILD		BUILD		NO BUILD		BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	D - 37.4	1	D - 52.9	1	D - 52.9	1	D - 50.6	1	D - 50.3	1	E - 61.1
	T	1	D - 37.3	1	E - 57.4	1	E - 55.6	1	D - 45.9	1	D - 51.9	1	E - 56.5
	R	>	D - 37.3	>	D - 53.8	>	D - 39.9	>	D - 45.9	>	D - 45.2	>	F - 90.9
WB	L	1	E - 59.7	1	F - 80.7	1	F - 224	1	D - 43.6	1	F - 130	1	F - 105
	T	1	C - 28.9	1	D - 54.2	3	E - 56.9	1	F - 365	1	D - 46.4	3	D - 54.3
	R	>	C - 28.9	>	D - 37.3	>	D - 39.1	>	F - 365	>	E - 63.7	>	F - 86.4
NB	L	1	B - 15.2	1	C - 23.7	1	F - 81.8	1	F - 115	1	B - 18.4	1	E - 55.3
	T	2	C - 25.2	2	B - 11.0	2	B - 10.7	2	F - 301	2	D - 53.0	2	D - 50.4
	R	1	B - 10.5	1	A - 1.3	1	A - 5.4	1	B - 18.8	1	A - 0.9	1	A - 3.6
SB	L	1	C - 25.0	1	D - 53.4	1	D - 53.8	1	F - 3.4.5	1	D - 40.8	1	D - 42.7
	T	2	A - 6.0	2	C - 22.1	2	E - 72.9	2	C - 29.3	2	C - 21.2	2	D - 53.2
	R	1	A - 1.3	1	A - 4.2	1	A - 10.0	1	B - 12.3	1	A - 5.9	1	B - 10.7
Intersection:		***B - 17.5***		***C - 25.5***		***E - 57.2***		***F - 206***		***D - 46.8***		***E - 59.2***	
				BUILD Conditions Mitigated						BUILD Conditions Mitigated			

The 2012 analysis yields that there is a significant benefit to Case "Y" during the AM Peak Hour period and a moderate benefit to Case "Y" during the PM Peak Hour period.

The following table provides a summary of the Levels-of-Service / delays associated with the 2030 NO BUILD and with the 2030 BUILD Conditions associated with each of the two cases analyzed in this study:

Intersection: **19th Ave. (Westside Blvd.) / Unser Blvd.**

		2030 AM Peak Hour						2030 PM Peak Hour					
		BASE GEOM.		Case "Y"		Case "N"		BASE GEOM.		Case "Y"		Case "N"	
		NO BUILD		BUILD		BUILD		NO BUILD		BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	D - 36.7	1	E - 58.6	1	E - 66.3	1	F - 152	1	D - 54.2	1	F - 105
	T	1	D - 50.9	2	E - 57.1	2	E - 55.6	1	D - 45.8	2	E - 56.9	2	E - 56.5
	R	>	D - 50.9	1	E - 67.5	1	E - 78.2	>	D - 45.8	1	D - 52.1	1	F - 153
WB	L	1	F - 83.1	2	F - 201	2	F - 224	1	E - 59.2	2	F - 140	2	F - 192
	T	1	C - 27.4	2	E - 57.0	2	E - 56.9	1	F - 416	2	D - 54.0	2	E - 55.3
	R	>	C - 27.4	2	D - 40.2	2	D - 40.0	>	F - 416	2	F - 1001	2	F - 123
NB	L	1	B - 14.9	2	D - 39.1	2	F - 116	1	F - 153	2	C - 26.5	2	E - 55.6
	T	2	D - 48.1	3	B - 10.4	3	B - 10.6	2	F - 332	3	F - 82.7	3	E - 58.7
	R	1	A - 7.1	1	A - 1.2	1	A - 1.5	1	B - 16.9	1	A - 0.9	1	A - 6.9
SB	L	1	F - 83.5	2	D - 53.4	2	D - 53.8	1	F - 366	2	D - 45.0	2	D - 45.0
	T	2	F - 104	2	F - 131	2	F - 183	2	E - 64.8	2	D - 52.4	2	F - 129
	R	1	A - 3.2	1	A - 5.7	1	A - 8.9	1	B - 11.3	1	A - 4.8	1	A - 9.6
Intersection:		***E - 78.9***		***E - 79.3***		***F - 103***		***F - 230***		***E - 70.4***		***F - 95.5***	
				BUILD Conditions Mitigated						BUILD Conditions Mitigated			

The 2030 analysis yields that there is a significant benefit to Case "Y" during the AM Peak Hour period and during the PM Peak Hour period. This is probably due to the fact that a lack of access on Unser Blvd. will require virtually all of the entering and exiting traffic to travel through the intersection of 19th Ave. (Westside Blvd.) / Unser Blvd. whereas allowing access (especially right turn out and left turn in access) on Unser will allow traffic generated by this project to avoid the intersection of 19th Ave. (Westside Blvd.) / Unser Blvd., thus decreasing traffic volumes at the intersection significantly.

The preceding analysis demonstrates a significant benefit gained in the operational characteristics of the intersection of 19th Ave. (Westside Blvd.) / Unser Blvd. by implementing the proposed new full access on Unser Blvd. south of 19th Ave. (Westside Blvd.) to align with the existing Wellspring.

The following table demonstrates the calculated 95th percentile queuing at the intersection based on 2012 AM and PM Peak Hour volumes:

Queueing Analysis Summary Sheet

Project: X-Ray Associates (19th Ave / Unser Blvd)

Intersection: 19th Av SE / Unser Blvd

2012

Approach	Left Turns			Thru Movements				Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*9*	*N/A*	*2*	*0*	*Cont*		*1*	*34*	*N/A*
AM NO BUILD Queue	1	9	25	2	0	0		1	34	75
AM BUILD Queue	**1**	**43**	**100**	**2**	**21**	**50**		**1**	**44**	**100**
Existing Lane Length	*1*	*14*	*N/A*	*2*	*0*	*Cont*		*1*	*20*	*N/A*
PM NO BUILD Queue	1	14	**50**	2	0	**0**		1	20	**50**
PM BUILD Queue	**1**	**126**	**200**	**2**	**71**	**100**		**1**	**56**	**125**
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*0*	*N/A*	*2*	*0*	*Cont*		*2*	*0*	*N/A*
AM NO BUILD Queue	1	200	275	2	0	0		2	130	125
AM BUILD Queue	**1**	**219**	**300**	**2**	**56**	**75**		**2**	**130**	**125**
Existing Lane Length	*1*	*0*	*N/A*	*2*	*0*	*Cont*		*2*	*0*	*N/A*
PM NO BUILD Queue	1	360	**475**	2	0	**0**		2	980	675
PM BUILD Queue	**1**	**373**	**500**	**2**	**38**	**50**		**2**	**980**	**675**
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*1*	*9*	*N/A*	*3*	*783*	*Cont*		*1*	*0*	*N/A*
AM NO BUILD Queue	1	10	25	3	1,114	525		1	100	175
AM BUILD Queue	**1**	**40**	**75**	**3**	**1,127**	**525**		**1**	**107**	**175**
Existing Lane Length	*1*	*44*	*N/A*	*3*	*1,320*	*Cont*		*1*	*0*	*N/A*
PM NO BUILD Queue	1	50	**100**	3	2,120	>1,000	*	1	310	**425**
PM BUILD Queue	**1**	**68**	**125**	**3**	**2,161**	**>1,000**	*	**1**	**335**	**450**
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length		# Lanes	Vol.	Length
Existing Lane Length	*2*	*0*	*N/A*	*3*	*1,300*	*Cont*		*1*	*4*	*N/A*
AM NO BUILD Queue	2	340	275	3	2,008	850		1	5	25
AM BUILD Queue	**2**	**340**	**275**	**3**	**2,037**	**875**		**1**	**93**	**150**
Existing Lane Length	*2*	*0*	*N/A*	*3*	*1,098*	*Cont*		*1*	*12*	*N/A*
PM NO BUILD Queue	2	500	375	3	1,630	775		1	14	**50**
PM BUILD Queue	**2**	**500**	**375**	**3**	**1,653**	**775**		**1**	**83**	**150**

	AM	PM
Cycle Length:	120	130

NOTE: Queue lengths are in feet.

Since the intersection is virtually non-existent, no existing auxiliary lane lengths are provided. The auxiliary lanes should be constructed to a minimum length recommended in the preceding table to meet requirements for queuing for the projected implementation year volumes.

Calculated right turn queue lengths in the preceding table may be reduced by 50% to account for right-turns-on red and overlap phasing.

Intersection #4 – Rhonda Ave. (Wellspring) / Unser Blvd. - Pages A-96 thru A-111

The following table provides a summary of the Levels-of-Service / delays associated with the 2012 BUILD Conditions associated with each of the two cases analyzed in this study:

Intersection: **Rhonda Ave. (Wellspring) / Unser Blvd.**

		2012 AM Peak Hour						**2012 PM Peak Hour**					
		BASE GEOM.		**Case "Y"**		**Case "N"**		**BASE GEOM.**		**Case "Y"**		**Case "N"**	
		NO BUILD		**BUILD**		**BUILD**		**NO BUILD**		**BUILD**		**BUILD**	
		Lanes	**LOS-Delay**	**Lanes**	**LOS-Delay**	**Lanes**	**LOS-Delay**	**Lanes**	**LOS-Delay**	**Lanes**	**LOS-Delay**	**Lanes**	**LOS-Delay**
EB	L	0	A - 0.0	2	E - 59.4	0	A - 0.0	0	A - 0.0	2	E - 55.1	0	A - 0.0
	T	0	A - 0.0	1	E - 57.5	0	A - 0.0	0	A - 0.0	1	D - 52.6	0	A - 0.0
	R	0	A - 0.0	1	C - 34.2	0	A - 0.0	0	A - 0.0	1	E - 66.0	0	A - 0.0
WB	L	2	D - 35.7	2	E - 55.4	2	D - 50.1	2	E - 57.2	2	F - 85.2	2	D - 44.7
	T	0	A - 0.0	1	D - 50.1	0	A - 0.0	0	A - 0.0	1	D - 38.5	0	A - 0.0
	R	1	C - 22.0	1	D - 37.1	1	C - 33.5	1	D - 38.8	1	D - 39.7	1	C - 32.6
NB	L	0	A - 0.0	1	E - 60.4	0	A - 0.0	0	A - 0.0	1	C - 33.9	0	A - 0.0
	T	2	B - 10.2	3	A - 3.6	2	B - 11.2	2	B - 18.6	3	B - 17.4	2	D - 53.2
	R	1	A - 3.9	1	A - 1.7	1	A - 3.6	1	A - 2.1	1	A - 2.7	1	B - 12.2
SB	L	2	C - 34.4	2	E - 56.8	2	D - 49.7	2	E - 56.8	2	D - 45.8	2	D - 53.8
	T	2	A - 4.2	2	D - 52.4	2	A - 5.2	2	A - 7.8	2	D - 37.5	2	B - 14.9
	R	0	A - 0.0	1	A - 9.7	0	A - 0.0	0	A - 0.0	1	B - 16.3	0	A - 0.0
Intersection:		***B - 10.3***		***D - 38.3***		***B - 13.0***		***C - 22.5***		***D - 37.7***		***D - 35.8***	
				Case "Y" Mitigated						Case "Y" Mitigated			

By implementing a new westbound leg at the intersection of Wellspring / Unser Blvd., it is expected that the average delay will increase somewhat. There is somewhat of a trade-off achieved by implementing the new westbound leg at the intersection. The average delay at Wellspring / Unser Blvd. increases somewhat while the delays at 19th Ave. (Westside Blvd.) / Unser Blvd. are reduced.

The following table provides a summary of the Levels-of-Service / delays associated with the 2030 BUILD Conditions associated with each of the two cases analyzed in this study:

Intersection: **Rhonda Ave. (Wellspring) / Unser Blvd.**

		2030 AM Peak Hour						2030 PM Peak Hour					
		BASE GEOM.		Case "Y"		Case "N"		BASE GEOM.		Case "Y"		Case "N"	
		NO BUILD		BUILD		BUILD		NO BUILD		BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	0	A - 0.0	2	E - 59.3	0	A - 0.0	0	A - 0.0	2	E - 61.1	0	A - 0.0
	T	0	A - 0.0	1	E - 57.5	0	A - 0.0	0	A - 0.0	1	E - 57.5	0	A - 0.0
	R	0	A - 0.0	1	D - 37.1	0	A - 0.0	0	A - 0.0	1	F - 92.4	0	A - 0.0
WB	L	2	D - 53.9	2	D - 54.5	2	D - 49.1	2	E - 73.5	2	F - 108	2	D - 46.1
	T	0	A - 0.0	1	D - 49.5	3	A - 0.0	0	A - 0.0	1	D - 42.3	3	A - 0.0
	R	1	D - 35.5	1	D - 36.2	>	C - 32.4	1	D - 44.9	1	D - 44.4	>	C - 33.6
NB	L	0	A - 0.0	1	E - 59.7	0	A - 0.0	0	A - 0.0	1	D - 45.8	0	A - 0.0
	T	2	B - 10.4	3	A - 8.8	2	B - 18.4	2	B - 15.7	3	B - 17.4	2	F - 103
	R	1	A - 3.3	1	B - 11.2	1	A - 5.1	1	A - 1.0	1	A - 0.7	1	B - 12.6
SB	L	2	D - 49.5	2	E - 59.6	2	D - 49.1	2	E - 55.1	2	D - 52.6	2	E - 55.4
	T	2	A - 5.1	2	F - 88.8	2	A - 7.2	2	A - 9.7	2	D - 39.2	2	B - 18.1
	R	0	A - 0.0	1	A - 4.4	0	A - 0.0	0	A - 0.0	1	B - 14.4	0	A - 0.0
Intersection:		***B - 12.4***		***D - 50.4***		***B - 15.6***		***C - 23.6***		***D - 42.3***		***E - 57.4***	
				Case "Y" Mitigated						Case "Y" Mitigated			

The results in the preceding table demonstrate an increase in AM Peak Hour average delay, but a decrease in PM Peak Hour delay by implementing the new west let at Wellspring. Since there is generally an increase in delay at Wellspring and a decrease in delay at 19th Ave. (Westside Blvd.), it should be useful to consider the Measures of Effectiveness (MOE) of the immediate transportation system (i.e., the intersections of 19th Ave.-Westside Blvd. / Unser Blvd., and the driveways). The following table summarizes the results of the Synchro 7 MOE Reports:

	2012 AM Peak Hr.		2012 PM Peak Hr.		2030 AM Peak Hr.		2030 PM Peak Hr.	
CASE	**"Y"**	**"N"**	**"Y"**	**"N"**	**"Y"**	**"N"**	**"Y"**	**"N"**
No. Intersections	4	3	4	3	4	3	4	3
Total Delay (hrs)	67	86	140	156	190	193	211	264
Stops (#)	5168	5137	9521	10108	6672	7101	10681	11212
Ave. Speed (MPH)	18	16	14	13	10	11	11	10
Total Travel Time (hrs)	104	136	214	232	251	256	292	347
Dist. Travelled (mi)	2083	2150	2943	3036	2630	2704	3282	3386
Fuel Consumed (gal)	180	193	303	324	306	313	381	428
Fuel Economy (mpg)	11.6	11.2	9.7	9.4	8.6	8.6	8.6	7.9
Unserved Vehicles (#)	055	188	140	115	749	712	508	828
Veh. In dilemma zone (#)	206	229	288	306	263	274	303	302
PERFORMANCE INDEX	**81.3**	**99.9**	**166.9**	**184.6**	**208.4**	**213**	**240.7**	**295.1**
% Improvement	**18.6%**	**N/A**	**9.6%**	**N/A**	**2.2%**	**N/A**	**18.4%**	**N/A**

All results are based on mitigated geometry.

The preceding table demonstrates a benefit to the adjacent transportation system as a result of implementing the new west leg of Wellspring (Rhonda Ave.) at Unser Blvd. The benefit varies from about 2.2% to 19%, but is primarily in the 15% range. Also, the analysis above considers 4 intersections for Case "Y" and only 3 intersections for Case "N". Consideration of the same three intersections for each Case would have slightly increased the benefit shown for Case "Y", although it should only be a minor variation.

Access Design Specifications

Access along 19th Ave. (Westside Blvd.) and along Unser Blvd. will be required to comply with the Access Policy of the Mid-Region Council of Governments (MRCOG). The MRCOG Access Policy limits spacing of access along 19th Ave. (Westside Blvd.) with the following language:

> *Access shall be provided for full intersections at approximate one-half mile intervals and for T intersections and right-in/right-out driveways at approximate one-quarter mile intervals, except within the potential village center area of Unit 6. Here more frequent access is allowed provided that driveways are not located closer than approximately 400 feet from adjacent access points.*

The proposed driveway (Driveway "B") on 19th Ave. (Westside Blvd.) is located at least 600 feet west of Unser Blvd. Even though they may not be warranted at this time, it is suggested that Driveway "B" be designed and constructed implementing an eastbound right turn deceleration lane and a westbound left turn deceleration lane. Also, there should be separate northbound right and left turn lanes in the driveway to accommodate future volumes when Rio Rancho has developed significantly to the west of this project.

Access along Unser Blvd. currently permits a signalized full access tee intersection at Arroyo Rd. (now called Wellspring). The developer of this project desires to construct and implement a west leg of the intersection to provide access to the new development to the west.

Findings and Conclusions

The proposed medical office / retail commercial development at the southwest corner of 19th Ave. (Westside Blvd.) / Unser Blvd. is a moderately large size project. Currently, the only legal access to the project is via Rhonda Ave. which has neither approval for a connection to Unser Blvd. nor to Westside Bvld., both of which are Limited Access Principal Arterial Roadways on the Long Range Roadway Map for the Albuquerque Metropolitan Area. We could conclude that the project currently almost does not have access. A medical office / retail commercial project of this size and nature would desire access from both major streets fronting the property. This study has found that there is also a significant benefit to the adjacent transportation system by

approving and implementing the new west leg at the intersection of Wellspring / Unser Blvd. and a new full access driveway on 19th Ave. (Westside Blvd.) west of Unser Blvd.

Recommendations

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

Recommendations for improvements to the adjacent transportation system include:

Access – it is recommended that access to this project be obtained from each of the two major streets fronting the property. Since the proposed development is a medical office / retail project, access from the arterial roadways is very important. In order to access the major roadways fronting the project, approval of the Mid-Region Council of Governments' Transportation Coordinating Committee will be required. This study recommends that a new west leg at the intersection of Wellspring / Unser Blvd. be constructed and implemented into the existing signalized intersection. The new intersection will require the following minimum geometry:

Recommended Geometry (Wellspring-Rhonda Ave. / Unser Blvd.)

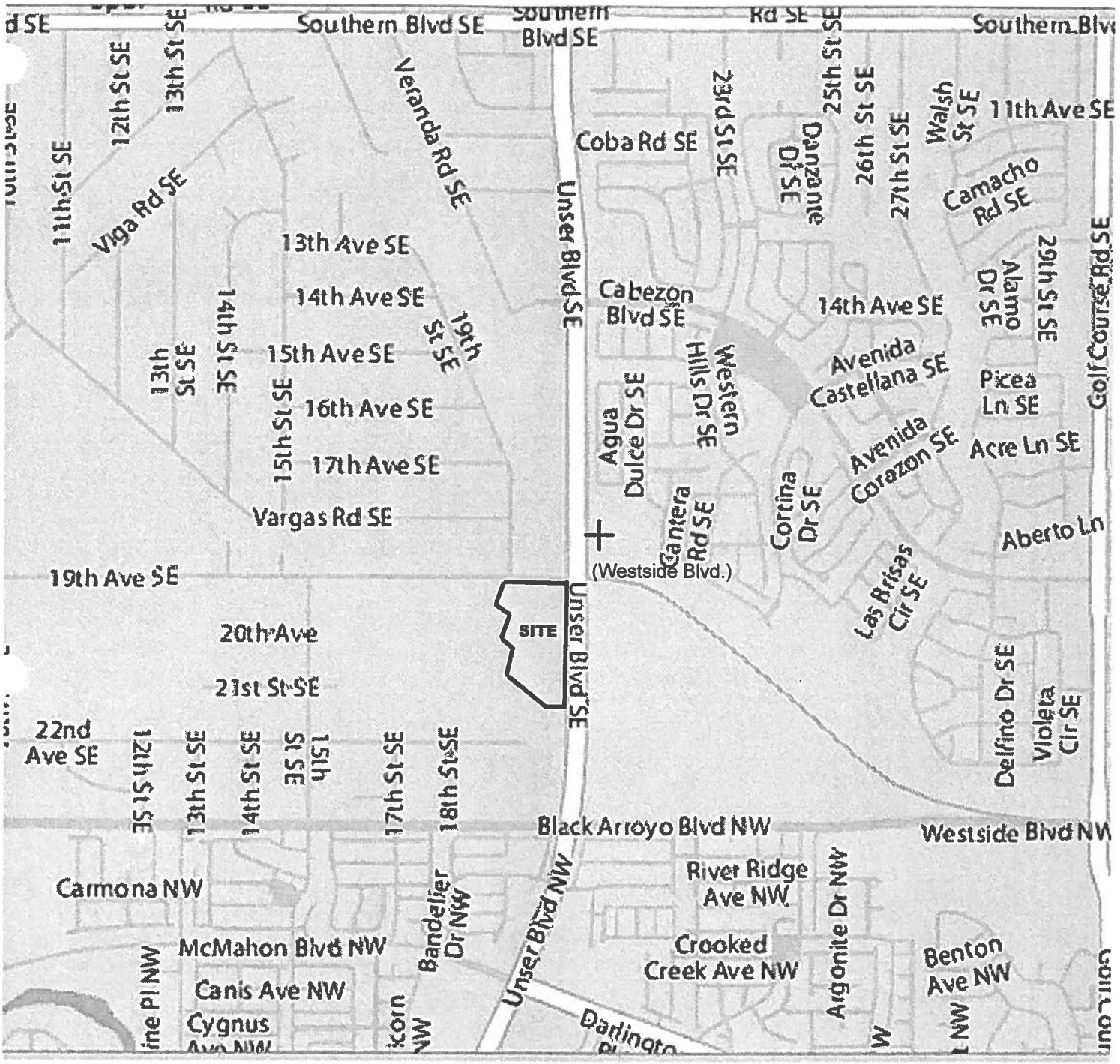
Approach	Left Turn Lanes	Thru/Lefts	Thru Lanes	Thru/Rights	Right Turn Lanes
EB Rhonda Ave.	2	0	1	0	1
WB Wellspring	2	0	1	0	1
NB Unser Blvd.	1	0	3	0	1
SB Unser Blvd.	2	0	2	0	1

The traffic signal should be designed and constructed to implement right turn overlap phasing in each of the four directions.

Driveway "B" on 19th Ave. (Westside Blvd.) should be constructed as a full access unsignalized intersection with two exiting lanes (one for left turn and one for right turn movements) and one entering lane. An eastbound right turn deceleration lane and a westbound left turn deceleration lane are recommended to be constructed in accordance with the recommendations on pages 21 and 22 of the accompanying Traffic Impact Study for this project. Driveway "B" should be located at least 600 feet west of the Unser Blvd. west curbline.

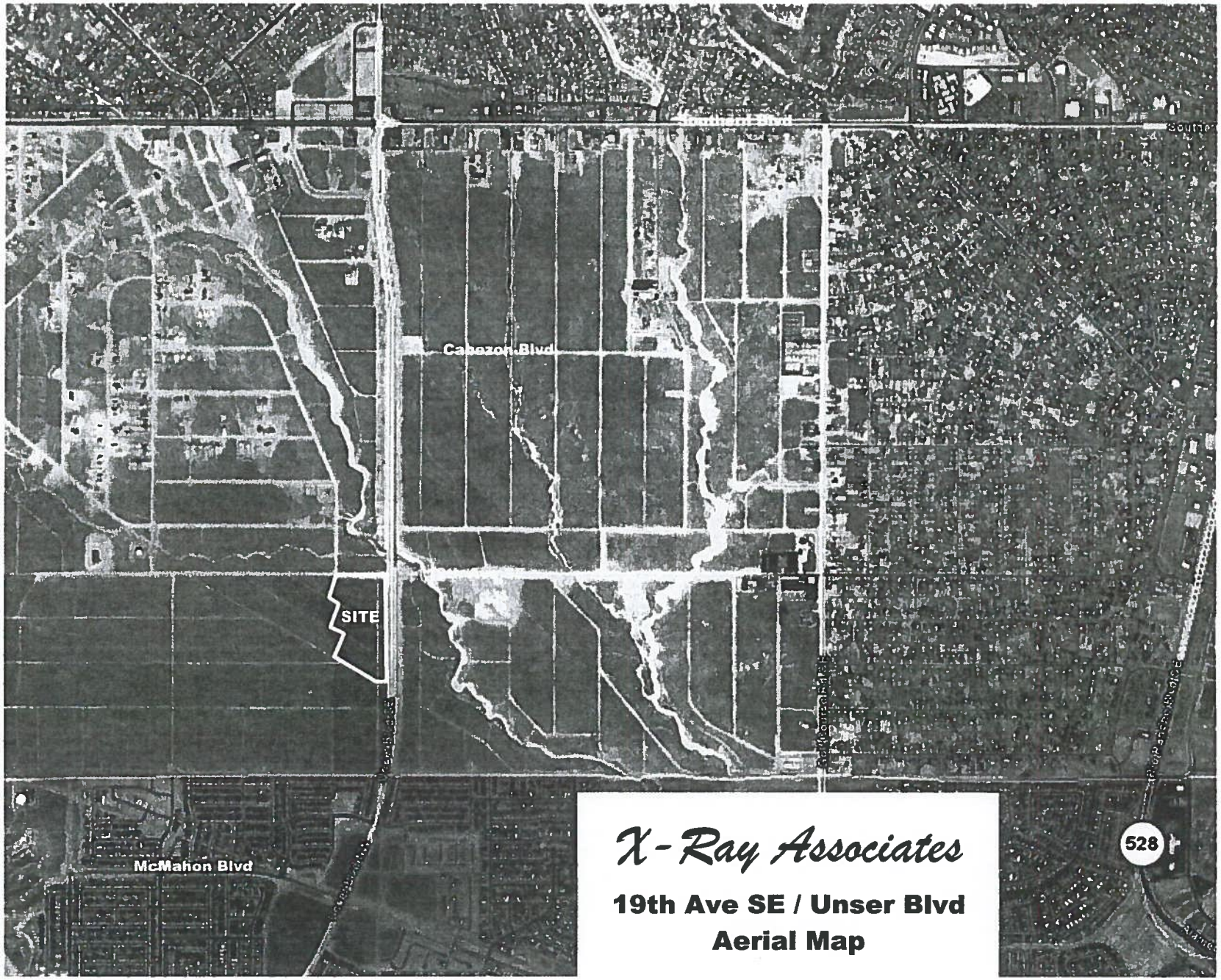
Appendix

APPENDIX



X- Ray Associates

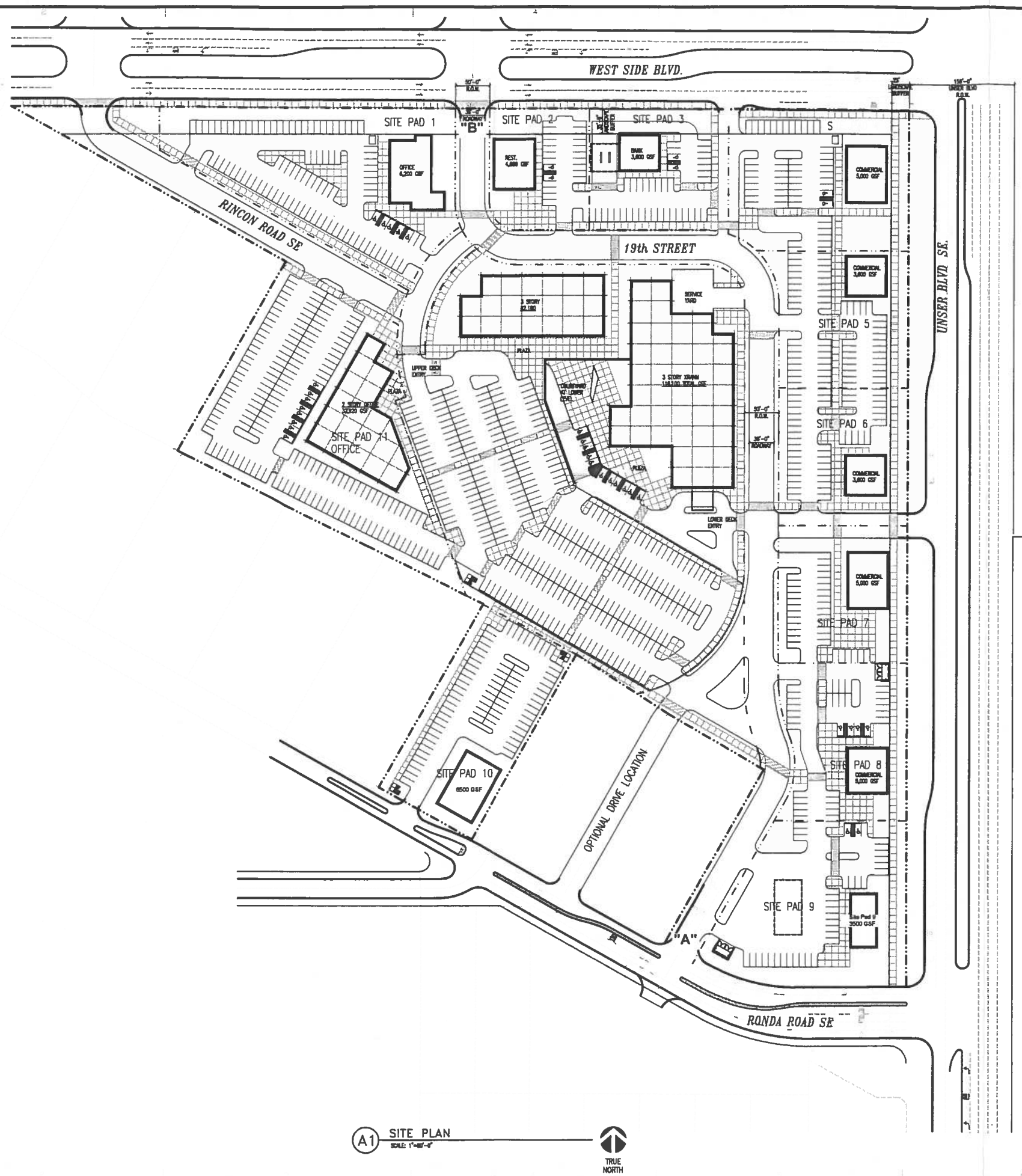
19th Ave SE / Unser Blvd
Vicinity Map



X-Ray Associates

19th Ave SE / Unser Blvd
Aerial Map

8/20/2009 4:14 PM



1,100 PROVIDED PARKING SPACES
PHASE TWO EMPLOYEE PARKING AN ADDITIONAL 100 PARKING SPACES

A1 SITE PLAN
SCALE: 1"=60'-0"

TRUE NORTH

STUDIO SW ARCHITECTS
STUDIO SOUTHWEST ARCHITECTS, INC.
2101 Mountain Rd. NW, Albuquerque, NM 87104
505.843.9639 fax 505.843.9683
Web Site: www.studioswarch.com
E-Mail: mail@studioswarch.com

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CONSULTANTS

Architect | Engineer

XRANM
RIO RANCHO

Key Plan
NTS

MARK	DATE	DESCRIPTION
ISSUE:		SCHEMATIC DESIGN
PROJECT NO:		0908
CAD DWG FILE:		09xx-AS-101.DWG
DRAWN BY:		LAJ
CHECKED BY:		DD
DATE:		06/24/2009

SHEET TITLE
SITE PLAN

AS-101

P:\0908 XRANM\10-Drawings\1--PREDES\0908-AS-101-ca.dwg
LAJACKSON

2008 Traffic Flows
for the Greater Albuquerque Area

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.

Average Weekday Traffic Flows

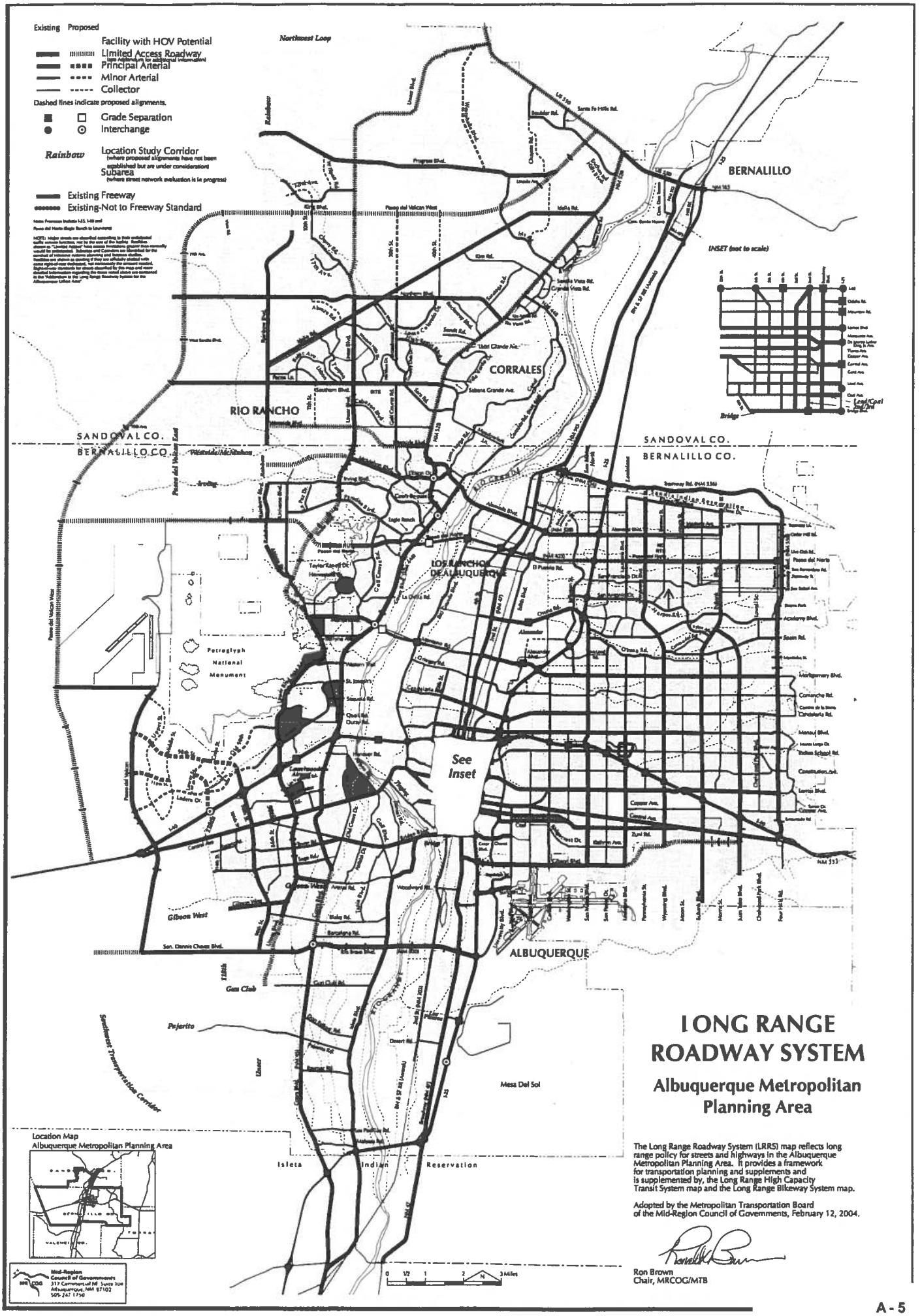
- 0 - 900
- 1000 - 4900
- 5000 - 14900
- 15000 - 24900
- 25000 - 34900
- 35000 - 44900
- 45000 - 54900
- 55000 - 184900

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).

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

0 1 2 3 4 Miles

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



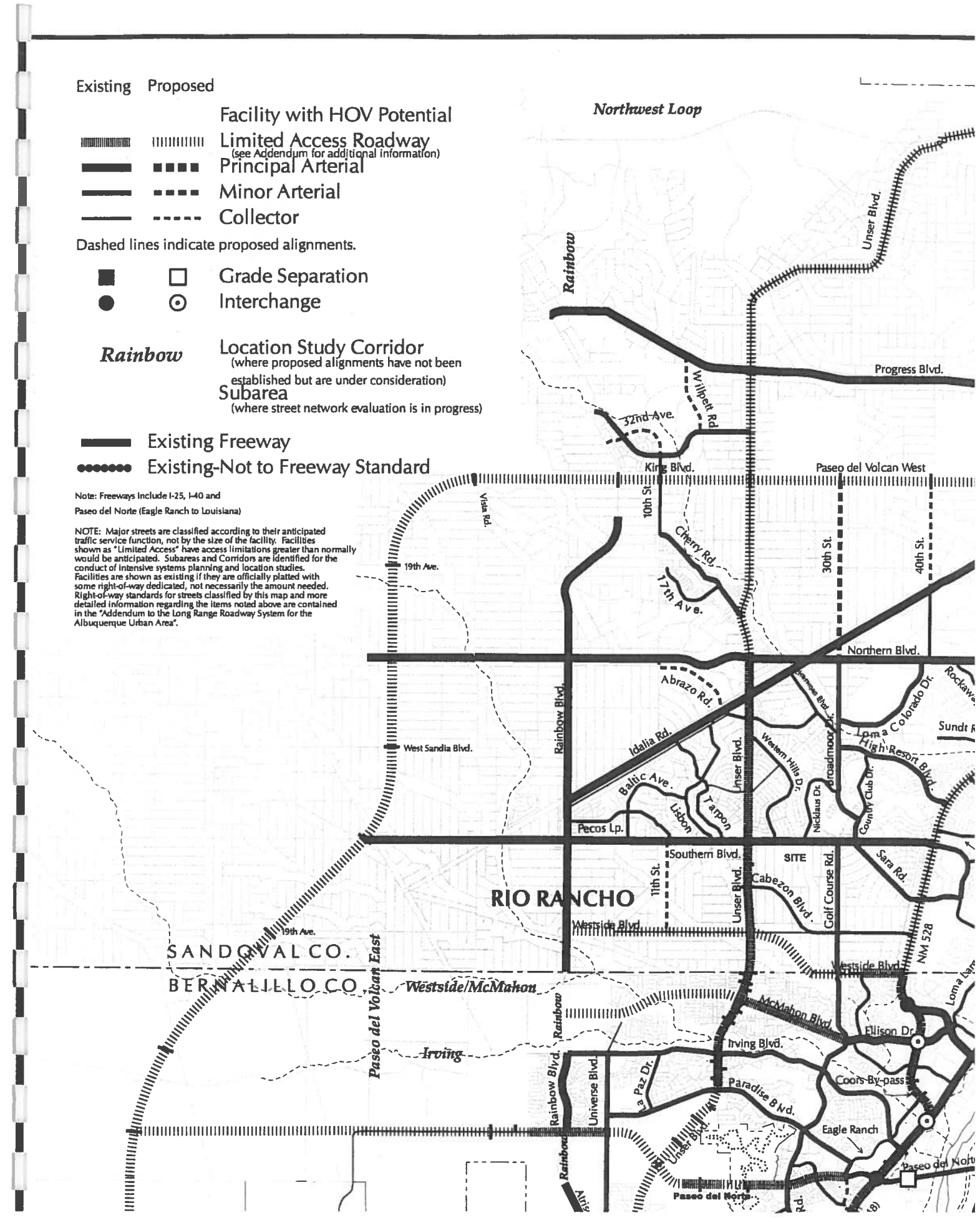
LONG RANGE ROADWAY SYSTEM

Albuquerque Metropolitan Planning Area

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

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

Ron Brown
Chair, MRCOG/MTB


Existing Proposed
Facility with HOV Potential
Limited Access Roadway
(see Addendum for additional information)
Principal Arterial
Minor Arterial
Collector
Dashed lines indicate proposed alignments.
Grade Separation
Interchange
Rainbow
Location Study Corridor
(where proposed alignments have not been established but are under consideration)
Subarea
(where street network evaluation is in progress)
Existing Freeway
Existing-Not to Freeway Standard
Note: Freeways include I-25, I-40 and
Paseo del Norte (Eagle Ranch to Louisiana)
NOTE: Major streets are classified according to their anticipated traffic service function, not by the size of the facility. Facilities shown as "Limited Access" have access limitations greater than normally would be anticipated. Subareas and Corridors are identified for the conduct of intensive systems planning and location studies. Facilities are shown as existing if they are officially platted with some right-of-way dedicated, not necessarily the amount needed. Right-of-way standards for streets classified by this map and more detailed information regarding the items noted above are contained in the "Addendum to the Long Range Roadway System for the Albuquerque Urban Area".
Northwest Loop
Rainbow
Unser Blvd.
Progress Blvd.
Wilpett Rd.
32nd Ave.
King Blvd.
Paseo del Volcan West
10th St.
Vista Rd.
Cherry Rd.
19th Ave.
17th Ave.
30th St.
40th St.
Northern Blvd.
Abrazo Rd.
Rainbow Blvd.
West Sandia Blvd.
Idalia Rd.
Baltic Ave.
Lisbon
Tarpon
Unser Blvd.
Western Hills Dr.
Broadmoor Dr.
Nicklaus Dr.
Country Club Dr.
Loma Colorado Dr.
High Resort Blvd.
Pecos Lp.
Southern Blvd.
SITE
11th St.
Cabezon Blvd.
Golf Course Rd.
Sara Rd.
RIO RANCHO
Westside Blvd.
NM 528
19th Ave.
SANDOVAL CO.
BERNALILLO CO.
Paseo del Volcan East
Westside/McMahon
Rainbow
McMahon Blvd.
Ellison Dr.
Irving
Irving Blvd.
Universe Blvd.
La Paz Dr.
Paradise Blvd.
Coors By-pass
Eagle Ranch
Paseo del Norte

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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

COMMENT	USE (ITE CODE) / DESCRIPTION		24 HR VOL GROSS	A. M. PEAK HR. ENTER	A. M. PEAK HR. EXIT	P. M. PEAK HR. ENTER	P. M. PEAK HR. EXIT
	Summary Sheet	Units					
Tract No.	Medical-Dental Office Building (720)	161.12	6,373	293	78	116	313
Tract No.	General Office Building (710)	56.20	856	104	14	24	118
Tr. 4-8 & 10	Shopping Center (820)	28.70	3,017	45	29	135	141
Tract 2	High Turnover (Sit-Down) Restaurant (932)	4.60	585	28	25	30	21
Tract 9	Gasoline / Service Station w/ Convenience Market (945)	12	1,953	61	61	80	80
Tract 3	Drive-In Bank (912)	2	279	11	8	27	28
	Subtotal		**13,063**	**542**	**215**	**412**	**701**
	Office / Medical Office Trips		**7,229**	**397**	**92**	**140**	**431**
	Retail Commercial Trips		**5,834**	**145**	**123**	**272**	**270**
	Pass-by Reduction for Commercial Trips	30%	(1,750)	(44)	(37)	(82)	(81)
	Adjusted Retail Commercial Trips		**4,084**	**101**	**86**	**190**	**189**

Note: All Units are 1,000's S.F. except Gasoline / Service Station is number of fueling positions and Drive-in Bank is number of windows.

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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					
Medical-Dental Office Building (720)	***161.12***	6,373	293	78	116	313
	1,000 S.F.					

ITE Trip Generation Equations:

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

T = ***40.89*** **(X) +** ***-214.97***

50% Enter, ***50%*** Exit

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

T = ***2.3*** **(X) +** ***0***

79% Enter, ***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) +** ***1.59***

27% Enter, ***73%*** Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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

USE (ITE CODE)		24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		GROSS	ENTER	EXIT	ENTER	EXIT
	Units					
General Office Building (710)	*56.20*	856	104	14	24	118
	1,000 S.F.					

ITE Trip Generation Equations:

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

Ln(T) = *0.77* Ln(X) + *3.65*

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) + *1.55*

88% Enter, *12%* Exit

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

T = *1.12* (X) + *78.81*

17% Enter, *83%* Exit

Comments:
Tract No.

Based on ITE Trip Generation Manual - 8th Edition

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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					
Shopping Center (820)	*28.70*	3,017	45	29	135	141
	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) = *0.59* 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:
Tr. 4-8 & 10

Based on ITE Trip Generation Manual - 8th Edition

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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

USE (ITE CODE)		24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		GROSS	ENTER	EXIT	ENTER	EXIT
	Units					
High Turnover (Sit-Down) Restaurant (932)	*4.60*	585	28	25	30	21
	1,000 S.F.					

ITE Trip Generation Equations:

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

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

50% Enter, *50%* Exit

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

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

52% Enter, *48%* Exit

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

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

59% Enter, *41%* Exit

Comments:
Tract 2

Based on ITE Trip Generation Manual - 8th Edition

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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					
Gasoline / Service Station w/ Convenience Market (945)	***12.00***	1,953	61	61	80	80
	Fueling Positions					

ITE Trip Generation Equations:

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

T = ***162.78*** (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 = ***10.16*** (X) + ***0***
50% Enter, ***50%*** 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 = ***13.38*** (X) + ***0***
50% Enter, ***50%*** Exit

Comments:
Tract 9

Based on ITE Trip Generation Manual - 8th Edition

X-Ray Associates (19th Ave. / Unser Blvd.) - Rio Rancho

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

USE (ITE CODE)		24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		GROSS	ENTER	EXIT	ENTER	EXIT
	Units					
Drive-In Bank (912)	*2.00*	279	11	8	27	28
	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)

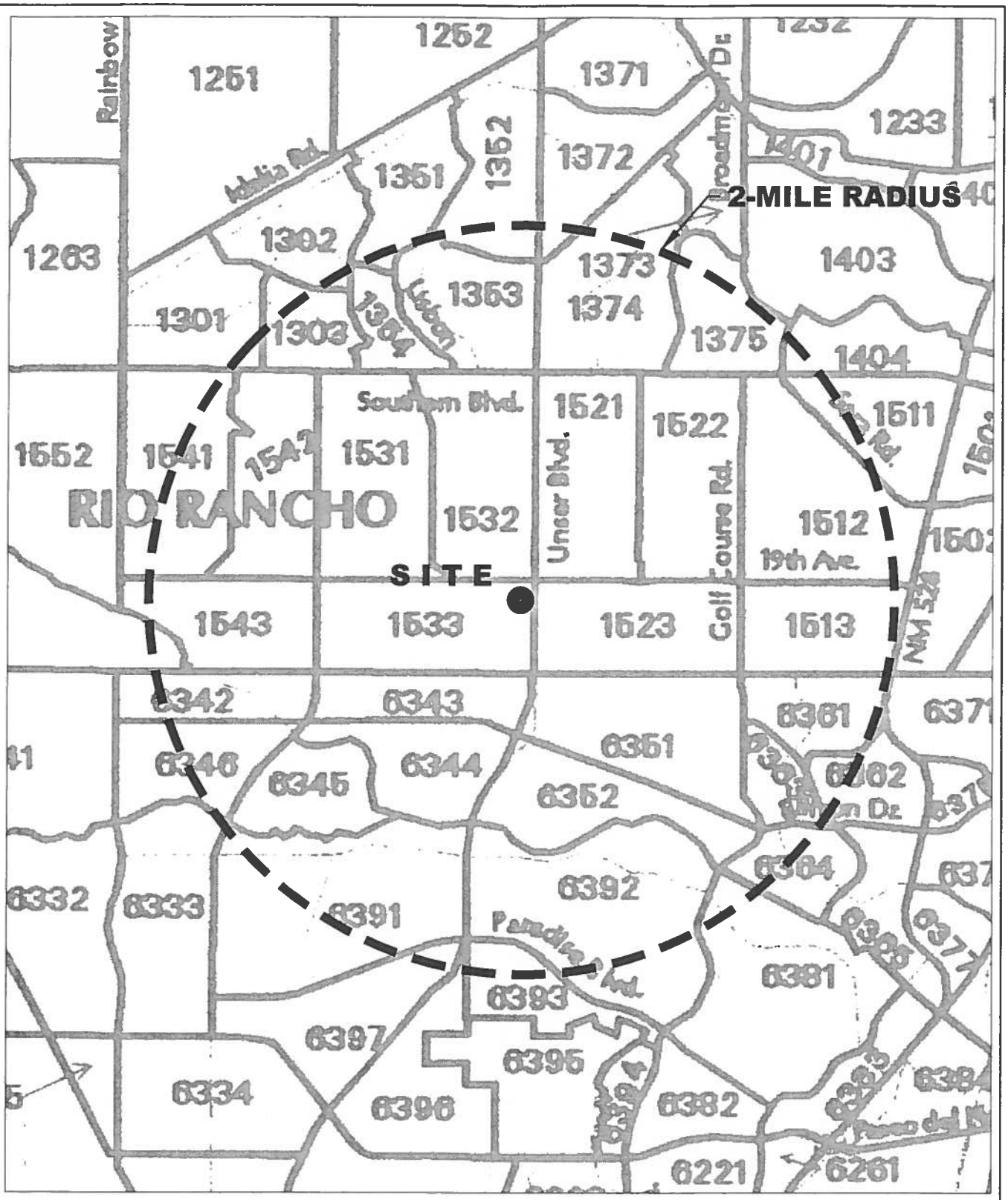
T = *9.44* (X) + *0*
58% Enter, *42%* Exit

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 3

Based on ITE Trip Generation Manual - 8th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP

X-Ray Associates of NM (Westside Blvd / Unser Blvd)

Trip Distribution Table

X-Ray Associates of New Mexico

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

							(UN) Unser Blvd North			(SE) Southern Blvd East			(CE) Cabezon Blvd East		
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
		2004	2030	2012											
Boundary Specified on DASZ Map															
1301	5%	2088	1998	2,060	103	0.32%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1302	5%	946	910	935	47	0.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1303	85%	837	775	818	695	2.16%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1351	5%	820	1174	929	46	0.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1352	10%	1431	1469	1,443	144	0.45%	100%	0.45%	144	0%	0.00%	0	0%	0.00%	0
1353	100%	2354	2214	2,311	2,311	7.17%	50%	3.58%	1,156	0%	0.00%	0	0%	0.00%	0
1354	100%	659	617	646	646	2.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1372	5%	1873	1799	1,850	93	0.29%	100%	0.29%	93	0%	0.00%	0	0%	0.00%	0
1374	60%	3424	3198	3,354	2,012	6.24%	50%	3.12%	1,006	50%	3.12%	1,006	0%	0.00%	0
1375	85%	1230	1195	1,219	1,036	3.21%	0%	0.00%	0	100%	3.21%	1,036	0%	0.00%	0
1511	15%	926	910	921	138	0.43%	0%	0.00%	0	100%	0.43%	138	0%	0.00%	0
1512	90%	2037	1969	2,016	1,814	5.63%	0%	0.00%	0	50%	2.81%	907	0%	0.00%	0
1513	95%	995	985	992	942	2.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1521	100%	0	3465	1,066	1,066	3.31%	0%	0.00%	0	0%	0.00%	0	100%	3.31%	1,066
1522	100%	46	2384	765	765	2.37%	0%	0.00%	0	50%	1.19%	383	50%	1.19%	383
1523	100%	9	1072	336	336	1.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1531	100%	338	713	453	453	1.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1532	100%	220	406	277	277	0.86%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1533	100%	0	324	100	100	0.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1541	50%	5	233	75	38	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1542	100%	57	200	101	101	0.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1543	95%	0	206	63	60	0.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6342	80%	0	1194	367	294	0.91%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6343	100%	1184	2122	1,473	1,473	4.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6344	100%	2098	2065	2,088	2,088	6.48%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6345	100%	968	1745	1,207	1,207	3.74%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6346	55%	0	1272	391	215	0.67%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6351	100%	2475	3009	2,639	2,639	8.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6352	100%	2310	2326	2,315	2,315	7.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6361	100%	1355	1255	1,324	1,324	4.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6362	25%	1984	3354	2,406	602	1.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6363	100%	767	760	765	765	2.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6364	40%	1446	1389	1,428	571	1.77%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6391	60%	3639	5783	4,299	2,579	8.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6392	80%	3664	3717	3,680	2,944	9.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
				47,112	32,239	100.00%			2,399			3,470			1,449
									7.44%			10.76%			4.49%

Trip Distribution Table

X-Ray Associates of New Mexico

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

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

							(WE) Westside Blvd East			(ME) McMahon Blvd East			(US) Unser Blvd 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
		2004	2030	2012											
Boundary Specified on DASZ Map															
1301	5%	2088	1998	2,060	103	0.32%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1302	5%	946	910	935	47	0.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1303	85%	837	775	818	695	2.16%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1351	5%	820	1174	929	46	0.14%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1352	10%	1431	1469	1,443	144	0.45%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1353	100%	2354	2214	2,311	2,311	7.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1354	100%	659	617	646	646	2.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1372	5%	1873	1799	1,850	93	0.29%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1374	60%	3424	3198	3,354	2,012	6.24%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1375	85%	1230	1195	1,219	1,036	3.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1511	15%	926	910	921	138	0.43%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1512	90%	2037	1969	2,016	1,814	5.63%	50%	2.81%	907	0%	0.00%	0	0%	0.00%	0
1513	95%	995	985	992	942	2.92%	100%	2.92%	942	0%	0.00%	0	0%	0.00%	0
1521	100%	0	3465	1,066	1,066	3.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1522	100%	46	2384	765	765	2.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1523	100%	9	1072	336	336	1.04%	100%	1.04%	336	0%	0.00%	0	0%	0.00%	0
1531	100%	338	713	453	453	1.41%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1532	100%	220	406	277	277	0.86%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1533	100%	0	324	100	100	0.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1541	50%	5	233	75	38	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1542	100%	57	200	101	101	0.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1543	95%	0	206	63	60	0.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6342	80%	0	1194	367	294	0.91%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6343	100%	1184	2122	1,473	1,473	4.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6344	100%	2098	2065	2,088	2,088	6.48%	0%	0.00%	0	0%	0.00%	0	50%	3.24%	1,044
6345	100%	968	1745	1,207	1,207	3.74%	0%	0.00%	0	0%	0.00%	0	50%	1.87%	604
6346	55%	0	1272	391	215	0.67%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6351	100%	2475	3009	2,639	2,639	8.19%	0%	0.00%	0	100%	8.19%	2,639	0%	0.00%	0
6352	100%	2310	2326	2,315	2,315	7.18%	0%	0.00%	0	75%	5.39%	1,736	25%	1.80%	579
6361	100%	1355	1255	1,324	1,324	4.11%	100%	4.11%	1,324	0%	0.00%	0	0%	0.00%	0
6362	25%	1984	3354	2,406	602	1.87%	100%	1.87%	602	0%	0.00%	0	0%	0.00%	0
6363	100%	767	760	765	765	2.37%	100%	2.37%	765	0%	0.00%	0	0%	0.00%	0
6364	40%	1446	1389	1,428	571	1.77%	50%	0.89%	286	50%	0.89%	286	0%	0.00%	0
6391	60%	3639	5783	4,299	2,579	8.00%	0%	0.00%	0	0%	0.00%	0	100%	8.00%	2,579
6392	80%	3664	3717	3,680	2,944	9.13%	0%	0.00%	0	0%	0.00%	0	100%	9.13%	2,944
				47,112	32,239	100.00%			5,162			4,661			7,749
									16.01%			14.46%			24.04%

Trip Distribution Table

X-Ray Associates of New Mexico

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

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

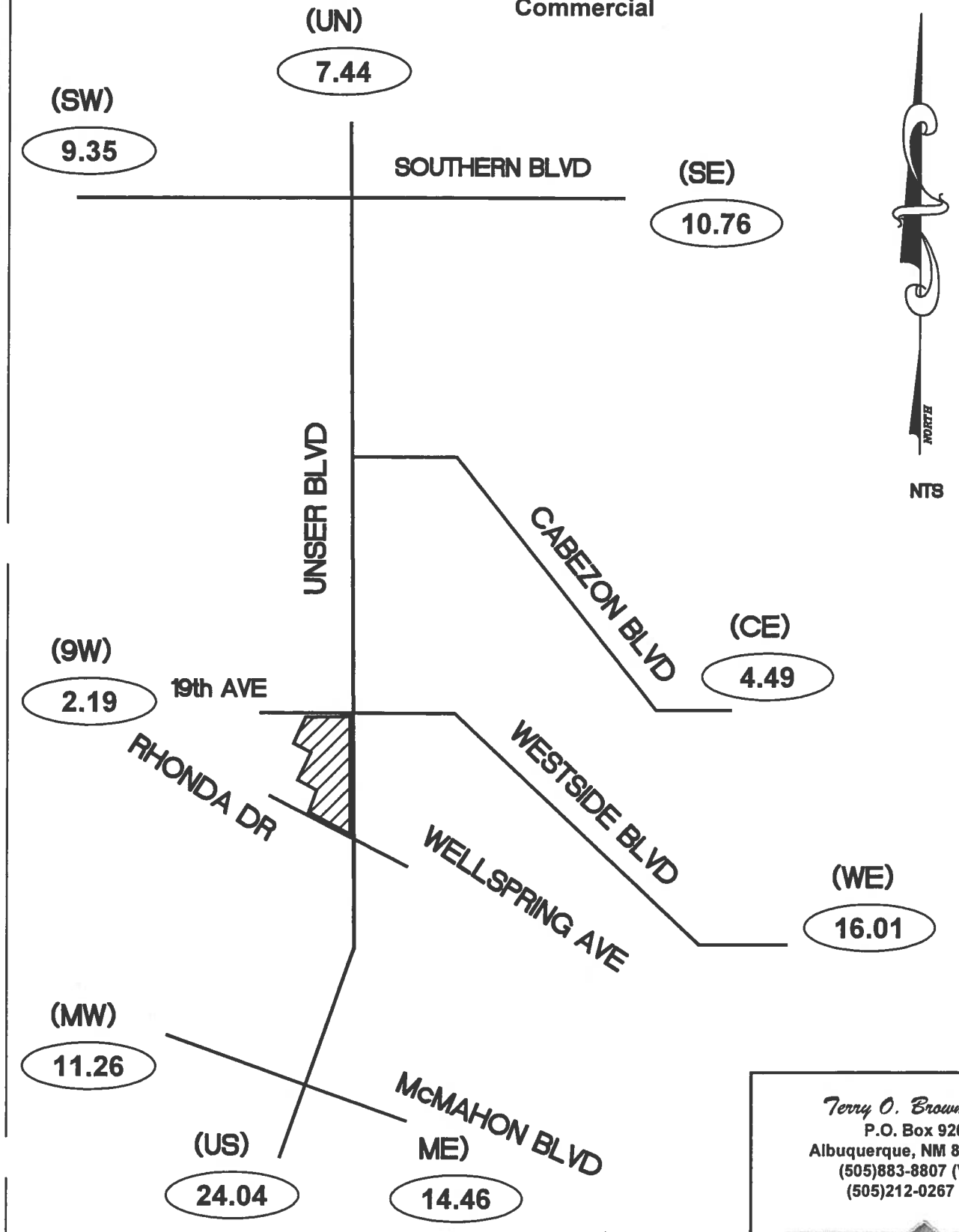
							(MW) McMahon Blvd West			(9W) 19th St West			(SW) Southern Blvd West		
DASZ #	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2004	2030	2012											
Boundary Specified on DASZ Map															
1301	5%	2088	1998	2,060	103	0.32%	0%	0.00%	0	0%	0.00%	0	100%	0.32%	103
1302	5%	946	910	935	47	0.15%	0%	0.00%	0	0%	0.00%	0	100%	0.15%	47
1303	85%	837	775	818	695	2.16%	0%	0.00%	0	0%	0.00%	0	100%	2.16%	695
1351	5%	820	1174	929	46	0.14%	0%	0.00%	0	0%	0.00%	0	100%	0.14%	46
1352	10%	1431	1469	1,443	144	0.45%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1353	100%	2354	2214	2,311	2,311	7.17%	0%	0.00%	0	0%	0.00%	0	50%	3.58%	1,156
1354	100%	659	617	646	646	2.00%	0%	0.00%	0	0%	0.00%	0	100%	2.00%	646
1372	5%	1873	1799	1,850	93	0.29%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1374	60%	3424	3198	3,354	2,012	6.24%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1375	85%	1230	1195	1,219	1,036	3.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1511	15%	926	910	921	138	0.43%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1512	90%	2037	1969	2,016	1,814	5.63%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1513	95%	995	985	992	942	2.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1521	100%	0	3465	1,066	1,066	3.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1522	100%	46	2384	765	765	2.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1523	100%	9	1072	336	336	1.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
1531	100%	338	713	453	453	1.41%	0%	0.00%	0	75%	1.05%	340	25%	0.35%	113
1532	100%	220	406	277	277	0.86%	0%	0.00%	0	75%	0.64%	208	25%	0.21%	69
1533	100%	0	324	100	100	0.31%	0%	0.00%	0	100%	0.31%	100	0%	0.00%	0
1541	50%	5	233	75	38	0.12%	0%	0.00%	0	0%	0.00%	0	100%	0.12%	38
1542	100%	57	200	101	101	0.31%	0%	0.00%	0	0%	0.00%	0	100%	0.31%	101
1543	95%	0	206	63	60	0.19%	0%	0.00%	0	100%	0.19%	60	0%	0.00%	0
6342	80%	0	1194	367	294	0.91%	100%	0.91%	294	0%	0.00%	0	0%	0.00%	0
6343	100%	1184	2122	1,473	1,473	4.57%	100%	4.57%	1,473	0%	0.00%	0	0%	0.00%	0
6344	100%	2098	2065	2,088	2,088	6.48%	50%	3.24%	1,044	0%	0.00%	0	0%	0.00%	0
6345	100%	968	1745	1,207	1,207	3.74%	50%	1.87%	604	0%	0.00%	0	0%	0.00%	0
6346	55%	0	1272	391	215	0.67%	100%	0.67%	215	0%	0.00%	0	0%	0.00%	0
6351	100%	2475	3009	2,639	2,639	8.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6352	100%	2310	2326	2,315	2,315	7.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6361	100%	1355	1255	1,324	1,324	4.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6362	25%	1984	3354	2,406	602	1.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6363	100%	767	760	765	765	2.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6364	40%	1446	1389	1,428	571	1.77%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6391	60%	3639	5783	4,299	2,579	8.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6392	80%	3664	3717	3,680	2,944	9.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
				47,112	32,239	100.00%			3,630			708			3,014
									11.26%			2.19%			9.35%

X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Distribution Map (%)

Commercial



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

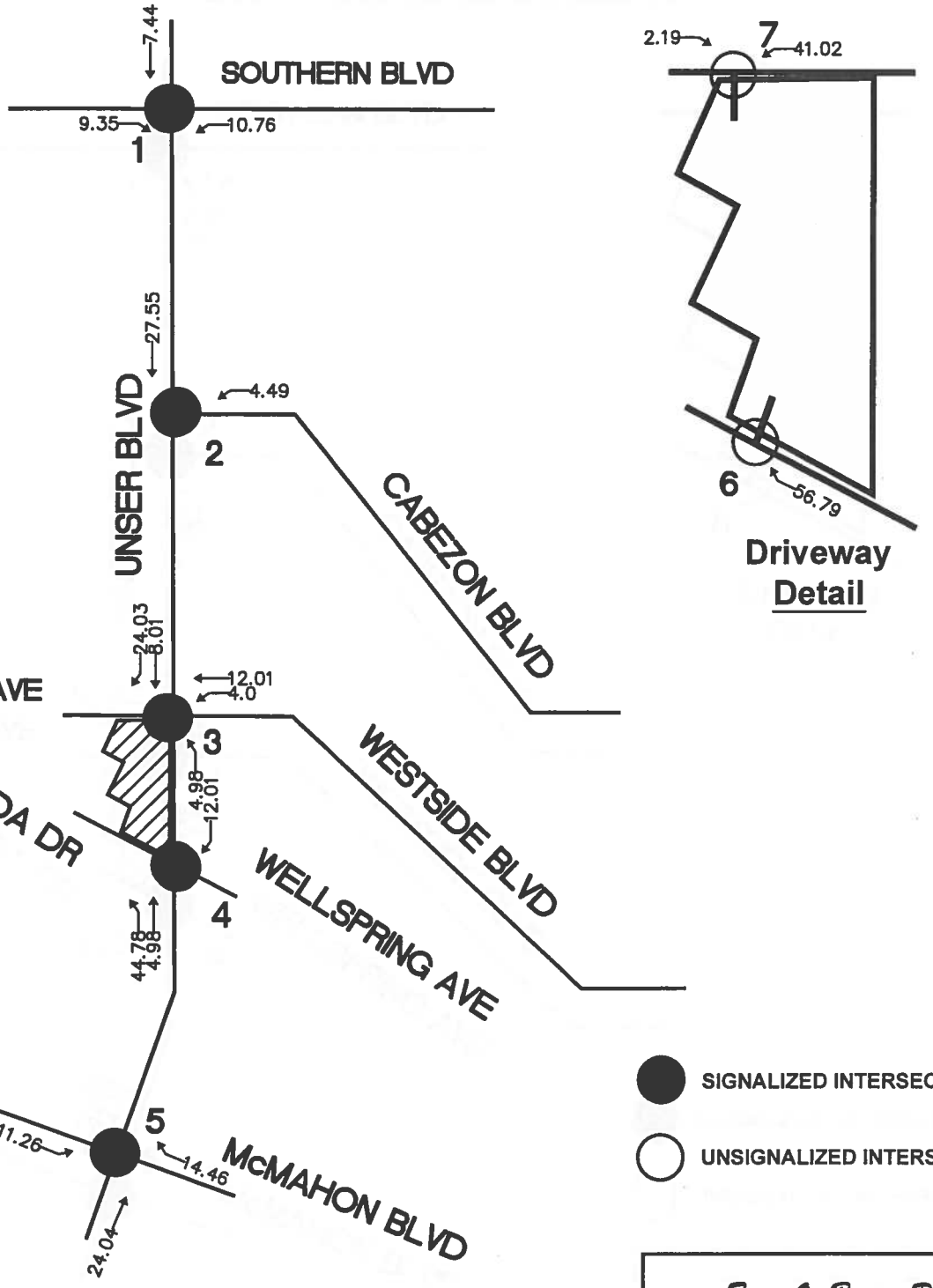
X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Assignments (% Entering) - Commercial

Case 'Y' - with Rhonda Dr extension

NTS



Driveway Detail

SIGNALIZED INTERSECTION

UNSIGNALIZED INTERSECTION

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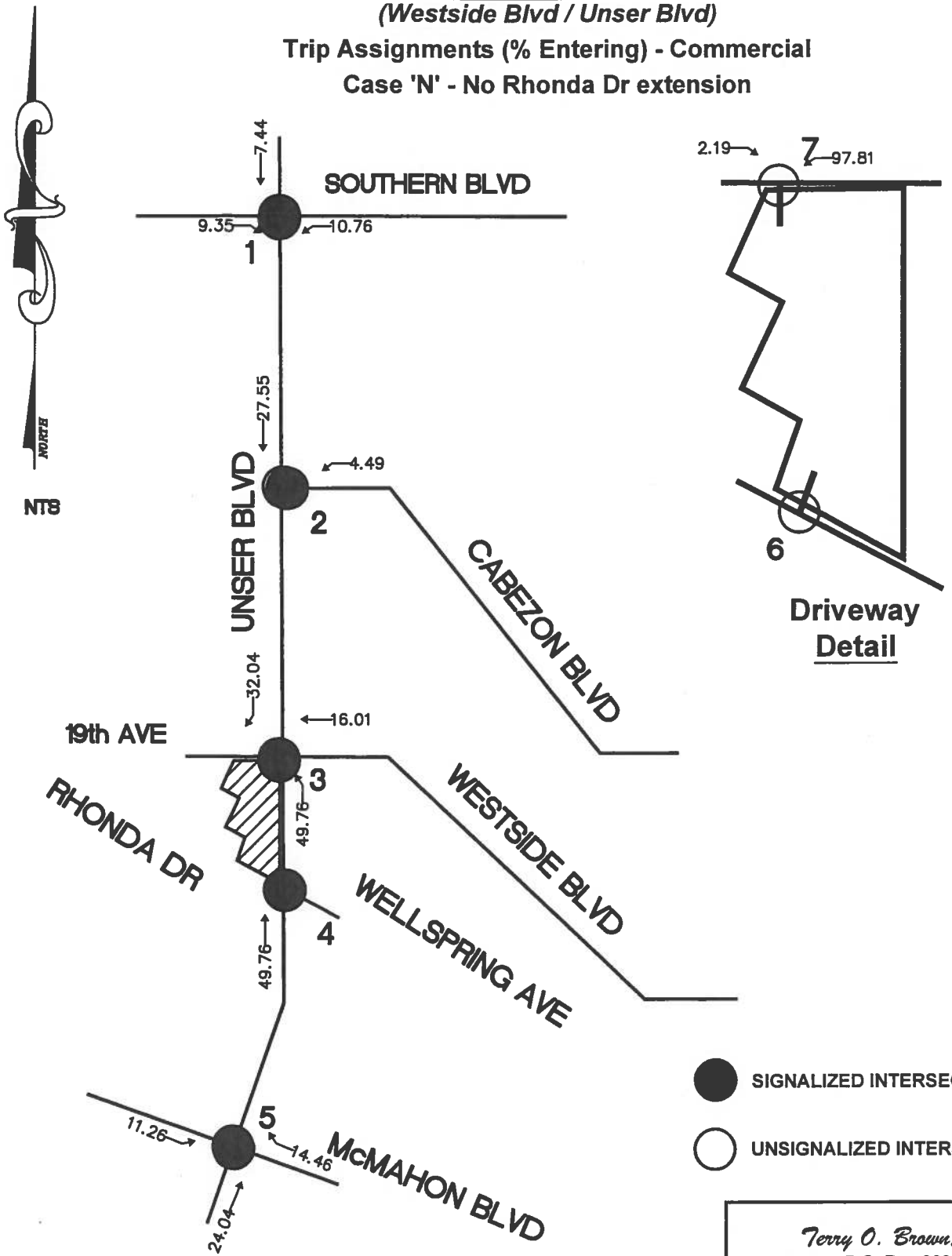
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)

X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Assignments (% Entering) - Commercial

Case 'N' - No Rhonda Dr extension



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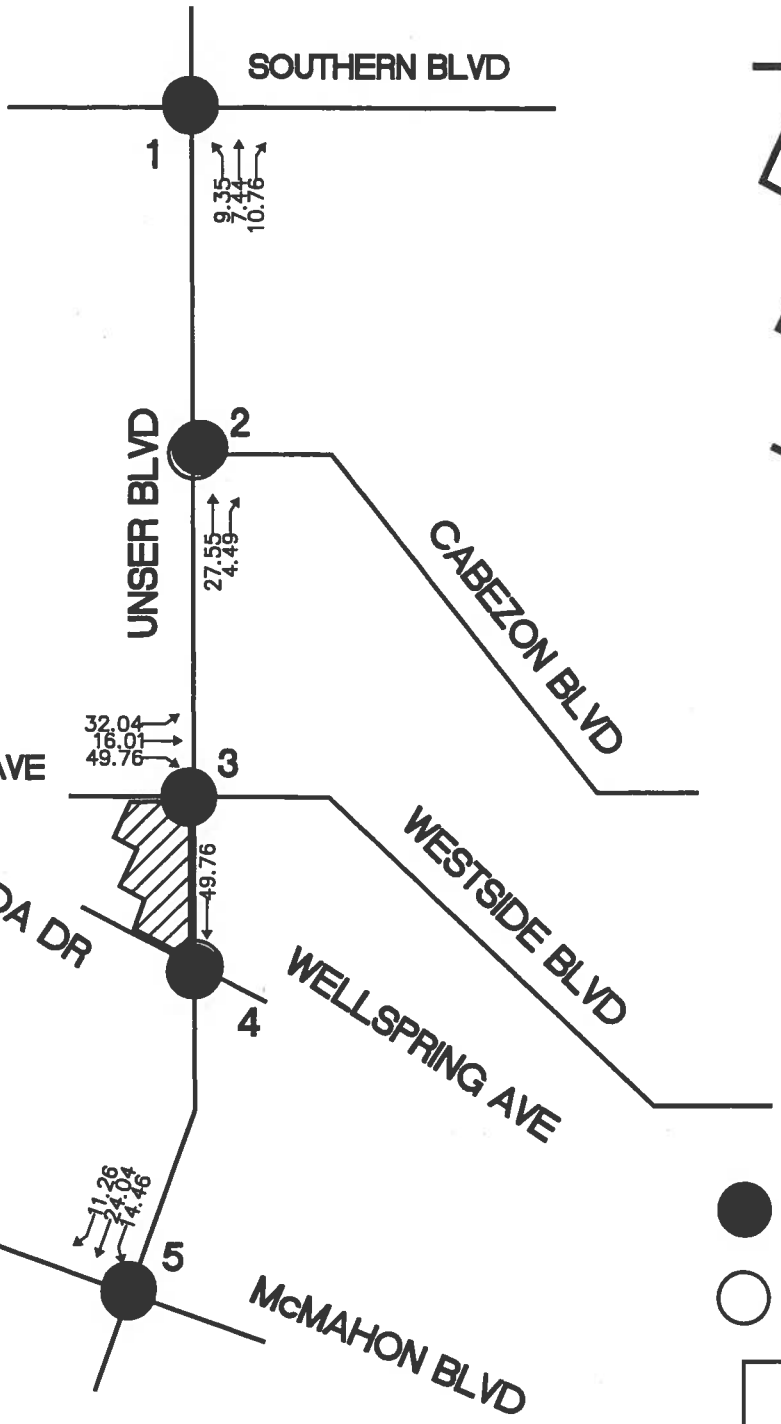
X-Ray Associates of NM

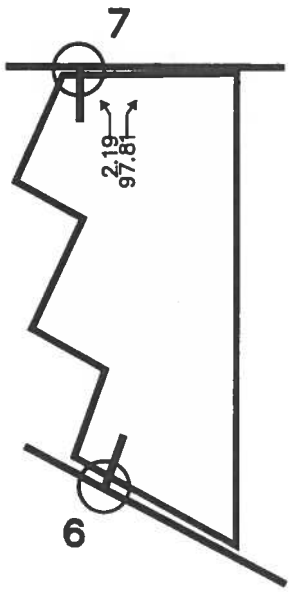
(Westside Blvd / Unser Blvd)

Trip Assignments (% Exiting) - Commercial

Case 'N' - No Rhonda Dr extension

NTS





Driveway Detail

SIGNALIZED INTERSECTION

UNSIGNALIZED INTERSECTION

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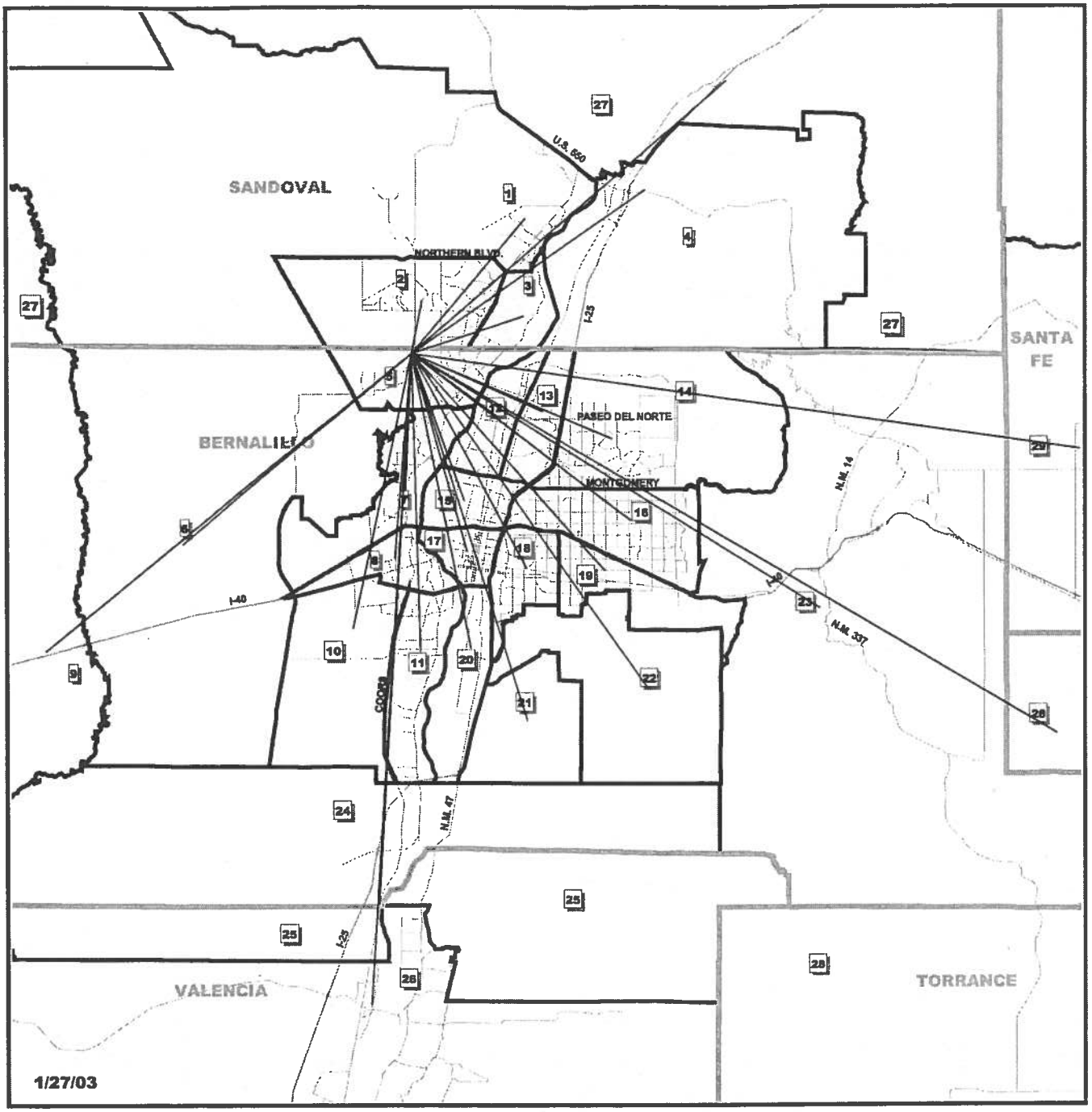


Figure 6

Subareas of the MRCOG Region

22 Subarea Identification Number

Subarea boundaries extend to county boundary where full extent of subarea not shown except for Subarea 29 which only includes southern Santa Fe County.

Mid-Region
Council of Governments
317 Commercial NE, Suite 104
Albuquerque, NM 87102
505-247-1750

XRay Associates of New Mexico
(Westside Blvd / Unser Blvd)
Trip Distribution Subarea Map

Trip Distribution Table

X-Ray Associates of New Mexico

Sub Area Population Data:
For determination of Trip Distribution for Proposed **Office Development Trips**

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

									(UN) Unser Blvd North			(SE) Southern Blvd East			(CE) Cabezon Blvd East		
Sub Area I.D.#	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	Population in Study	Dist. (Mi.)	Population / Distance	% Population / Distance	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population
		2004	2030	2012													
1	100%	26,972	39,738	30,900	30,900	7.0	4,414	3.92%	0%	0.00%	0	25%	0.98%	1,104	0%	0.00%	0
2*	100%	39,348	40,610	39,736	39,736	1.6	24,835	22.07%	22%	4.96%	5,580	31%	6.79%	7,639	3%	0.72%	815
3	100%	7,865	8,728	8,131	8,131	4.8	1,694	1.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
4	100%	13,387	14,936	13,864	13,864	11.8	1,175	1.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5	100%	35,968	44,203	38,502	38,502	1.9	20,264	18.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6	100%	2,784	3,950	3,143	3,143	13.2	238	0.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7	100%	48,565	59,615	51,965	51,965	6.6	7,873	7.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8	100%	27,546	28,553	27,856	27,856	9.5	2,932	2.61%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
9	100%	1,678	1,888	1,743	1,743	20.6	85	0.08%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
10	100%	39,532	4,822	28,852	28,852	12.7	2,272	2.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
11	100%	32,051	33,202	32,405	32,405	13.4	2,418	2.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
12	100%	16,144	16,146	16,145	16,145	5.0	3,229	2.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
13	100%	8,715	10,146	9,155	9,155	6.4	1,431	1.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
14	100%	93,104	94,279	93,466	93,466	9.6	9,736	8.65%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
15	100%	24,691	25,262	24,867	24,867	7.3	3,406	3.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
16	100%	108,882	108,353	108,719	108,719	12.2	8,911	7.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
17	100%	20,920	21,196	21,005	21,005	9.4	2,235	1.99%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
18	100%	42,078	41,670	41,952	41,952	11.0	3,814	3.39%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
19	100%	59,027	58,888	58,984	58,984	12.9	4,572	4.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
20	100%	9,482	9,699	9,549	9,549	13.5	707	0.63%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
21	100%	6	6	6	6	17.1	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
22	100%	4,231	3,629	4,046	4,046	18.1	224	0.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
23	100%	18,140	20,390	18,832	18,832	21.0	897	0.80%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
24	100%	2,393	2,554	2,443	2,443	21.9	112	0.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
25	100%	1,009	1,062	1,025	1,025	24.3	42	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
26	100%	75,506	85,654	78,628	78,628	28.6	2,749	2.44%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
27	100%	20,955	22,276	21,361	21,361	17.3	1,235	1.10%	100%	1.10%	1,235	0%	0.00%	0	0%	0.00%	0
28	100%	19,524	21,690	20,190	20,190	32.5	621	0.55%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
29	100%	11,360	13,771	12,102	12,102	29.0	417	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
		811,863	836,916	819,572	819,572		112,539	100.00%		6.06%	6,815		7.77%	8,743		0.72%	815
											6.06%			7.77%			0.72%

* - Subarea in which the site it located.

Trip Distribution Table

X-Ray Associates of New Mexico

Sub Area Population Data:
For determination of Trip Distribution for Proposed **Office Development Trips**

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

								(WE) Westside Blvd East			(ME) McMahon Blvd East			(US) Unser Blvd South		
Sub Area I.D.#	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	Population in Study	Dist. (Mi.)	Population / Distance	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population
		2004	2030	2012												
1	100%	26,972	39,738	30,900	30,900	7.0	4,414	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
2*	100%	39,348	40,610	39,736	39,736	1.6	24,835	23%	4.99%	5,613	0%	0.00%	0	0%	0.00%	0
3	100%	7,865	8,728	8,131	8,131	4.8	1,694	100%	1.51%	1,694	0%	0.00%	0	0%	0.00%	0
4	100%	13,387	14,936	13,864	13,864	11.8	1,175	100%	1.04%	1,175	0%	0.00%	0	0%	0.00%	0
5	100%	35,968	44,203	38,502	38,502	1.9	20,264	40%	7.20%	8,106	10%	1.80%	2,026	40%	7.20%	8,106
6	100%	2,784	3,950	3,143	3,143	13.2	238	0%	0.00%	0	0%	0.00%	0	100%	0.21%	238
7	100%	48,565	59,615	51,965	51,965	6.6	7,873	0%	0.00%	0	0%	0.00%	0	100%	7.00%	7,873
8	100%	27,546	28,553	27,856	27,856	9.5	2,932	0%	0.00%	0	0%	0.00%	0	100%	2.61%	2,932
9	100%	1,678	1,888	1,743	1,743	20.6	85	0%	0.00%	0	0%	0.00%	0	100%	0.08%	85
10	100%	39,532	4,822	28,852	28,852	12.7	2,272	0%	0.00%	0	0%	0.00%	0	100%	2.02%	2,272
11	100%	32,051	33,202	32,405	32,405	13.4	2,418	0%	0.00%	0	0%	0.00%	0	100%	2.15%	2,418
12	100%	16,144	16,146	16,145	16,145	5.0	3,229	0%	0.00%	0	0%	0.00%	0	100%	2.87%	3,229
13	100%	8,715	10,146	9,155	9,155	6.4	1,431	0%	0.00%	0	0%	0.00%	0	100%	1.27%	1,431
14	100%	93,104	94,279	93,466	93,466	9.6	9,736	0%	0.00%	0	0%	0.00%	0	100%	8.65%	9,736
15	100%	24,691	25,262	24,867	24,867	7.3	3,406	0%	0.00%	0	0%	0.00%	0	100%	3.03%	3,406
16	100%	108,882	108,353	108,719	108,719	12.2	8,911	0%	0.00%	0	0%	0.00%	0	100%	7.92%	8,911
17	100%	20,920	21,196	21,005	21,005	9.4	2,235	0%	0.00%	0	0%	0.00%	0	100%	1.99%	2,235
18	100%	42,078	41,670	41,952	41,952	11.0	3,814	0%	0.00%	0	0%	0.00%	0	100%	3.39%	3,814
19	100%	59,027	58,888	58,984	58,984	12.9	4,572	0%	0.00%	0	0%	0.00%	0	100%	4.06%	4,572
20	100%	9,482	9,699	9,549	9,549	13.5	707	0%	0.00%	0	0%	0.00%	0	100%	0.63%	707
21	100%	6	6	6	6	17.1	0	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0
22	100%	4,231	3,629	4,046	4,046	18.1	224	0%	0.00%	0	0%	0.00%	0	100%	0.20%	224
23	100%	18,140	20,390	18,832	18,832	21.0	897	0%	0.00%	0	0%	0.00%	0	100%	0.80%	897
24	100%	2,393	2,554	2,443	2,443	21.9	112	0%	0.00%	0	0%	0.00%	0	100%	0.10%	112
25	100%	1,009	1,062	1,025	1,025	24.3	42	0%	0.00%	0	0%	0.00%	0	100%	0.04%	42
26	100%	75,506	85,654	78,628	78,628	28.6	2,749	0%	0.00%	0	0%	0.00%	0	100%	2.44%	2,749
27	100%	20,955	22,276	21,361	21,361	17.3	1,235	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
28	100%	19,524	21,690	20,190	20,190	32.5	621	0%	0.00%	0	0%	0.00%	0	100%	0.55%	621
29	100%	11,360	13,771	12,102	12,102	29.0	417	0%	0.00%	0	0%	0.00%	0	100%	0.37%	417
		811,863	836,916	819,572	819,572		112,539		14.74%	16,587		1.80%	2,026		59.56%	67,028
										14.74%			1.80%			59.56%

* - Subarea in which the site it located.

Trip Distribution Table

X-Ray Associates of New Mexico

Sub Area Population Data:
For determination of Trip Distribution for Proposed **Office Development Trips**

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

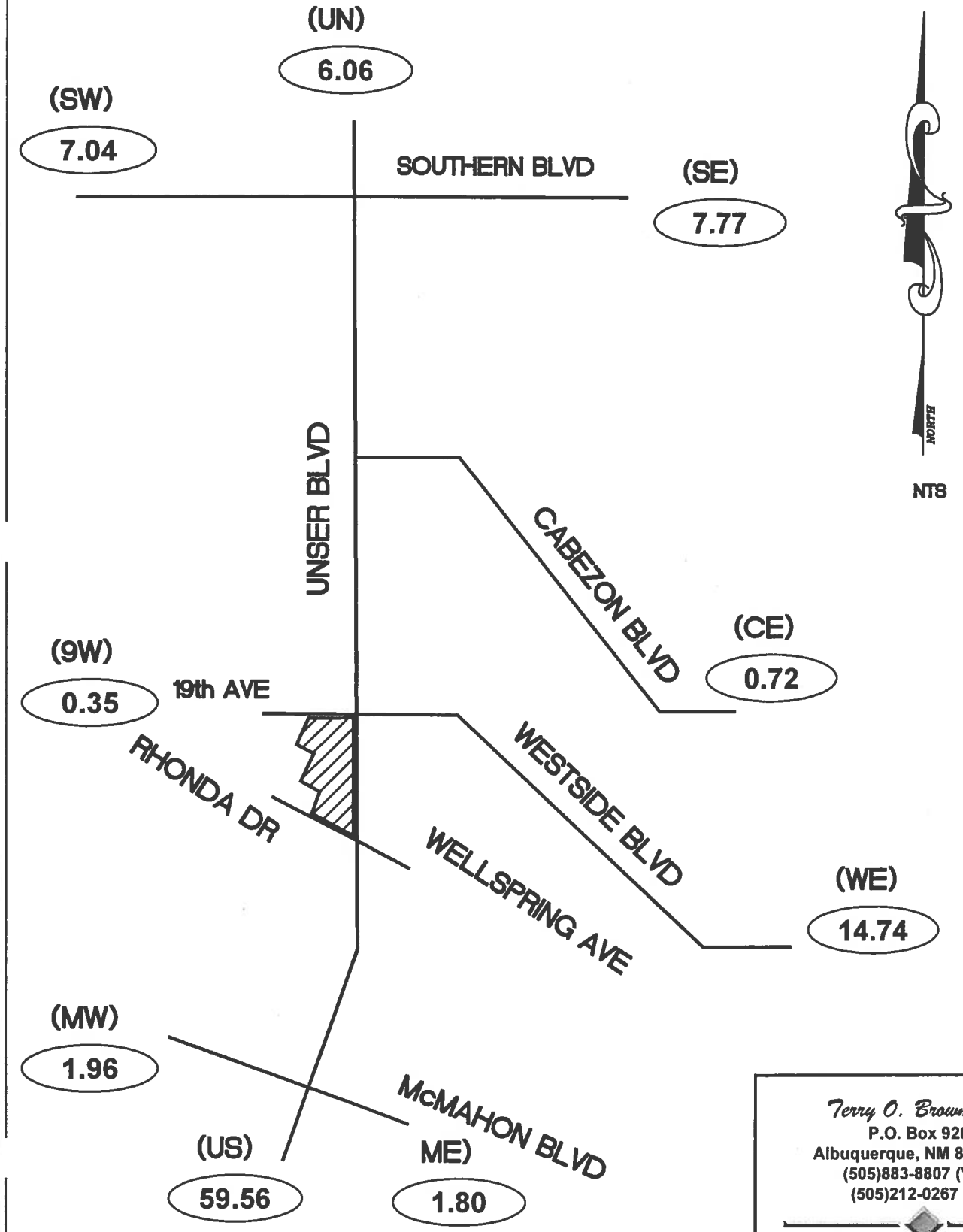
								(MW) McMahon Blvd West			(9W) 19th St West			(SW) Southern Blvd West		
Sub Area I.D.#	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year	Population in Study	Dist. (Mi.)	Population / Distance	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population
		2004	2030	2012												
1	100%	26,972	39,738	30,900	30,900	7.0	4,414	0%	0.00%	0	0%	0.00%	0	75%	2.94%	3,311
2*	100%	39,348	40,610	39,736	39,736	1.6	24,835	1%	0.16%	184	2%	0.35%	397	19%	4.09%	4,607
3	100%	7,865	8,728	8,131	8,131	4.8	1,694	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
4	100%	13,387	14,936	13,864	13,864	11.8	1,175	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5	100%	35,968	44,203	38,502	38,502	1.9	20,264	10%	1.80%	2,026	0%	0.00%	0	0%	0.00%	0
6	100%	2,784	3,950	3,143	3,143	13.2	238	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7	100%	48,565	59,615	51,965	51,965	6.6	7,873	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8	100%	27,546	28,553	27,856	27,856	9.5	2,932	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
9	100%	1,678	1,888	1,743	1,743	20.6	85	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
10	100%	39,532	4,822	28,852	28,852	12.7	2,272	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
11	100%	32,051	33,202	32,405	32,405	13.4	2,418	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
12	100%	16,144	16,146	16,145	16,145	5.0	3,229	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
13	100%	8,715	10,146	9,155	9,155	6.4	1,431	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
14	100%	93,104	94,279	93,466	93,466	9.6	9,736	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
15	100%	24,691	25,262	24,867	24,867	7.3	3,406	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
16	100%	108,882	108,353	108,719	108,719	12.2	8,911	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
17	100%	20,920	21,196	21,005	21,005	9.4	2,235	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
18	100%	42,078	41,670	41,952	41,952	11.0	3,814	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
19	100%	59,027	58,888	58,984	58,984	12.9	4,572	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
20	100%	9,482	9,699	9,549	9,549	13.5	707	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
21	100%	6	6	6	6	17.1	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
22	100%	4,231	3,629	4,046	4,046	18.1	224	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
23	100%	18,140	20,390	18,832	18,832	21.0	897	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
24	100%	2,393	2,554	2,443	2,443	21.9	112	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
25	100%	1,009	1,062	1,025	1,025	24.3	42	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
26	100%	75,506	85,654	78,628	78,628	28.6	2,749	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
27	100%	20,955	22,276	21,361	21,361	17.3	1,235	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
28	100%	19,524	21,690	20,190	20,190	32.5	621	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
29	100%	11,360	13,771	12,102	12,102	29.0	417	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
		811,863	836,916	819,572	819,572		112,539		1.96%	2,210		0.35%	397		7.04%	7,918
										1.96%			0.35%			7.04%

* - Subarea in which the site it located.

X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Distribution Map (%) - Office



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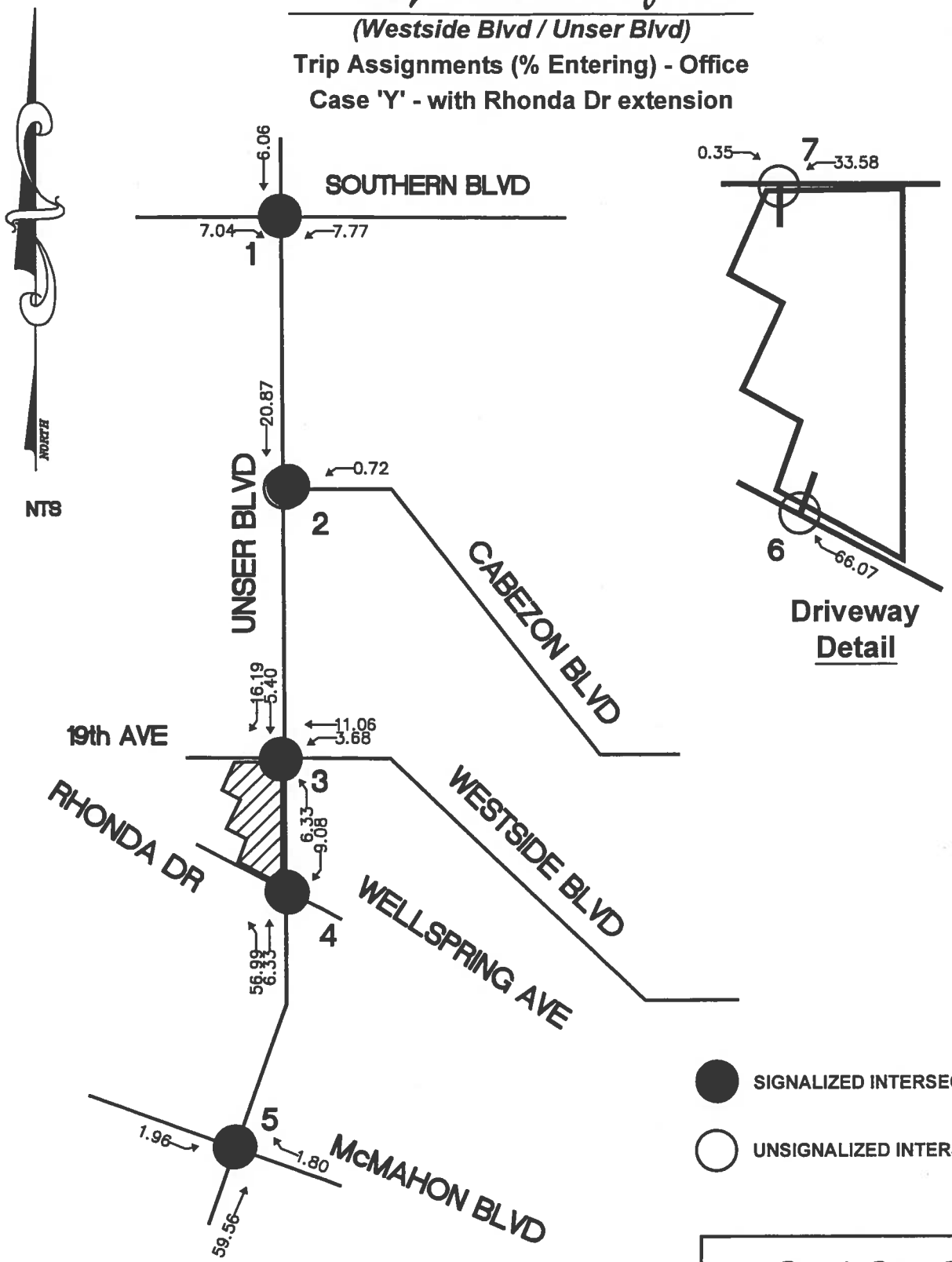
X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Assignments (% Entering) - Office

Case 'Y' - with Rhonda Dr extension



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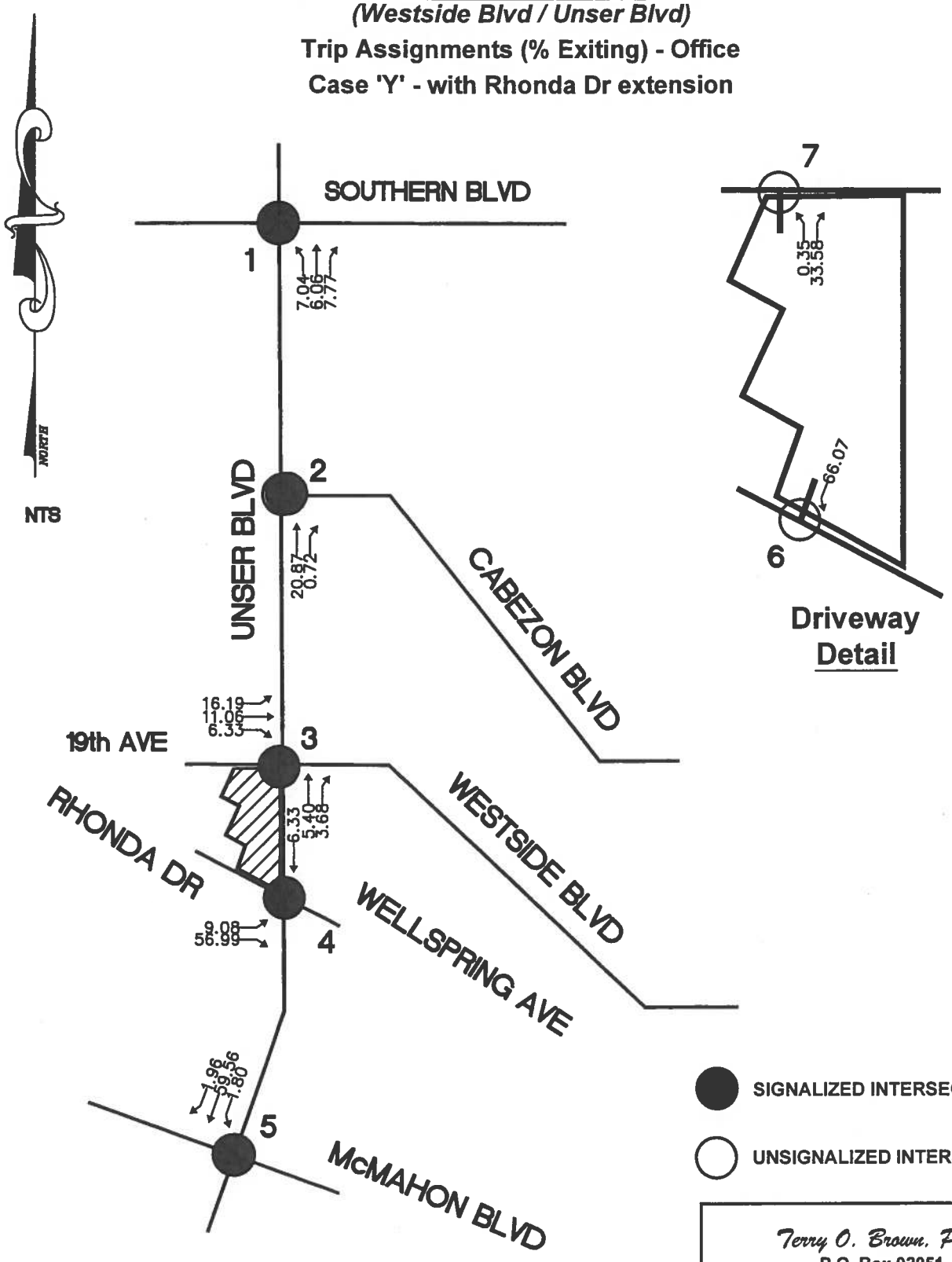
X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Assignments (% Exiting) - Office

Case 'Y' - with Rhonda Dr extension



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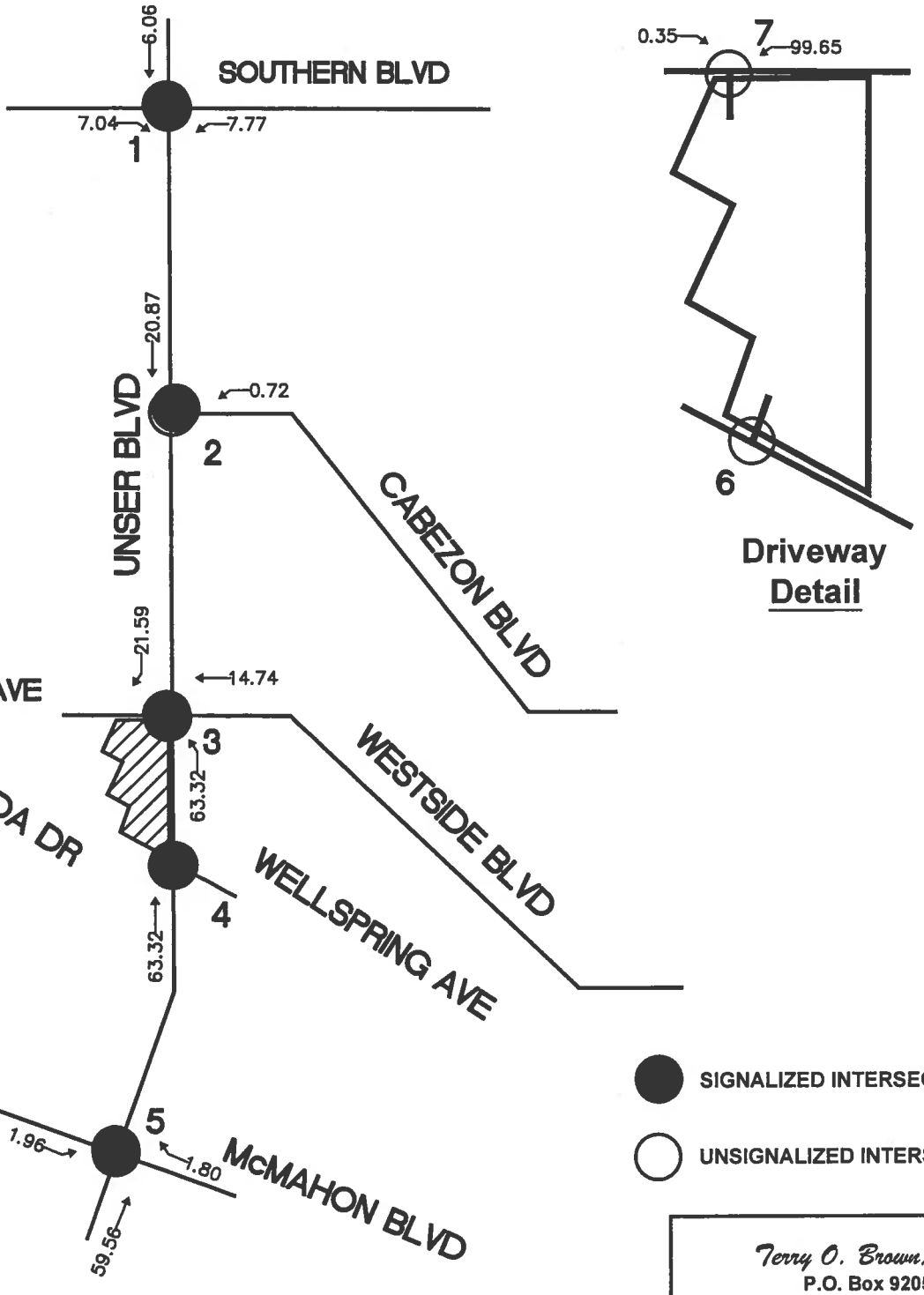
X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Assignments (% Entering) - Office

Case 'N' - No Rhonda Dr extension

NTS



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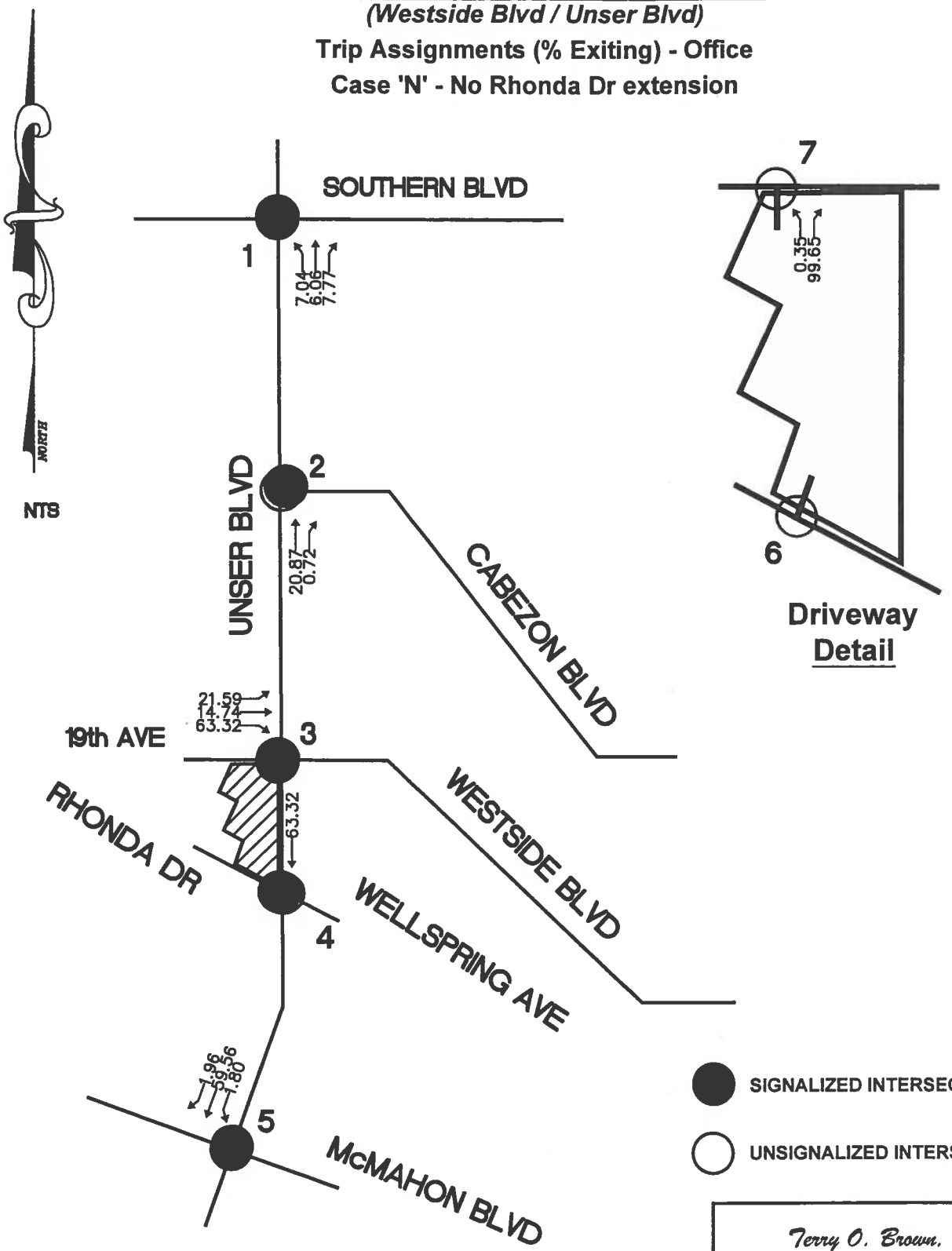
X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Trip Assignments (% Exiting) - Office

Case 'N' - No Rhonda Dr extension



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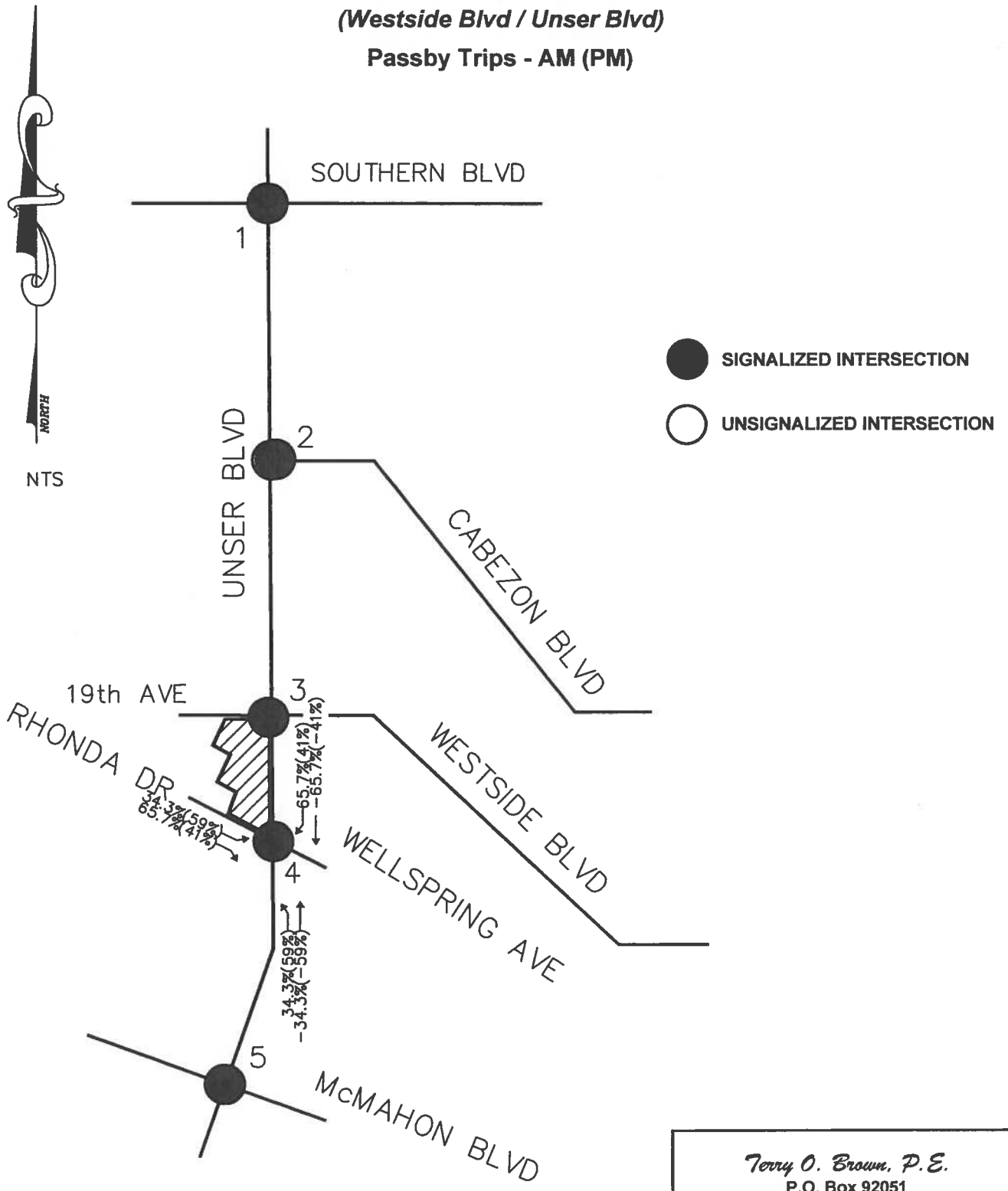
X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Passby Trips - AM (PM)



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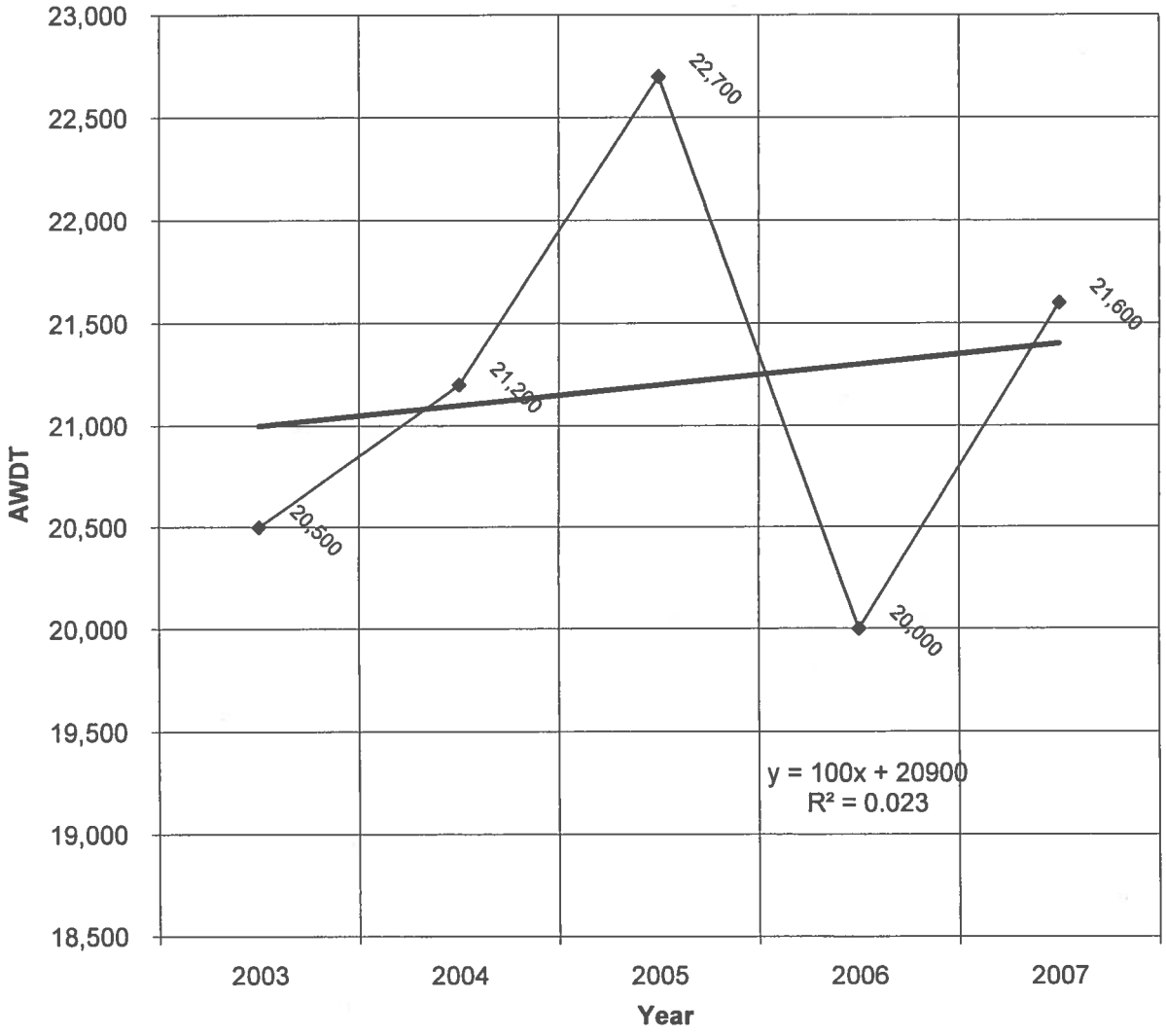
X-Ray Associates of NM (Westside Blvd / Unser Blvd)

Historic Growth Rate Table

Traffic Flows from MRCOG Map

	2003	2004	2005	2006	2007
Unser Blvd North of Southern Blvd	20,500	21,200	22,700	20,000	21,600
Southern Blvd East of Unser Blvd	24,200	25,000	25,900	16,500	16,900
Unser Blvd btwn Southern & Westside	17,500	18,100	18,700	19,100	23,800
Unser Blvd South of Westside Blvd	23,200	24,000	24,900	27,000	27,700
Unser Blvd North of McMahon Blvd	16,100	17,200	17,800	18,200	18,700
McMahon Blvd East of Unser Blvd	14,300	14,800	19,100	19,500	20,000
Unser Blvd South of McMahon Blvd	18,500	25,300	26,200	26,700	27,400
Southern Blvd West of Unser Blvd	18,700	19,400	20,000	24,600	25,200

Historic Growth Chart Unser Blvd North of Southern Blvd (2003-2007)



Annual Increase (Trendline) = 100 veh./day

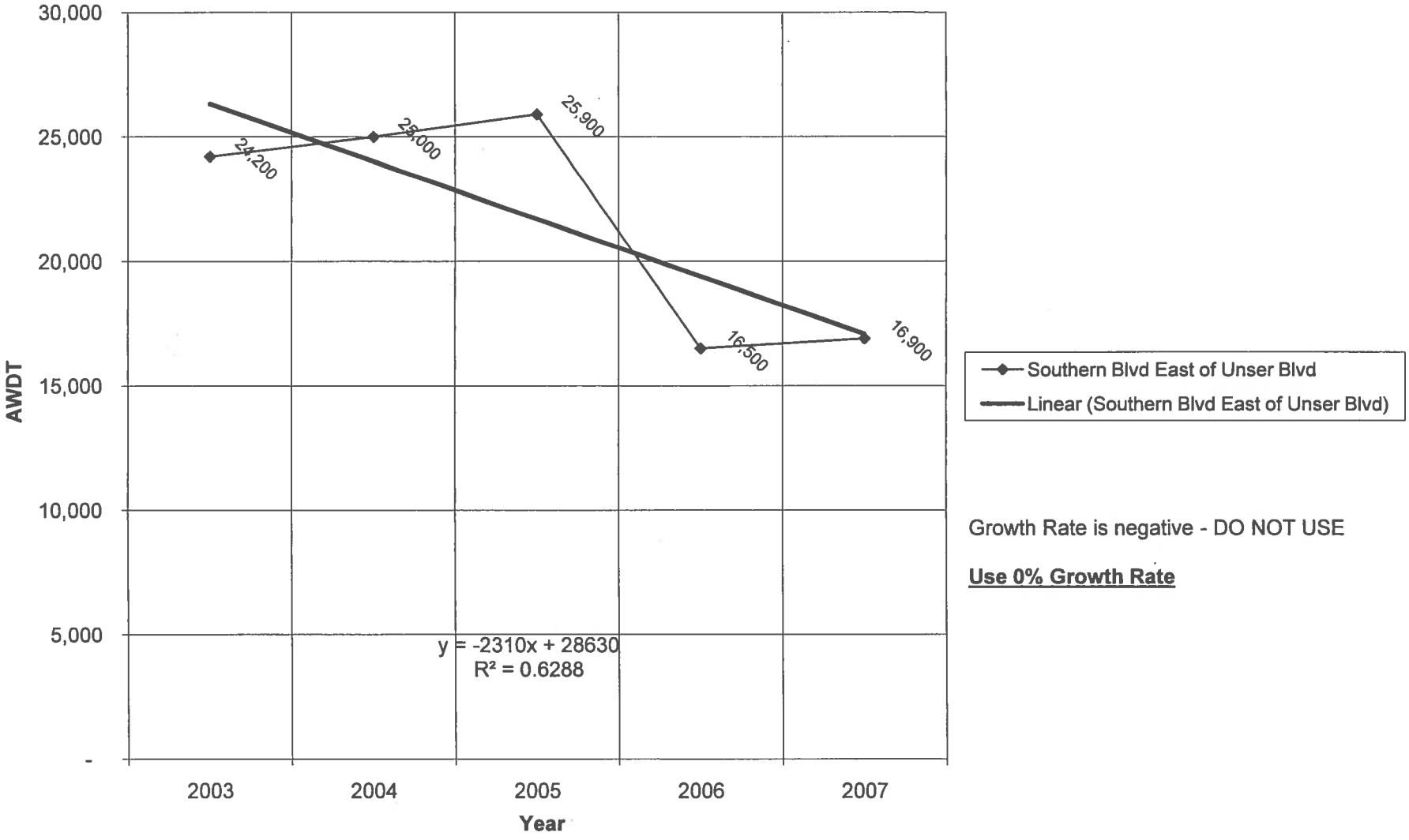
Growth Rate = 100 / 20900

Growth Rate = .0047

Use 0.5% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart Southern Blvd East of Unser Blvd (2003-2007)

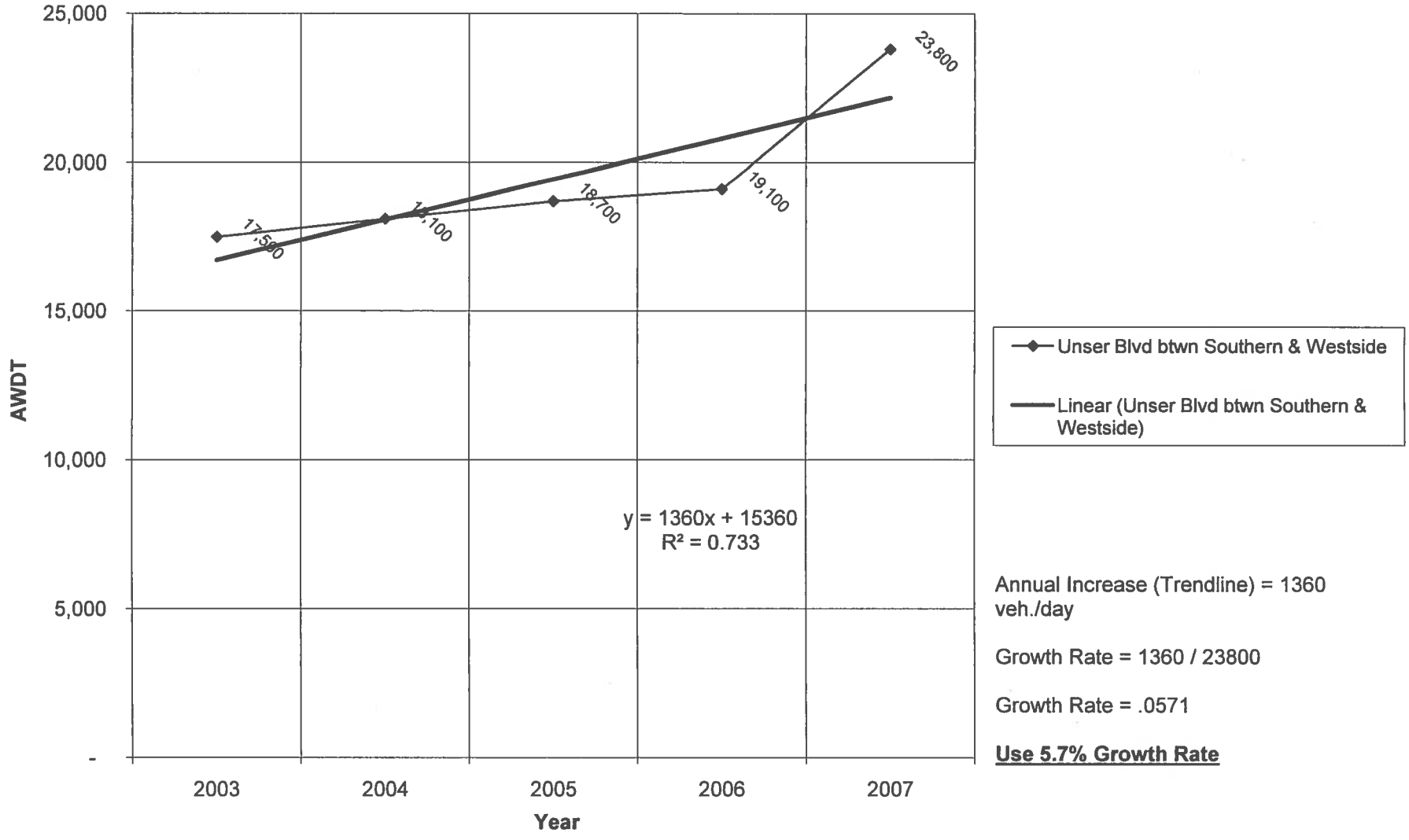


Growth Rate is negative - DO NOT USE

Use 0% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart Unser Blvd btwn Southern & Westside (2003-2007)



Annual Increase (Trendline) = 1360 veh./day

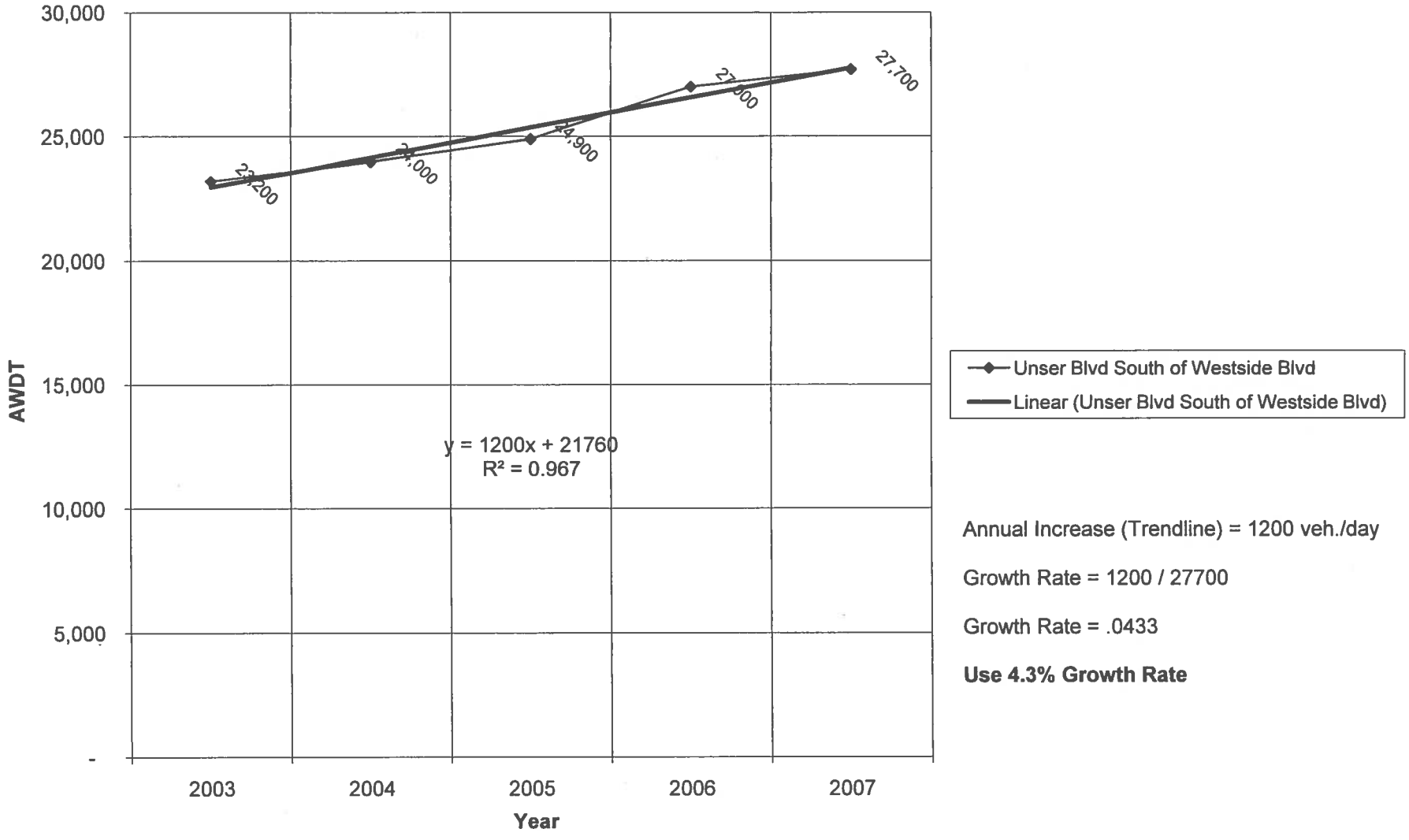
Growth Rate = 1360 / 23800

Growth Rate = .0571

Use 5.7% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart Unser Blvd South of Westside Blvd (2003-2007)



Annual Increase (Trendline) = 1200 veh./day

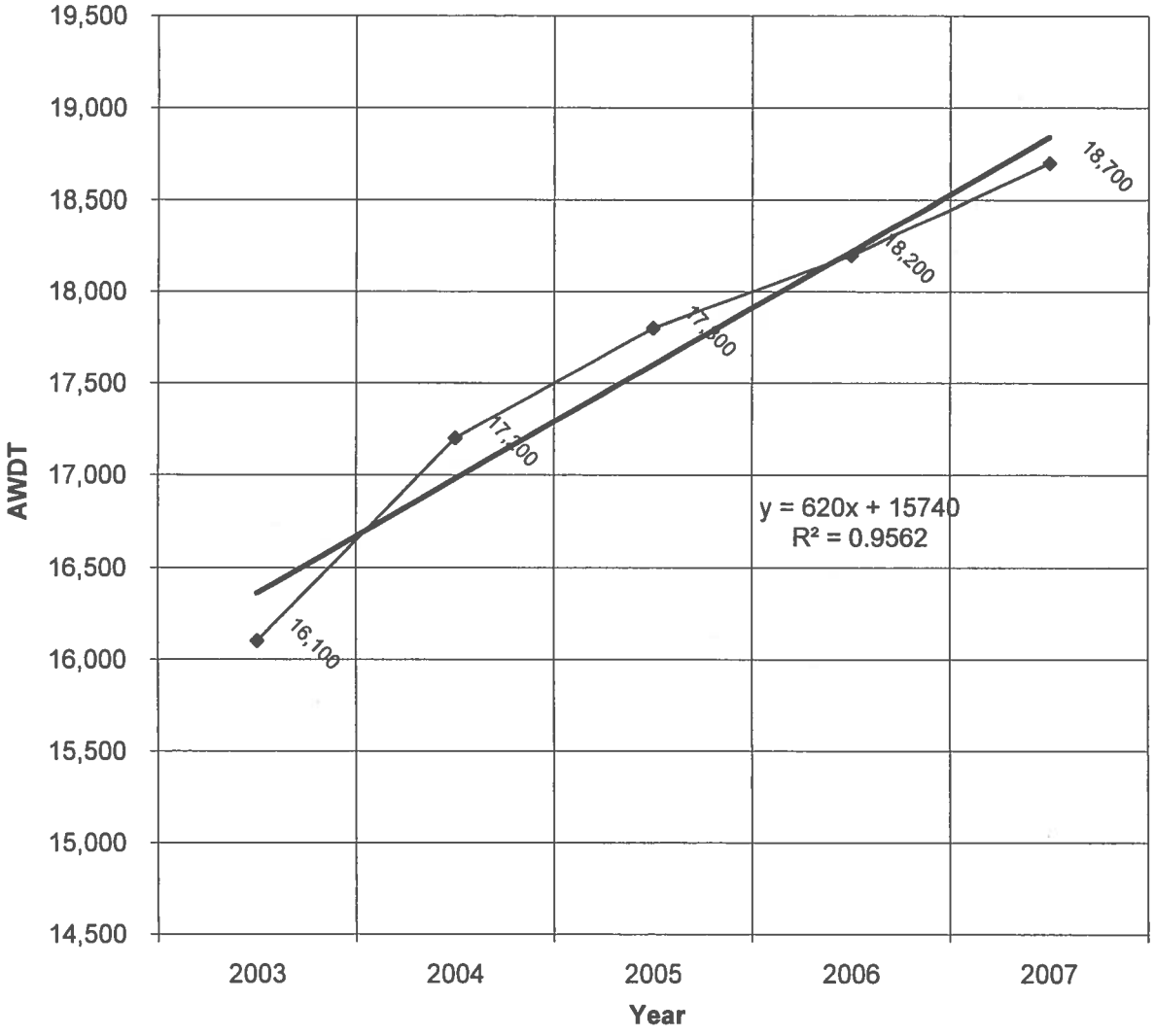
Growth Rate = 1200 / 27700

Growth Rate = .0433

Use 4.3% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart Unser Blvd North of McMahon Blvd (2003-2007)



Annual Increase (Trendline) = 620 veh./day

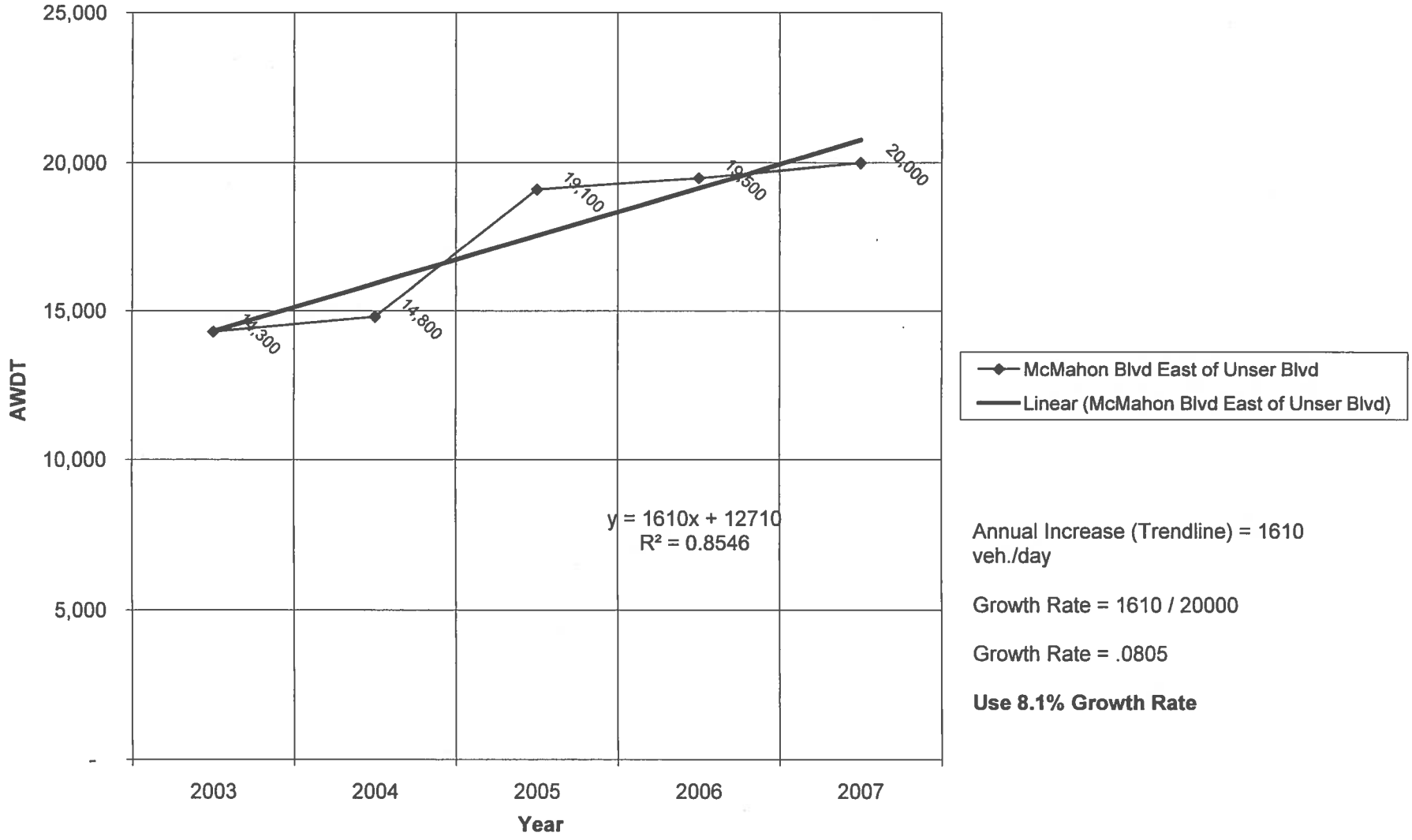
Growth Rate = 620 / 18700

Growth Rate = .0331

Use 3.3% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart McMahon Blvd East of Unser Blvd (2003-2007)



Annual Increase (Trendline) = 1610 veh./day

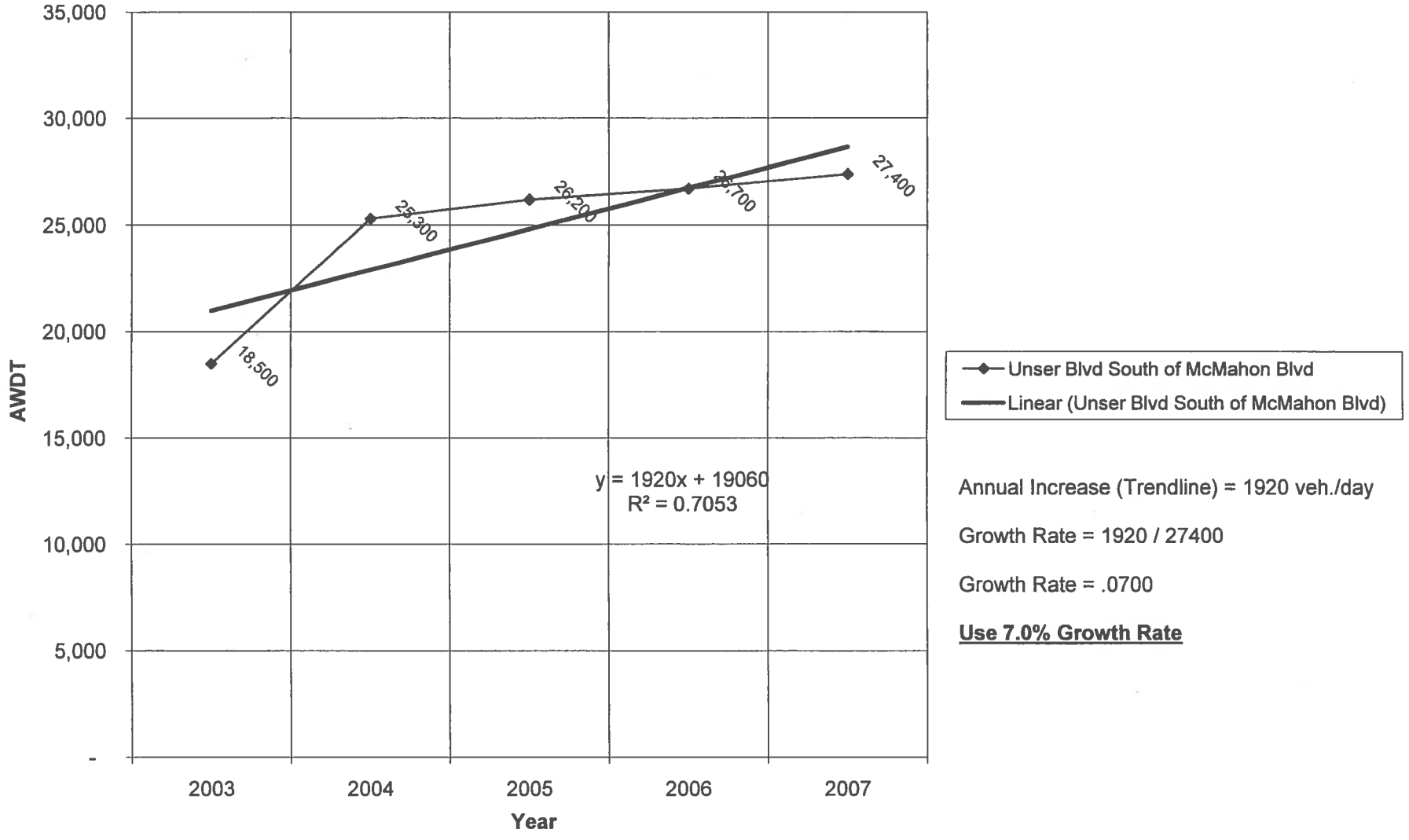
Growth Rate = 1610 / 20000

Growth Rate = .0805

Use 8.1% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart Unser Blvd South of McMahon Blvd (2003-2007)



Annual Increase (Trendline) = 1920 veh./day

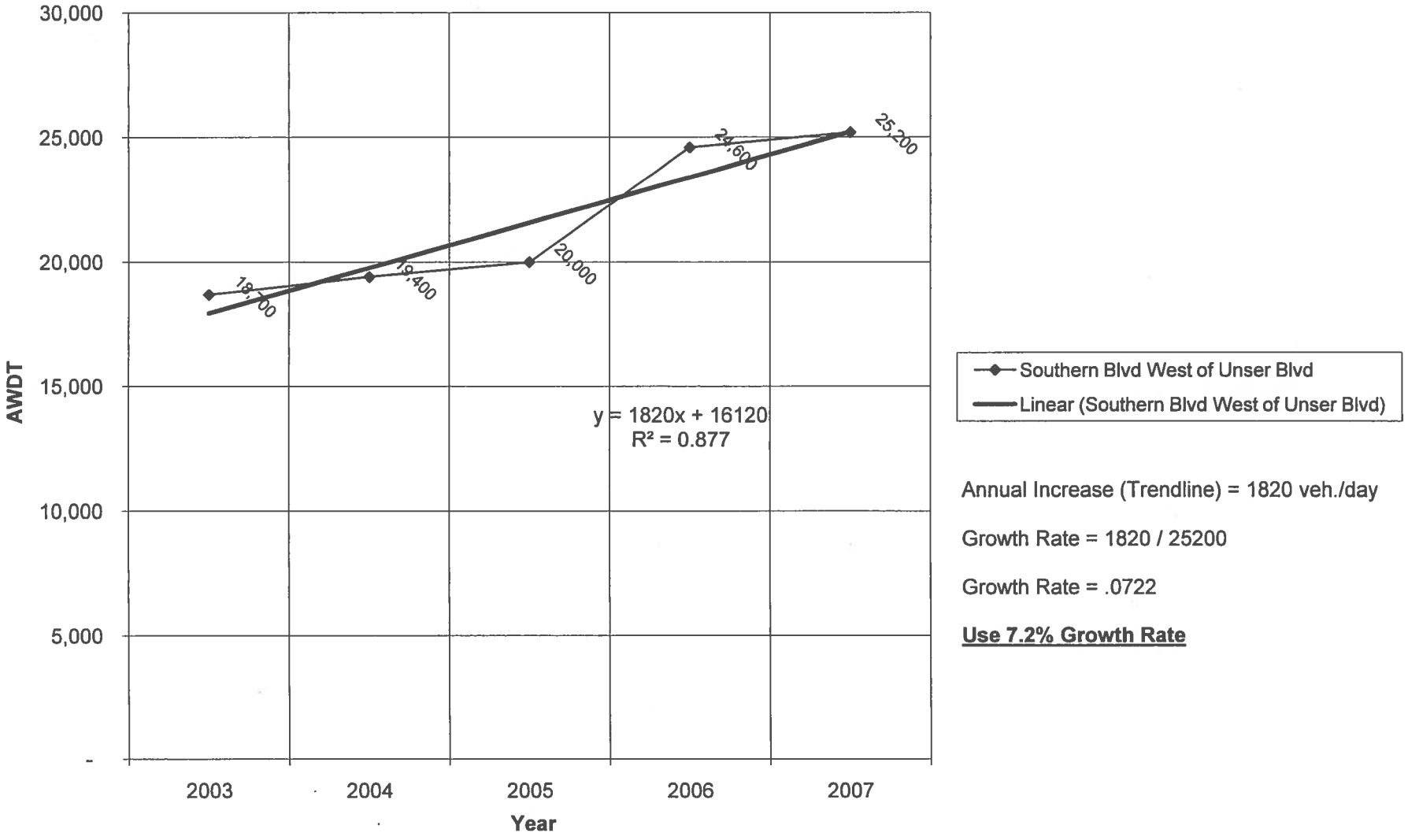
Growth Rate = 1920 / 27400

Growth Rate = .0700

Use 7.0% Growth Rate

Xray-Wside_Growth.xls

Historic Growth Chart Southern Blvd West of Unser Blvd (2003-2007)



Annual Increase (Trendline) = 1820 veh./day

Growth Rate = 1820 / 25200

Growth Rate = .0722

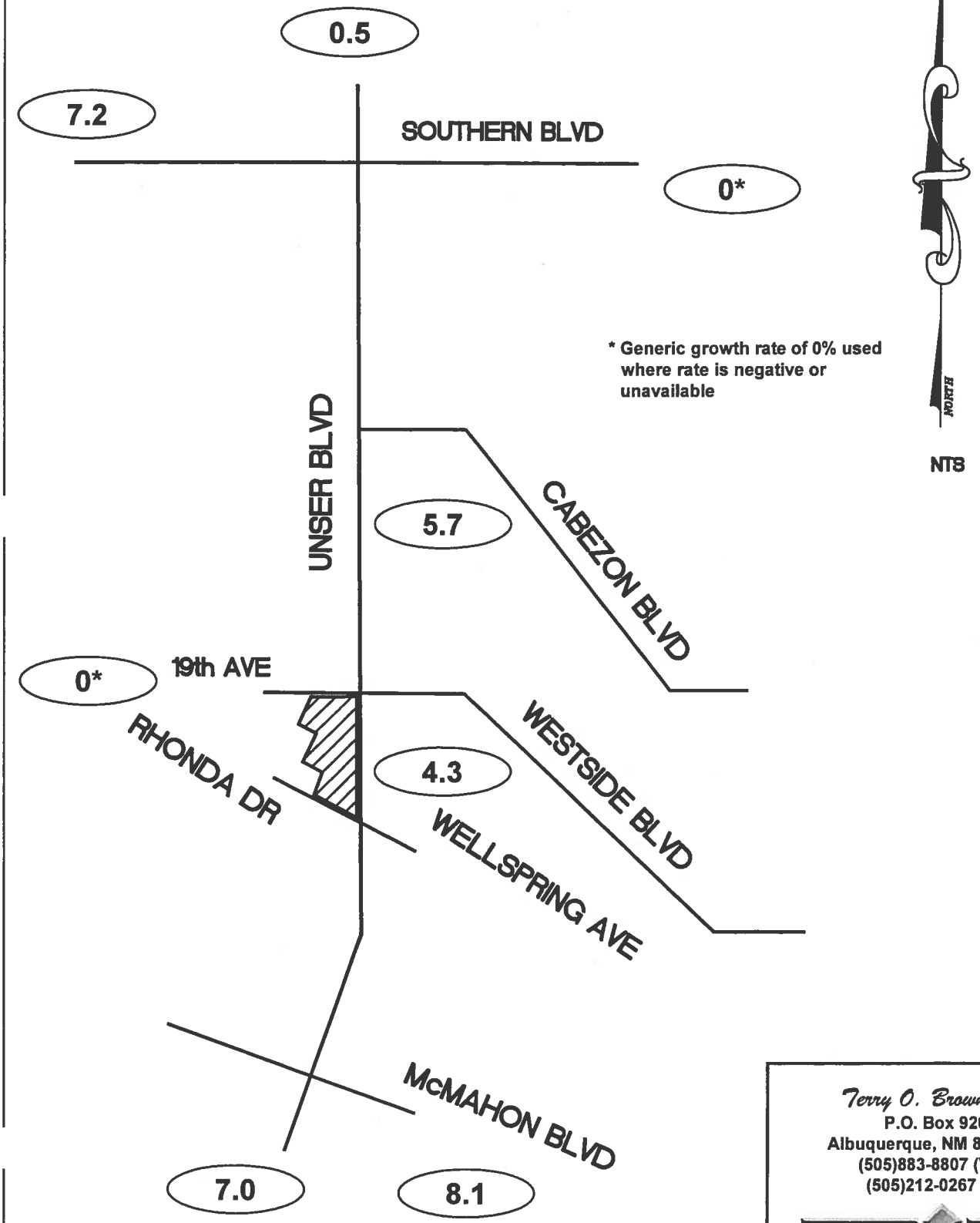
Use 7.2% Growth Rate

Xray-Wside_Growth.xls

X-Ray Associates of NM

(Westside Blvd / Unser Blvd)

Growth Rate Map (%)



NTS

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Unser Blvd
Southern Blvd
19th Ave SE
McMahon Blvd
2004 AM Peak
Hour Volumes
813
431
985
705
874
43
738
915
225
658


Unser Blvd
289
Southern Blvd
1338
639
1092
2004 PM Peak
Hour Volumes
1025
19th Ave SE
37
1141
1062
217
1085
McMahon Blvd


2030 AM Peak Hour Volumes
Unser Blvd
Southern Blvd
1820
767
1411
1498
2275
141
399
Cabezon Blvd
2053
1295
19th Ave SE
336
244
1412
1692
1277
624
1212
McMahon Blvd


2030 PM Peak Hour Volumes
Unser Blvd
Southern Blvd
Cabezon Blvd
19th Ave SE
McMahon Blvd
1659
1345
1111
2321
1889
214
323
1752
1099
111
1816
1761
1431
1599
1279

Timings
4: Rhonda Ave & Unser Blvd

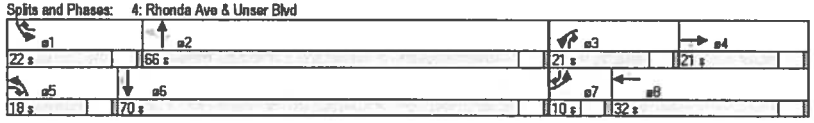
Terry O. Brown, P.E.
9/6/2009 - Synchro 7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	10	115	170	10	90	286	1168	455	280	1731	77
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	21.0	18.0	21.0	32.0	22.0	18.0	66.0	21.0	22.0	70.0	10.0
Total Split (%)	7.7%	16.2%	13.8%	16.2%	24.6%	16.9%	13.8%	50.8%	16.2%	16.9%	53.8%	7.7%
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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Min	Min	Min	C-Min	Min
Act Effct Green (s)	7.0	8.5	38.5	15.5	17.0	39.0	95.8	74.0	92.5	20.0	87.0	77.0
Actuated g/C Ratio	0.05	0.07	0.30	0.12	0.13	0.30	0.74	0.57	0.71	0.15	0.52	0.59
v/c Ratio	0.20	0.10	0.28	0.49	0.05	0.21	0.81	0.48	0.43	0.64	1.14	0.10
Control Delay	61.5	58.5	29.9	57.4	47.7	16.5	53.0	9.3	1.0	59.4	89.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	58.5	29.9	57.4	47.7	16.5	53.0	9.3	1.0	59.4	89.6	1.6
LOS	E	E	C	E	D	B	D	A	A	E	F	A
Approach Delay		36.0			43.4			13.9			82.3	
Approach LOS		D			D			B			F	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 74 (57%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 48.8 Intersection LOS: D
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Rhonda Ave & Unser Blvd



HCM Signalized Intersection Capacity Analysis
4: Rhonda Ave & Unser Blvd

Terry O. Brown, P.E.
9/6/2009 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	10	115	170	10	90	286	1168	455	280	1731	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt 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)	3400	1845	1568	3400	1845	1568	1752	5036	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	1845	1568	3400	1845	1568	105	5036	1568	3400	3505	1568
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	36	12	135	200	12	106	340	1390	542	333	2061	92
RTOR Reduction (vph)	0	0	21	0	0	40	0	0	169	0	0	27
Lane Group Flow (vph)	36	12	114	200	12	66	340	1390	373	333	2061	65
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2			6
Actuated Green, G (s)	5.0	6.5	31.5	13.5	15.0	33.0	95.0	72.0	85.5	18.0	85.0	70.0
Effective Green, g (s)	7.0	8.5	35.5	15.5	17.0	35.0	97.0	74.0	89.5	20.0	87.0	74.0
Actuated g/C Ratio	0.05	0.07	0.27	0.12	0.13	0.27	0.75	0.57	0.69	0.15	0.52	0.57
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)	183	121	464	405	241	470	420	2867	1116	523	1806	929
v/s Ratio Prot	0.01	0.01	c0.05	c0.06	0.01	0.02	c0.17	0.28	0.04	0.10	c0.59	0.00
v/s Ratio Perm			0.02			0.02	0.43		0.20			0.04
v/c Ratio	0.20	0.10	0.25	0.49	0.05	0.14	0.81	0.48	0.33	0.64	1.14	0.07
Uniform Delay, d1	58.8	57.1	36.8	53.6	49.4	36.1	41.1	16.7	8.2	51.6	31.5	12.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.43	0.53	1.37	1.15	0.78	0.35
Incremental Delay, d2	0.5	0.4	0.3	0.9	0.1	0.1	1.1	0.1	0.0	0.2	64.3	0.0
Delay (s)	59.3	57.5	37.1	54.5	49.5	36.2	59.7	8.8	11.2	59.8	88.8	4.4
Level of Service	E	E	D	D	D	D	E	A	B	E	F	A
Approach Delay (s)		42.8			48.2			17.0			81.7	
Approach LOS		D			D			B			F	

Intersection Summary

HCM Average Control Delay	50.4	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.92				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	85.2%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Timings
4: Wellspring Ave & Unser Blvd

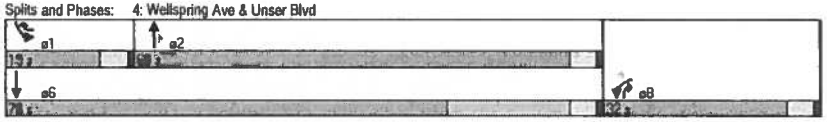
Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	170	90	1454	455	280	1851
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0	21.0
Total Split (s)	32.0	19.0	69.0	32.0	19.0	70.0
Total Split (%)	26.7%	15.8%	57.5%	26.7%	15.8%	58.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?						
Recall Mode	Min	Min	C-Min	Min	Min	C-Min
Act Effct Green (s)	15.5	37.6	76.4	94.9	19.1	98.5
Actuated g/C Ratio	0.13	0.31	0.64	0.79	0.16	0.82
v/c Ratio	0.46	0.21	0.78	0.43	0.62	0.77
Control Delay	51.1	25.2	20.1	5.2	51.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	25.2	20.1	5.2	51.7	8.0
LOS	D	C	C	A	D	A
Approach Delay	42.1		16.6			13.7
Approach LOS	D		B			B

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 16.7 — Intersection LOS: B
Intersection Capacity Utilization 63.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Wellspring Ave & Unser Blvd



HCM Signalized Intersection Capacity Analysis
4: Wellspring Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	170	90	1454	455	280	1851
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	3505	1568	3400	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	3505	1568	3400	3505
Peak-hour factor, PHF	0.85	0.85	0.84	0.84	0.84	0.84
Adj. Flow (vph)	200	106	1731	542	333	2204
RTOR Reduction (vph)	0	11	0	9	0	0
Lane Group Flow (vph)	200	95	1731	533	333	2204
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	13.5	30.6	74.4	87.9	17.1	96.5
Effective Green, g (s)	15.5	34.6	76.4	91.9	19.1	98.5
Actuated g/C Ratio	0.13	0.29	0.64	0.77	0.16	0.82
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)	439	491	2232	1240	541	2877
v/s Ratio Prot	0.06	0.03	0.49	c0.06	0.10	c0.63
v/s Ratio Perm		0.03		0.28		
v/c Ratio	0.46	0.19	0.78	0.43	0.62	0.77
Uniform Delay, d1	48.3	32.2	15.6	4.9	47.0	5.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2	2.7	0.2	2.1	2.0
Delay (s)	49.1	32.4	18.4	5.1	49.1	7.2
Level of Service	D	C	B	A	D	A
Approach Delay (s)	43.3		15.2			12.7
Approach LOS	D		B			B

Intersection Summary

HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	3.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Wellspring Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	620	270	2040	290	110	1510
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0	21.0
Total Split (s)	32.0	10.0	88.0	32.0	10.0	98.0
Total Split (%)	24.6%	7.7%	67.7%	24.6%	7.7%	75.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?						
Recall Mode	Min	Min	C-Min	Min	Min	C-Min
Act Effct Green (s)	29.0	39.0	85.0	117.0	7.0	95.0
Actuated g/C Ratio	0.22	0.30	0.65	0.90	0.05	0.73
v/c Ratio	0.96	0.67	0.96	0.22	0.64	0.63
Control Delay	74.6	46.3	16.5	0.6	56.4	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	46.3	16.5	0.6	56.4	9.9
LOS	E	D	B	A	E	A
Approach Delay	66.0		14.5			13.0
Approach LOS	E		B			B

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 32 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Wellspring Ave & Unser Blvd

HCM Signalized Intersection Capacity Analysis
4: Wellspring Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	620	270	2040	290	110	1510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	3505	1568	3400	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	3505	1568	3400	3505
Peak-hour factor, PHF	0.85	0.85	0.93	0.93	0.93	0.93
Adj. Flow (vph)	729	318	2194	312	118	1624
RTOR Reduction (vph)	0	8	0	7	0	0
Lane Group Flow (vph)	729	310	2194	305	118	1624
Turn Type		pm+ov		pm+ov	Prot	
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	27.0	32.0	83.0	110.0	5.0	93.0
Effective Green, g (s)	29.0	36.0	85.0	114.0	7.0	95.0
Actuated g/C Ratio	0.22	0.28	0.65	0.88	0.05	0.73
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)	758	470	2292	1411	183	2561
v/s Ratio Prot	c0.21	c0.04	c0.63	0.05	0.03	0.46
v/s Ratio Perm		0.16		0.15		
v/c Ratio	0.96	0.66	0.96	0.22	0.64	0.63
Uniform Delay, d1	50.0	41.6	20.8	1.2	60.3	8.8
Progression Factor	1.00	1.00	0.68	0.84	0.90	1.09
Incremental Delay, d2	23.6	3.3	1.5	0.0	0.7	0.1
Delay (s)	73.5	44.9	15.7	1.0	55.1	9.7
Level of Service	E	D	B	A	E	A
Approach Delay (s)	64.8		13.8			12.8
Approach LOS	E		B			B

Intersection Summary

HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Rhonda Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	110	10	364	620	10	213	2010	290	110	1512	70
Turn Type	Prot		pm+ov	Prot		pm+pt		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	5	2	3	1	6	7
Permitted Phases			4			2		2			6
Detector Phase	7	4	5	3	8	5	2	3	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	10.0
Total Split (s)	10.0	21.0	17.0	27.0	38.0	17.0	72.0	27.0	10.0	65.0	10.0
Total Split (%)	7.7%	16.2%	13.1%	20.8%	29.2%	13.1%	55.4%	20.8%	7.7%	50.0%	7.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	C-Min	Min	Min	C-Min	Min
Act Effct Green (s)	7.0	12.2	35.0	24.0	29.2	84.8	72.2	99.2	9.6	62.0	72.0
Actuated g/C Ratio	0.05	0.09	0.27	0.18	0.22	0.65	0.56	0.76	0.07	0.48	0.55
v/c Ratio	0.70	0.07	1.00	1.16	0.79	0.71	1.11	0.25	0.47	0.97	0.08
Control Delay	81.0	51.5	89.4	135.6	49.2	39.8	74.9	0.1	70.7	17.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.0	51.5	89.4	135.6	49.2	39.8	74.9	0.1	70.7	17.3	0.1
LOS	F	D	F	F	D	D	E	A	E	B	A
Approach Delay		86.7			108.7		63.3			20.0	
Approach LOS		F			F		E			C	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 60.5		Intersection LOS: E	
Intersection Capacity Utilization 94.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: Rhonda Ave & Unser Blvd

HCM Signalized Intersection Capacity Analysis
4: Rhonda Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	10	364	620	10	270	213	2010	290	110	1512	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00		1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.86
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1845	1568	3400	1578		1752	3505	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	1845	1568	3400	1578		114	3505	1568	3400	3505	1568
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	129	12	428	729	12	318	229	2161	312	118	1626	75
RTOR Reduction (vph)	0	0	7	0	64	0	0	0	81	0	0	28
Lane Group Flow (vph)	129	12	421	729	266	0	229	2161	231	118	1626	47
Turn Type	Prot		pm+ov	Prot			pm+pt		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4				2		2			6
Actuated Green, G (s)	5.0	10.2	28.0	22.0	27.2		82.8	70.2	92.2	7.6	60.0	65.0
Effective Green, g (s)	7.0	12.2	32.0	24.0	29.2		84.8	72.2	96.2	9.6	62.0	69.0
Actuated g/C Ratio	0.05	0.09	0.25	0.18	0.22		0.65	0.56	0.74	0.07	0.48	0.53
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)	183	173	422	628	354		324	1947	1197	251	1672	868
v/s Ratio Prot	0.04	0.01	c0.15	c0.21	0.17		0.11	c0.62	0.04	0.03	0.46	0.00
v/s Ratio Perm			0.12				0.36		0.11			0.03
v/c Ratio	0.70	0.07	1.00	1.16	0.75		0.71	1.11	0.19	0.47	0.97	0.05
Uniform Delay, d1	60.5	53.7	49.0	53.0	47.0		38.5	28.9	5.1	57.8	33.2	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.22	0.82	0.13	1.20	0.39	0.01
Incremental Delay, d2	11.7	0.2	43.0	89.2	8.7		0.6	50.3	0.0	0.1	2.8	0.0
Delay (s)	72.1	53.9	92.0	142.2	55.8		47.7	74.0	0.7	69.6	15.9	0.1
Level of Service	E	D	F	F	E		D	E	A	E	B	A
Approach Delay (s)		86.7			115.2			63.3			18.7	
Approach LOS		F			F			E			B	

Intersection Summary					
HCM Average Control Delay	61.2	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)		6.0	
Intersection Capacity Utilization	94.9%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Timings
4: Rhonda Ave & Unser Blvd

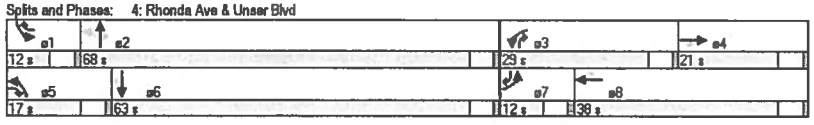
Terry O. Brown, P.E.
9/7/2009 - Synchro 7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	10	364	620	10	270	213	2010	290	110	1512	70
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	10.0
Total Split (s)	12.0	21.0	17.0	29.0	38.0	12.0	17.0	68.0	29.0	12.0	63.0	12.0
Total Split (%)	9.2%	16.2%	13.1%	22.3%	29.2%	9.2%	13.1%	52.3%	22.3%	9.2%	48.5%	9.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Min	Min	Min	C-Min	Min
Act Effct Green (s)	9.0	8.5	35.0	26.0	25.5	39.8	86.5	71.2	100.2	12.4	60.0	72.0
Actuated g/C Ratio	0.07	0.07	0.27	0.20	0.20	0.31	0.67	0.55	0.77	0.10	0.46	0.55
v/c Ratio	0.55	0.10	1.00	1.07	0.03	0.65	0.61	0.78	0.24	0.37	1.00	0.08
Control Delay	67.8	58.5	90.2	104.4	42.1	44.0	38.4	18.0	0.1	52.2	39.5	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	58.5	90.2	104.4	42.1	44.0	38.4	18.0	0.1	52.2	39.5	4.5
LOS	E	E	F	F	D	D	D	B	A	D	D	A
Approach Delay		84.5			85.5			17.7			38.9	
Approach LOS		F			F			B			D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 70 (54%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 41.8 — Intersection LOS: D
Intersection Capacity Utilization 92.0% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 4: Rhonda Ave & Unser Blvd



HCM Signalized Intersection Capacity Analysis
4: Rhonda Ave & Unser Blvd

Terry O. Brown, P.E.
9/7/2009 - Synchro 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	10	364	620	10	270	213	2010	290	110	1512	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt 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)	3400	1845	1568	3400	1845	1568	1752	5036	1568	3400	3505	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	1845	1568	3400	1845	1568	117	5036	1568	3400	3505	1568
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	129	12	428	729	12	318	229	2161	312	118	1626	75
RTOR Reduction (vph)	0	0	6	0	0	9	0	0	79	0	0	28
Lane Group Flow (vph)	129	12	422	729	12	309	229	2161	233	118	1626	47
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2			6
Actuated Green, G (s)	7.0	6.5	28.0	24.0	23.5	33.9	84.5	69.1	93.1	10.4	58.0	65.0
Effective Green, g (s)	9.0	8.5	32.0	26.0	25.5	35.9	86.5	71.1	97.1	12.4	60.0	69.0
Actuated g/C Ratio	0.07	0.07	0.25	0.20	0.20	0.28	0.67	0.55	0.75	0.10	0.46	0.53
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)	235	121	422	680	382	481	373	2754	1207	324	1618	868
v/s Ratio Prot	0.04	0.01	c0.18	c0.21	0.01	0.06	0.11	0.43	0.04	0.03	c0.46	0.00
v/s Ratio Perm			0.09			0.14	0.30		0.11			0.03
v/c Ratio	0.55	0.10	1.00	1.07	0.03	0.64	0.61	0.78	0.19	0.36	1.00	0.05
Uniform Delay, d1	58.5	57.1	49.0	52.0	42.3	41.4	35.5	23.4	4.9	55.1	35.0	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.28	0.74	0.14	0.95	0.89	0.98
Incremental Delay, d2	2.6	0.4	43.4	55.5	0.0	2.9	0.3	0.2	0.0	0.1	7.9	0.0
Delay (s)	61.1	57.5	92.4	107.5	42.3	44.4	45.8	17.4	0.7	52.6	39.2	14.4
Level of Service	E	E	F	F	D	D	D	B	A	D	D	B
Approach Delay (s)		84.6			87.8			17.9			39.0	
Approach LOS		F			F			B			D	

Intersection Summary

HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Wellspring Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	620	270	2224	290	110	1877
Turn Type		pm+ov		Perm	Prot	
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	10.0	21.0	21.0	10.0	21.0
Total Split (s)	38.0	10.0	72.0	72.0	10.0	65.0
Total Split (%)	31.7%	8.3%	60.0%	60.0%	8.3%	54.2%
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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag		Lead	Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	Min	Min	C-Min	C-Min	Min	C-Min
Act Effct Green (s)	32.1	43.5	70.5	70.5	8.4	81.9
Actuated g/C Ratio	0.27	0.36	0.59	0.59	0.07	0.68
v/c Ratio	0.80	0.56	1.16	0.31	0.50	0.84
Control Delay	48.1	34.3	104.0	5.6	61.9	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	34.3	104.0	5.6	61.9	19.3
LOS	D	C	F	A	E	B
Approach Delay	43.9		92.6			21.7
Approach LOS	D		F			C

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 59 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 58.2 Intersection LOS: E
Intersection Capacity Utilization 85.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 4: Wellspring Ave & Unser Blvd

HCM Signalized Intersection Capacity Analysis
4: Wellspring Ave & Unser Blvd

Terry O. Brown, P.E.
9/5/2009 - Synchro 7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	620	270	2224	290	110	1877
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	1.00	0.95	1.00	0.97	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	3505	1568	3400	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	3505	1568	3400	3505
Peak-hour factor, PHF	0.85	0.85	0.93	0.93	0.93	0.93
Adj. Flow (vph)	729	318	2391	312	118	2018
RTOR Reduction (vph)	0	2	0	80	0	0
Lane Group Flow (vph)	729	316	2391	232	118	2018
Turn Type		pm+ov		Perm	Prot	
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	30.1	36.5	68.5	68.5	6.4	79.9
Effective Green, g (s)	32.1	40.5	70.5	70.5	8.4	81.9
Actuated g/C Ratio	0.27	0.34	0.59	0.59	0.07	0.68
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)	910	568	2059	921	238	2392
v/s Ratio Prot	c0.21	0.04	c0.68		0.03	c0.58
v/s Ratio Perm		0.16		0.15		
v/c Ratio	0.80	0.56	1.16	0.25	0.50	0.84
Uniform Delay, d1	41.0	32.4	24.8	12.0	53.8	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	1.2	78.4	0.7	1.6	3.8
Delay (s)	46.1	33.6	103.1	12.6	55.4	18.1
Level of Service	D	C	F	B	E	B
Approach Delay (s)	42.3		92.7			20.2
Approach LOS	D		F			C

Intersection Summary

HCM Average Control Delay	57.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	1	1	363	147	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	1	1	427	173	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			551			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	428				218	215
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324				94	90
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				79	100
cM capacity (veh/h)	1121				823	880

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	2	428	174
Volume Left	1	0	173
Volume Right	0	427	1
cSH	1121	1700	823
Volume to Capacity	0.00	0.25	0.21
Queue Length 95th (ft)	0	0	20
Control Delay (s)	4.1	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	4.1	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	1	1	282	473	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	1	1	332	556	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			551			
pX, platoon unblocked	0.94				0.94	0.94
vC, conflicting volume	333				171	167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264				93	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				35	100
cM capacity (veh/h)	1222				854	913

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	2	333	558
Volume Left	1	0	556
Volume Right	0	332	1
cSH	1222	1700	854
Volume to Capacity	0.00	0.20	0.65
Queue Length 95th (ft)	0	0	124
Control Delay (s)	4.0	0.0	16.8
Lane LOS	A		C
Approach Delay (s)	4.0	0.0	16.8
Approach LOS			C

Intersection Summary			
Average Delay	10.5		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	43	3	174	1	2	66
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.85	0.85
Hourly flow rate (vph)	56	4	226	1	2	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				437		
pX, platoon unblocked					0.98	
vC, conflicting volume			60		511	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			60		490	58
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			85		99	92
cM capacity (veh/h)			1538		447	1005

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	60	227	80
Volume Left	0	226	2
Volume Right	4	0	78
cSH	1700	1538	970
Volume to Capacity	0.04	0.15	0.08
Queue Length 95th (ft)	0	13	7
Control Delay (s)	0.0	7.7	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	7.7	9.0
Approach LOS			A

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	34	4	125	1	6	223
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	40	5	147	1	7	262
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				437		
pX, platoon unblocked						
vC, conflicting volume			45		338	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			45		338	42
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		99	74
cM capacity (veh/h)			1557		594	1025

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	45	148	269
Volume Left	0	147	7
Volume Right	5	0	262
cSH	1700	1557	1006
Volume to Capacity	0.03	0.09	0.27
Queue Length 95th (ft)	0	8	27
Control Delay (s)	0.0	7.5	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	7.5	9.9
Approach LOS			A

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	43	3	539	1	2	213
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.85	0.85
Hourly flow rate (vph)	56	4	700	1	2	251
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				437		
pX, platoon unblocked					0.86	
vC, conflicting volume			60		1459	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			60		1452	58
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			54		96	75
cM capacity (veh/h)			1538		67	1005

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	60	701	253
Volume Left	0	700	2
Volume Right	4	0	251
cSH	1700	1538	889
Volume to Capacity	0.04	0.46	0.28
Queue Length 95th (ft)	0	61	29
Control Delay (s)	0.0	9.3	10.7
Lane LOS		A	B
Approach Delay (s)	0.0	9.3	10.7
Approach LOS			B

Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	34	4	408	1	6	695
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	40	5	480	1	7	818
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				437		
pX, platoon unblocked					0.88	
vC, conflicting volume			45		1004	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			45		934	42
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			69		96	20
cM capacity (veh/h)			1557		178	1025

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	45	481	825
Volume Left	0	480	7
Volume Right	5	0	818
cSH	1700	1557	985
Volume to Capacity	0.03	0.31	0.84
Queue Length 95th (ft)	0	33	255
Control Delay (s)	0.0	8.3	24.1
Lane LOS		A	C
Approach Delay (s)	0.0	8.3	24.1
Approach LOS			C

Intersection Summary			
Average Delay	17.7		
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	34	4	408	1	6	695
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	40	5	480	1	7	818
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				437		
pX, platoon unblocked					0.88	
vC, conflicting volume			45		1004	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			45		939	42
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			69		96	20
cM capacity (veh/h)			1557		179	1025

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	45	481	825
Volume Left	0	480	7
Volume Right	5	0	818
cSH	1700	1557	985
Volume to Capacity	0.03	0.31	0.84
Queue Length 95th (ft)	0	33	255
Control Delay (s)	0.0	8.3	24.1
Lane LOS		A	C
Approach Delay (s)	0.0	8.3	24.1
Approach LOS			C

Intersection Summary			
Average Delay	17.7		
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

Network Totals

Number of Intersections	3
Total Delay (hr)	86
Stops (#)	5137
Average Speed (mph)	16
Total Travel Time (hr)	136
Distance Traveled (mi)	2150
Fuel Consumed (gal)	193
Fuel Economy (mpg)	11.2
Unserved Vehicles (#)	188
Vehicles in dilemma zone (#)	229
Performance Index	99.9

Network Totals

Number of Intersections	4
Total Delay (hr)	140
Stops (#)	9521
Average Speed (mph)	14
Total Travel Time (hr)	214
Distance Traveled (mi)	2943
Fuel Consumed (gal)	303
Fuel Economy (mpg)	9.7
Unserved Vehicles (#)	140
Vehicles in dilemma zone (#)	288
Performance Index	166.9

Network Totals

Number of Intersections	3
Total Delay (hr)	193
Stops (#)	7101
Average Speed (mph)	11
Total Travel Time (hr)	256
Distance Traveled (mi)	2704
Fuel Consumed (gal)	313
Fuel Economy (mpg)	8.6
Unserved Vehicles (#)	712
Vehicles in dilemma zone (#)	274
Performance Index	213.0

Network Totals

Number of Intersections	4
Total Delay (hr)	211
Stops (#)	10681
Average Speed (mph)	11
Total Travel Time (hr)	292
Distance Traveled (mi)	3282
Fuel Consumed (gal)	381
Fuel Economy (mpg)	8.6
Unserved Vehicles (#)	508
Vehicles in dilemma zone (#)	303
Performance Index	240.7

Signalized Intersection Information Sheet

Intersection: **Cabezon / Unser**

Speed Limit - E-W Street:	UNKNOWN	Date:
Speed Limit - N-S Street:	UNKNOWN	**5/13/2009**
Type of Intersection Control	Signalized	

East Bound Approach: Cabezon

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-	-	1	-	1
Length -	180					180

	Left Turn Arrow?		Thru Green	Right Turn Arrow?
Permitted ->	NO		YES	NO

Is there a right turn slip laned that by-passes the traffic signal? NO

West Bound Approach: Cabezon

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-	-	-	1	-
Length -	200					0

	Left Turn Arrow?		Thru Green	Right Turn Arrow?
Permitted ->	NO		YES	NO

Is there a right turn slip laned that by-passes the traffic signal? NO

North Bound Approach: Unser

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-		2	-	1
Length -	150					150

	Left Turn Arrow?		Thru Green	Right Turn Arrow?
Permitted/Protected ->	YES		YES	NO

Is there a right turn slip laned that by-passes the traffic signal? NO

South Bound Approach: Unser

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-		2	-	1
Length -	200					120

	Left Turn Arrow?		Thru Green	Right Turn Arrow?
Permitted ->	NO		NO	NO

Is there a right turn slip laned that by-passes the traffic signal? NO

NOTE: Existing Geometry

Signalized Intersection Information Sheet

Intersection: **McMahon / Unser**

Speed Limit - E-W Street: UNKNOWN

Speed Limit - N-S Street: UNKNOWN

Type of Intersection Control: Signalized

Date: **5/14/2009**

East Bound Approach:

McMahon

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-	-	2	-	1
Length -	200					200

Permitted/Protected ->	Left Turn Arrow?		Thru Green	Right Turn Arrow?
	YES		YES	YES

Is there a right turn slip laned that by-passes the traffic signal? NO

West Bound Approach:

McMahon

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-	-	2	-	1
Length -	200					200

Permitted/Protected ->	Left Turn Arrow?		Thru Green	Right Turn Arrow?
	YES		YES	YES

Is there a right turn slip laned that by-passes the traffic signal? NO

North Bound Approach:

Unser

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-		1	-	1
Length -	180					180

Permitted/Protected ->	Left Turn Arrow?		Thru Green	Right Turn Arrow?
	YES		YES	YES

Is there a right turn slip laned that by-passes the traffic signal? NO

South Bound Approach:

Unser

	Left Turn Lanes	Thru / Lefts	Left/Thru/Right	Thru Lanes	Thru / Rights	Right Turn Lanes
No. Lanes -	1	-		1	-	1
Length -	180					120

Permitted/Protected ->	Left Turn Arrow?		Thru Green	Right Turn Arrow?
	YES		YES	YES

Is there a right turn slip laned that by-passes the traffic signal? NO

NOTE: Existing Geometry