Terry O. Brown P.E.

# McMahon / Unser Mixed-use Development

(SW Corner)

### **Access Evaluation Study**

December 16, 2020

DRAFT

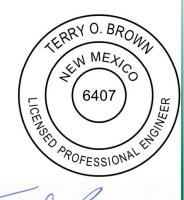
HT#A11D017 Received 12/16/2020

#### Presented to:

City of Albuquerque Transportation Development Section

### Prepared for:

Ron Bohannan, P.E. Tierra West, LLC Albuquerque, NM 87109



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

Terry & 1

# McMahon / Unser Mixed Use Development (Southwest Corner) Access Evaluation Study

# **Contents**

Introduction	1
Study Procedures	1
Description of Proposed Development	2
Trip Generation Rates	2
Trip Distribution / Trip Assignments	3
Commercial Land Uses / Residential Land Uses	3
Trip Assignment	3
Background Traffic Growth	4
Projected Peak Hour Turning Movements for 2024 and 2040 Buildout	4
Case "Y" and Case "N" Analyses	4
Intersection #3 – Bandelier Rd. / Unser Blvd Pages A-44 thru A-59 Intersection #5 – Bandelier Dr. / Sagittarius Ave Pages A-44 thru A-59 Intersection #10 – Driveway "B" / Unser Blvd Pages A-44 thru A-59	8
Findings and Conclusions	11
Recommendations	11
Appendix	12

## McMahon / Unser Development (Southwest Corner) Access Evaluation Study

#### Introduction

The purpose of this study is to evaluate the proposed right-in, right-out, left-in only unsignalized access to the proposed McMahon / Unser Development at the southeast corner of McMahon Blvd. / Unser Blvd. and demonstrate the benefit, if any, to permitting the access. The proposed access is located along the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline). It will provide needed access to the retail commercial component of the proposed McMahon / Unser Mixed Use Development. This report is to be considered as a companion report to the Traffic Impact Study for the McMahon / Unser Mixed Use Development at the southwest corner of McMahon Blvd. / Unser Blvd. This study is for review and approval by City of Albuquerque Transportation Development Section of the Planning Department and then subsequently the Mid-Region Council of Governments' Roadway Access Committee (R.A.C.) and Transportation Coordinating Committee (T.C.C.).

## **Study Procedures**

The evaluation of the alternative access scenarios for the project considers the signalized intersection of Bandelier Dr. / Unser Blvd., the proposed access at Bandelier Dr. / Sagittarius Ave., and the proposed unsignalized driveway which is the subject of this report. The proposed unsignalized driveway is a right-in, right-out, left-in only located on the west side of Unser Blvd. directly across from the existing right-in, right-out, left-in only driveway into the CVS Pharmacy at the southeast corner of McMahon Blvd. / Unser Blvd.

The alternative access scenarios evaluated in this report are:

- 1) Case "Y" a right-in, right-out, left-in only unsignalized driveway along the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline).
- 2) Case "N" no driveway on the west side of Unser Blvd. between McMahon Blvd. and Bandelier Rd.

The intersections impacted were evaluated to estimate level-of-service, delay, and 95<sup>th</sup> 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 <u>Synchro (Version 10, Build 10.3.151)</u> as required by the New Mexico Department of Transportation and other local governments.

Intersections targeted for analysis in this study include Bandelier Dr. / Unser Blvd., Bandelier Dr. / Sagittarius Ave., and Driveway "B" / 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 subject area of land targeted for the site development plan consists of an approximately 19-acre tract of land to be developed with approximately 10 acres of retail commercial and approximately 9 acres of residential apartments. The proposed conceptual site development plan consists of the following approximate land uses:

- Approximately 75,000 S.F. Retail Commercial floor space
- A 256-unit apartment complex

See the conceptual site development plan on Page A-3 in the Appendix of this report to acquire more detailed information about the proposed development. This site plan is conceptual at this point in time and is subject to some changes as progress takes place in the design process. The plan should, however, provide a reliable basis upon which to analyze the impact of the development on the adjacent transportation system and provide guidelines for mitigating the impact and establishing access criteria. The conceptual site plan as it is shown in this report proposes full access driveways along Bandelier Dr. at Sagittarius Ave. (retail commercial access), Aquarius Ave. (residential apartments access), and Driveway "A". Partial access driveways are at McMahon Blvd. / Pinon Verde Rd. (right-in, right-out only), and Driveway "B" (CVS Driveway) proposed as a right-in, right-out, left-in only driveway.

If approved by the Transportation Coordinating Committee, Driveway "B" (CVS Driveway) will allow access to the project site off Unser Blvd. as a new right-in, right-out, left-in only unsignalized driveway.

# **Trip Generation Rates**

Projected trips were calculated from data in the Institute of Transportation Engineers Trip Generation report (10th Edition). Trips for the development were determined based on land uses defined on the Conceptual Site Development Plan on Page A-3 in the Appendix of this report. Adjustments for internal capture (as per NCHRP 684) and pass-by trips were incorporated into the trip generation rate calculations.

The resulting number of trips generated for the proposed development are summarized in the following table:

# McMahon / Unser Mixed Use Development (SW Corner)

## Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

	USE (ITE CODE)		24 HR VOL	A. M. PE	AK HR.	P. M. PE	AK HR.
COMMENT	DESCRIPTION		GROSS	ENTER	EXIT	ENTER	EXIT
	Summary Sheet	Units					
Lot 1	Multifamily Housing (Low-Rise)	256	1,895	27	90	89	53
Lot 2	Drive-In Bank (912)	4	499	22	14	53	55
Lot 3	Shopping Center (820)	8.31	314	5	3	15	16
Lot 4	High Turnover (Sit-Down) Restaurant (932)	16.47	1,847	90	74	100	61
Lot 5	Shopping Center (820)	6.00	227	3	2	11	12
Lot 6	Shopping Center (820)	8.62	325	5	3	16	17
Lot 7	Gas Station Supermart (960	20	4,610	281	281	230	230
Lot 8	Shopping Center (820)	11.96	452	7	4	22	24
Lot 9	Shopping Center (820)	11.31	427	7	4	21	22
	Subtotal		10,596	447	475	557	490
	Retail Commercial Trips (Raw)		8,701	420	385	468	437
	Internal Capture (based on NCHRP 684)			(23)	(6)	(71)	(87)
Ret	ail Commercial Trips (Adjusted for Internal Cap	ture)		397	379	397	350
	Pass-By Trips	30%		-119	-114	-119	-105
	Total Primary Commercial Trips			278	265	278	245
	Total Residential Trips			27	90	89	53
	Internal Capture (based on NCHRP 684)			(2)	(19)	(35)	(19)
	Total Primary Commercial Trips			25	71	54	34

See Appendix Pages A-4 thru A-13 for Individual Trip Generation Worksheets.

# **Trip Distribution / Trip Assignments**

#### Primary and Diverted Linked Trips:

Trips were distributed as follows:

#### Commercial Land Uses / Residential Land Uses

The trip distribution model for both residential and retail commercial land uses are the same for this study as utilized in the companion Traffic Impact Study for this project.

## **Trip Assignment**

Trip Assignments for the Access Evaluation Study are the same for Case "Y" as those utilized in the Traffic Impact Study for this project. The Trip Assignments were adjusted for Case "N" to account for the absence of the proposed right-in, right-out, left-in access on Unser Blvd.

## **Background Traffic Growth**

Background traffic growth rates utilized in the Access Evaluation Study are the same as those utilized in the companion Traffic Impact Study.

## Projected Peak Hour Turning Movements for 2024 and 2040 Buildout

Only the BUILD conditions (MITIGATED) will be evaluated to evaluate the proposed access in this Report. This Report will compare the operational analysis of the signalized intersection of Bandelier Dr. / Unser Blvd. and the unsignalized intersection of Bandelier Dr. / Sagittarius Ave. to see what, if any, benefit can be derived by approving and implementing the new right-in, right-out, left-in only on Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline).

# 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 10 (BUILD 10.3.151.0) computer modeling software which approximates the Highway Capacity Manual, 6<sup>th</sup> Edition methodology. The average control delay is calculated for each intersection and for each lane group of each leg of the intersection. The control delay determines the level-of-service based on the following tables:

#### LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

<b>Average Delay</b>	Level-of-Service
(secs)	
≤ 10	Α
> 10 and ≤ 20	В
> 20 and ≤ 35	С
> 35 and ≤ 55	D
> 55 and ≤ 80	Е
> 80	F

### **LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS**

Average Delay	Level-of-Service
(secs)	
≤ 10	Α
> 10 and ≤ 15	В
> 15 and ≤ 25	С
> 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.

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

#### Intersection #3 - Bandelier Rd. / Unser Blvd. - Pages A-44 thru A-59

The following table provides a summary of the Levels-of-Service / delays associated with the 2024 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

Bandelier Dr. / Unser Blvd.	EB (	Bandelie	r Dr.)	WB (	Bandelie	er Dr.)	NB	(Unser B	lvd.)	SB (Unser Blvd.)			
2024 BUILD Conditions	L	T	Ř	L	T	R	L	Т	R	L	Т	R	
Mitigated Lane Geometry	1	1>	1	1	1	1	1	2	1	1	2	1	
AM Peak Hour													
Case "Y" - Access to Unser Blvd.	108	28	466	177	10	124	80	971	80	53	2,053	1	
V/C Ratio	0.33	0.00	0.85	0.88	0.06	0.91	0.76	0.50	0.09	0.19	1.06	0.00	
Level-of-Service	D	Α	D	Е	D	Е	D	В	Α	В	F	Α	
Control Delay (Seconds)	46.8	0.0	36.6	79.1	53.5	64.1	35.4	14.1	3.5	11.1	64.6	1.6	
Intersection LOS						D - 4	47.2						
95th Percentile Queue (veh)	6.3	0.0	11.3	12.3	0.6	8.3	2.9	11.1	0.9	1.2	56.1	0.0	
Case "N" - NO Access to Unser Blvd.	108	28	527	177	15	119	144	907	80	48	1,992	139	
V/C Ratio	0.27	0.00	0.88	0.52	0.04	0.36	0.86	0.54	0.09	0.19	1.30	0.18	
Level-of-Service	D	Α	Е	D	D	D	D	С	В	В	F	В	
Control Delay (Seconds)	35.7	0.0	55.9	37.1	38.7	42.4	46.2	20.7	10.7	17.7	172.0	14.9	
Intersection LOS					•	F - 9	98.0				•		
95th Percentile Queue (veh)	5.4	0.0	15.4	8.8	8.0	6.5	7.5	12.8	1.9	1.5	85.5	0.2	
PM Peak Hour													
Case "Y" - Access to Unser Blvd.	84	31	134	56	15	52	266	1,350	132	110	1,210	71	
V/C Ratio	0.33	0.16	0.84	0.25	0.09	0.37	0.91	0.67	0.14	0.52	0.63	0.08	
Level-of-Service	D	D	Е	D	D	Е	D	В	Α	В	В	Α	
Control Delay (Seconds)	48.4	52.2	66.2	49.5	53.3	56.2	35.3	14.8	6.6	16.0	17.3	7.3	
Intersection LOS						C - 2	21.2						
95th Percentile Queue (veh)	5.0	1.9	9.2	3.4	0.9	3.4	10.4	17.8	2.4	2.5	18.8	1.4	
Case "N" - NO Access to Unser Blvd.	84	36	190	56	20	47	330	1,286	132	106	1,153	210	
V/C Ratio	0.37	0.00	0.37	0.28	0.16	0.45	0.94	0.60	0.13	0.42	0.60	0.22	
Level-of-Service	D	Α	D	D	Е	Е	D	В	Α	В	В	Α	
Control Delay (Seconds)	51.6	0.0	44.8	52.8	57.1	60.6	46.6	11.8	5.5	11.8	17.2	8.9	
Intersection LOS	C - 20.6												

The above table demonstrates that there is a significant improvement gained during the 2024 AM Peak Hour conditions by approving and implementing the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. There is no such improvement during the PM Peak Hour but there is not a significant penalty either.

18.4

The following table provides a summary of the Levels-of-Service / delays associated with the 2040 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

95th Percentile Queue (veh)

Bandelier Dr. / Unser Blvd.	EB (E	Bandelie	er Dr.)	WB (E	Bandeli	er Dr.)	NB (	Unser E	lvd.)	SB (Unser Blvd.)			
2040 BUILD Conditions [MITIGATED]	L	T	R	L	T	R	L	T	R	L	T	R	
Existing Lane Geometry	1	1>	1	1	1	1	1	2	1	1	2	1	
AM Peak Hour													
Case "Y" - Access to Unser Blvd.	133	31	527	204	11	142	90	1,338	112	55	2,131	1	
V/C Ratio	0.36	0.00	0.87	0.90	0.06	0.93	0.78	0.70	0.12	0.29	1.13	0.00	
Level-of-Service	D	Α	D	F	D	Е	С	В	Α	В	F	Α	
Control Delay (Seconds)	45.1	0.0	35.7	81.9	52.5	64.3	33.6	18.9	3.9	17.3	94.4	1.8	
Intersection LOS						E - !	59.3						
95th Percentile Queue (veh)	7.5	0.0	12.1	13.9	0.7	9.0	2.5	16.8	1.1	1.3	66.8	0.0	
Case "N" - NO Access to Unser Blvd.	133	35	588	204	16	137	154	1,274	112	55	2,070	139	
V/C Ratio	0.34	0.00	0.79	0.90	0.09	0.92	0.87	0.68	0.12	0.28	1.21	0.14	
Level-of-Service	D	Α	С	F	D	Е	D	В	Α	В	F	Α	
Control Delay (Seconds)	43.7	0.0	29.4	83.0	53.0	64.0	44.4	19.6	4.3	17.9	130.0	2.7	
Intersection LOS			_		_	E - 1	72.1	•	_		•	_	
95th Percentile Queue (veh)	7.3	0.0	12.2	14.0	0.9	8.8	6.7	16.2	1.2	1.5	75.7	1.1	

PM Peak Hour												
Case "Y" - Access to Unser Blvd.	94	35	148	64	17	59	340	1,873	184	114	1,255	75
V/C Ratio	0.39	0.76	0.30	0.40	0.13	0.53	0.94	0.86	0.18	0.73	0.65	0.08
Level-of-Service	D	Е	D	D	Е	Е	С	В	Α	C	В	Α
Control Delay (Seconds)	50.9	64.3	43.4	53.2	56.4	61.5	33.7	17.2	5.8	33.7	19.3	8.1
Intersection LOS	C - 22.8											
95th Percentile Queue (veh)	5.5	8.0	5.0	3.9	1.0	3.9	14.1	24.2	2.3	4.6	19.7	1.5
Case "N" - NO Access to Unser Blvd.	94	40	204	64	22	54	404	1,809	184	110	1,198	214
V/C Ratio	0.40	0.00	0.37	0.30	0.17	0.50	1.11	0.83	0.18	0.67	0.63	0.23
Level-of-Service	D	Α	D	D	Е	Е	F	В	Α	C	В	Α
Control Delay (Seconds)	51.1	0.0	43.5	52.3	56.8	60.9	84.4	16.3	5.8	29.8	19.0	9.6
Intersection LOS	C - 26.3											
95th Percentile Queue (veh)	5.5	0.0	6.3	3.8	1.4	3.5	22.0	22.3	2.3	4.3	18.7	5.0

The above table demonstrates that there is a significant improvement gained during the 2040 AM Peak Hour conditions by approving and implementing the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. There is a moderate improvement during the PM Peak Hour.

#### Intersection #5 - Bandelier Dr. / Sagittarius Ave. - Pages A-44 thru A-59

The following table provides a summary of the Levels-of-Service / delays associated with the 2024 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

Bandelier Dr. / Sagittarius Ave.	EB (	Bandelie	r Dr.)	WB (	Bandelie	er Dr.)	NB (S	agittarius	s Ave.)	SB (Sagittarius Ave.)			
2024 BUILD Conditions	L	T	R	L	T	Ř	L	T	R	L	T	R	
Existing Lane Geometry	0	<1>	0	1	2>	0	0	<1>	0	0	<1>	0	
AM Peak Hour													
Case "Y" - Access to Unser Blvd.	8	278	5	22	36	43	50	3	250	73	3	8	
V/C Ratio	0.01			0.02				0.50			0.35		
Level-of-Service	Α	Α		Α				С			D		
Control Delay (Seconds)	7.4	0.0		8.0				15.4			25.3		
Intersection LOS						TW	ISC						
95th Percentile Queue (veh)	0.0			0.1				2.8			1.5		
Case "N" - NO Access to Unser Blvd.	8	278	5	22	36	251	50	3	250	138	3	8	
V/C Ratio	0.01			0.02				0.50			0.77		
Level-of-Service	Α	Α		Α				С			F		
Control Delay (Seconds)	7.9	0.0		8.0				15.5			62.8		
Intersection LOS				•		TW	ISC		•				
95th Percentile Queue (veh)	0.0			0.1				2.8			5.4		
PM Peak Hour													
Case "Y" - Access to Unser Blvd.	8	84	10	151	175	56	10	3	99	69	3	7	
V/C Ratio	0.01			0.12				0.16			0.34		
Level-of-Service	Α	Α		Α				В			D		
Control Delay (Seconds)	7.8	0.0		7.8				10.4			25.4		
Intersection LOS						TW	ISC						
95th Percentile Queue (veh)	0.0			0.4				0.6			1.4		
Case "N" - NO Access to Unser Blvd.	8	84	10	151	175	264	10	3	98	128	3	7	
V/C Ratio	0.01			0.11				0.16			0.70		
Level-of-Service	Α	Α		Α				В			F		
Control Delay (Seconds)	8.4	0.0		7.7				10.5			52.1		
Intersection LOS					-	TW	ISC						

The above table demonstrates that there is a significant improvement gained during the 2024 AM Peak Hour and 2024 PM Peak Hour conditions by approving and implementing the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. Absence of the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. will cause the access at Bandelier Dr. / Sagittarius Ave. to operate at LOS "F". Approval and construction of proposed Driveway "B" will provide badly needed relief to the alternate retail commercial driveway at Bandelier Dr. / Sagittarius Ave.

0.6

The following table provides a summary of the Levels-of-Service / delays associated with the 2040 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

95th Percentile Queue (veh)

Bandelier Dr. / Sagittarius Ave.	EB (E	Bandelie	r Dr.)	WB (E	Bandeli	er Dr.)	NB (Sa	gittariu	s Ave.)	SB (Sagittarius Av		
2040 BUILD Conditions [MITIGATED]	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	0	<1>	0	1	2>	0	0	<1>	0	0	<1>	0
AM Peak Hour												
Case "Y" - Access to Unser Blvd.	8	317	5	23	37	43	50	3	297	73	3	8
V/C Ratio	0.01			0.02				0.58			0.43	
Level-of-Service	Α	Α		Α				С			D	
Control Delay (Seconds)	7.4	0.0		8.1				18.0			34.0	
Intersection LOS						TW	ISC					
95th Percentile Queue (veh)	0.0			0.1				3.8			2.0	
Case "N" - NO Access to Unser Blvd.	8	317	5	23	37	251	50	3	297	138	3	8
V/C Ratio	0.01			0.02				0.59			0.96	
Level-of-Service	Α	Α		Α				С			F	
Control Delay (Seconds)	7.9	0.0		8.1				18.1			113.0	
Intersection LOS						TW	ISC					
95th Percentile Queue (veh)	0.0			0.1				3.8			7.4	

PM Peak Hour														
Case "Y" - Access to Unser Blvd.	8	95	10	154	185	56	10	3	116	68	3	7		
V/C Ratio	0.01			0.11				0.17			0.33			
Level-of-Service	Α	Α		Α				В			D			
Control Delay (Seconds)	7.8	0.0		7.8				10.4			25.5			
Intersection LOS	TWSC													
95th Percentile Queue (veh)	0.0			0.4				0.6			1.4			
Case "N" - NO Access to Unser Blvd.	8	95	10	154	185	264	10	3	116	128	3	7		
V/C Ratio	0.01			0.11				0.18			0.72			
Level-of-Service	Α	Α		Α				В			H			
Control Delay (Seconds)	8.4	0.0		7.8				10.5			56.7			
Intersection LOS	TWSC													
95th Percentile Queue (veh)	0.0			0.4				0.6			4.7			

Similar to the implementation year (2024) analysis, the 2040 horizon year analysis demonstrates that the proposed Driveway "B" on Unser Blvd. will provide badly needed relief to the driveway at Bandelier Dr. / Sagittarius Ave. to allow it to operate at an acceptable level-of-service especially during the PM Peak Hour period.

### Intersection #10 - Driveway "B" / Unser Blvd. - Pages A-44 thru A-59

Driveway "B" (CVS Driveway), if approved as a right-in, right-out, left-in only driveway on the west side of Unser Blvd., will need to operate at an acceptable level-of-service. The following table summarizes the calculated operational characteristics of Driveway "B" based on the implementation year (2024) AM and PM Peak Hour Periods:

FR (C	VS Driv	eway)	WB (CVS Driveway)			NB (	Unser E	3lvd.)	SB (Unser Blvd.)			
L	T	R	L	T	R	L	T	R	L	T	R	
0	0	1	0	0	1	1	2	1	1	2	1	
0	0	113	0	0	66	74	912	210	70	1,718	188	
		0.36			0.10	0.20			0.10			
		С			В	С			В			
		20.7			10.6	16.1			10.0			
					TW	ISC						
		1.6			0.3	0.7			0.3			
	L 0	L T 0 0	L T R 0 0 1 0 0 113 0 .36 C 20.7	L T R L 0 0 1 0 0 0 113 0 0.36 C 20.7	L T R L T 0 0 1 0 0 0 0 113 0 0 0 0.36 C 20.7	L T R L T R 0 0 1 0 0 1 0 0 1.0 0 1 0 0 1.13 0 0 66 0.36 0.10 C B 20.7 10.6	L T R L T R L 0 0 1 0 0 1 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1  0 0 0 113 0 0 66 74 0.36 0.10 0.20 C B C B C 20.7 10.6 16.1 TWSC	L         T         R         L         T         R         L         T           0         0         1         0         0         1         1         2           0         0         113         0         0         66         74         912           0         0.36         0.10         0.20         0	L         T         R         L         T         R         L         T         R           0         0         1         0         0         1         1         2         1           0         0         113         0         0         66         74         912         210           0         0.36         0.10         0.20         0	L         T         R         L         T         R         L         T         R         L           0         0         1         0         0         1         1         2         1         1           0         0         113         0         0         66         74         912         210         70           0         0.36         0.10         0.20         0.10         0.10           C         B         C         B         C         B           20.7         10.6         16.1         10.0         10.0           TWSC	L         T         R         L         T         R         L         T         R         L         T           0         0         1         0         0         1         1         2         1         1         2           0         0         113         0         0         66         74         912         210         70         1,718           0         0.36         0.10         0.20         0.10         0.10           C         B         C         B           20.7         10.6         16.1         10.0           TWSC	

PM Peak Hour														
2024 BUILD Volumes	0	0	100	0	0	133	86	1,333	264	108	1,241	183		
V/C Ratio			0.20			0.29	0.16			0.25				
Level-of-Service			В			В	В			В				
Control Delay (Seconds)			12.9			14.7	11.9			14.8				
Intersection LOS		TWSC												
95th Percentile Queue (veh)			0.7			1.2	0.6			1.0				

The following table provides a summary of the Levels-of-Service / delays associated with the 2040 AM Peak Hour and PM Peak Hour BUILD Conditions associated with Driveway "B":

CVS Driveway / Unser Blvd.	EB (CVS Driveway)			WB (CVS Driveway)			NB (	Unser E	lvd.)	SB (Unser Blvd.)		
2040 Conditions	L	T	R	L	T	R	L	Т	R	L	Т	R
Proposed Lane Geometry	0	0	1	0	0	1	1	2	1	1	2	1
AM Peak Hour												
2040 BUILD Conditions Volumes	0	0	113	0	0	63	74	1,332	242	80	1,913	188
V/C Ratio			0.44			0.13	0.24			0.15		
Level-of-Service			D			В	С			В		
Control Delay (Seconds)			27.4			13.0	18.8			12.2		
Intersection LOS	TWSC											
95th Percentile Queue (veh)			2.1			0.5	0.9			0.5		

PM Peak Hour												
2040 BUILD Conditions Volumes	0	0	100	0	0	128	86	1,968	305	125	1,382	183
V/C Ratio			0.22			0.54	0.15			0.69		
Level-of-Service			В			D	В			F		
Control Delay (Seconds)			14.3			34.4	11.6			56.1		
Intersection LOS	TWSC											
95th Percentile Queue (veh)			8.0			3.0	0.5			4.3		

The tables above demonstrate that the proposed Driveway "B" on the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. will operate at acceptable levels-of-service for all conditions analyzed in this Study. The southbound left turn movement into the east leg is projected to experience long delays during the PM Peak Hour by the year 2040. That particular access has already been approved and constructed and has been in operation for about eight years. It is probably the case that the long delays for the southbound left turn movement will improve when a third northbound thru lane is constructed on Unser Blvd. along this segment.

## **Findings and Conclusions**

This Study finds that the implementation of the requested right-in, right-out, left-in only driveway (known as Driveway "B" or CVS Driveway) along the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline) will provide a significant benefit to the nearby adjacent transportation system, specifically at the signalized intersection of Bandelier Dr. / Unser Blvd. and the unsignalized intersection of Bandelier Dr. / Sagittarius Ave. which serves as access to the retail commercial component to the McMahon / Unser Mixed Used Development.

Additionally, the operation of the proposed Driveway "B" as a right-in, right-out, left-in driveway is projected to be acceptable for all conditions analyzed through the Horizon Year (2040).

### **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 Driveway "B" be approved and constructed as a right-in, right-out, left-in only unsignalized driveway approximately 650 feet south of McMahon Blvd. (centerline to centerline). Driveway "B" should be designed and constructed to either align with the existing CVS Driveway on the east side of Unser Blvd. or be slightly offset to the south of the CVS Driveway so as to avoid left turn overlapping on Unser Blvd.

