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Gibson Blvd. / University Blvd. Restaurants
(SE Corner)

Traffic Impact Study

December 10, 2015

FINAL

Presented to:

City of Albuquerque
Transportation Development Section

Prepared for:

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**Gibson / University Restaurants
(SE Corner)
Traffic Impact Study**

STUDY PURPOSE

The study is being conducted in conjunction with a request for approval of a site development plan proposing a new restaurant development as shown in the Appendix (Page A-3) of this report. The purpose of this study is to identify the impact of the Development on the adjacent transportation system, and to make recommendations to mitigate any significant adverse impact on the adjacent transportation system resulting from the implementation of the site development plan. This study is being prepared to meet the requirements of the City of Albuquerque Transportation Development Section. This is a companion report to the Gibson / University Access Justification Study, dated December 10, 2015.

STUDY PROCEDURES

A scoping meeting was held with City of Albuquerque staff (Jeanne Wolfenbarger) prior to beginning the study to discuss scope and methodology to be utilized within the report. Specific items included format, intersections to be studied, intersection analysis procedures, existing traffic counts, trip distribution methodology, and implementation year definition (2017). In addition, an Access Justification Study will address the possibility of a new, left-in access at the existing right-in, right-out only drive at Gibson Blvd. / Walker Rd. See Appendix Pages A-41 thru A-43 for the City of Albuquerque Scoping Letter.

The basic procedure followed is described as follows:

1. Calculate the generated trips for the proposed development consisting of the following described land uses and approximate square footages, Appendix Pages A-6 thru A-9:
 - a) A 6,100 S.F. High Turnover Sit-down Restaurant (*Chili's*)
 - b) A 4,400 S.F. Fast Food Restaurant w/ Drive-thru Window (*TBD*)
 - c) A 4,530 S.F. Fast Food Restaurant w/ Drive-thru Window (*Chick Fil-A*)
2. Calculate trip distribution for the newly generated trips based on distribution of 2017 population data within a two mile radius, Appendix Pages A-10 thru A-13.
3. Add in previous development trips from the UNM Commercial Development at Gibson / University, Appendix Pages A-18 thru A-19.
4. Determine Trip Assignments (for 2017) for the newly generated trips based on the results of the Trip Distribution Analysis and logical routing to and from the site, Appendix Pages A-14 thru A-16.
5. Conduct new AM and PM Peak Hour turning movement counts for the intersections of Gibson Blvd. / University Blvd. and Gibson Blvd. / Walker Rd.,

Appendix Pages A-39 thru A-40. The City of Albuquerque Scoping Letter (see Appendix Pages A-41 thru A-43) stipulates that a Noon Peak Hour analysis will be required if a McDonald's Fast Food Restaurant is proposed. At this time, there are no definite plans for a McDonald's.

6. Determine historic traffic growth rate for the area based on a 2015 and 2035 AM and PM Peak Hour link volume data obtained from the Mid-Region Council of Governments' regional transportation model (2035 data set), Appendix Pages A-37 thru A-38 and A-18 thru A-23.
7. Determine 2017 NO BUILD turning movement Volumes for the intersections of Gibson Blvd. / University Blvd, Gibson Blvd. / Walker Rd. and University Blvd. / Driveway "A", Appendix Pages A-17 thru A-23. The left-in portion of the existing intersection of Gibson Blvd. / Walker Rd. will be analyzed in the Access Justification Study for the horizon year (2035).
8. Add in data from Trip Assignments Maps and Tables to the 2017 NO BUILD Volumes to obtain 2017 BUILD Volumes for this project. A pass-by trip rate of 30% was also applied to the BUILD Volumes, Appendix Pages A-17 thru A-23.
9. Provide signalized and unsignalized intersection analyses for the following intersections:

INTERSECTION	TYPE CONTROL	NO BUILD	BUILD
1) Gibson Blvd. / University Blvd.	Traffic Signal	2017	2017
2) Gibson Blvd. / Walker Rd.	Stop Sign	2017	2017
5) Driveway "A" / University Blvd.	Stop Sign	N/A	2017

PREVIOUS RELATED TRAFFIC IMPACT STUDIES

There was one other proposed development that was required to be included in the background traffic volumes for this study – the UNM Gibson Commercial Development at Gibson Blvd / University Blvd, Appendix Pages A-34 thru A-36.

GENERAL AREA CHARACTERISTICS

The proposed site development plan is for a property bounded on the north by Gibson Blvd. and bounded on the west by University Blvd. as depicted on the Vicinity Map on Page A-2 of the Appendix of this report. The total area of the requested site development plan is approximately 2.5 acres. Property in the area is a mix of residential, commercial and office. More detailed zoning information may be obtained upon inspection of the Vicinity Map on Page A-2 in the Appendix.

AREA STREET NETWORK

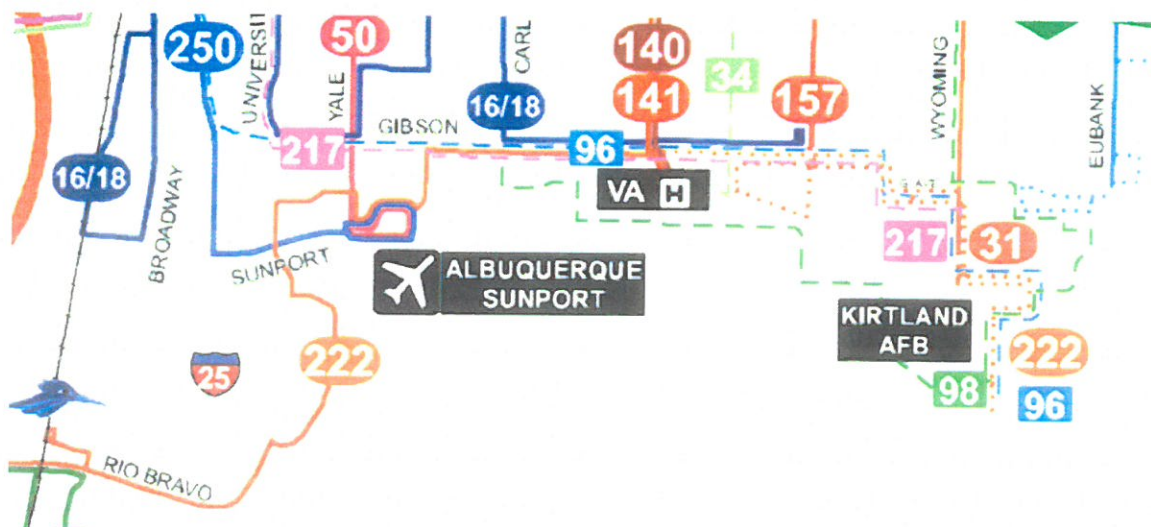
Gibson Blvd. and Louisiana Blvd are classified as a Urban Principal Arterial Roadway on the Current Roadway Functional Classification System for the ABQ Metro Planning

Area. Gibson Blvd is generally a six lane paved urban section roadway with curbs and gutters on both sides of the street and a raised median. The posted speed limit on Gibson Blvd. in the vicinity of this project is 45 MPH.

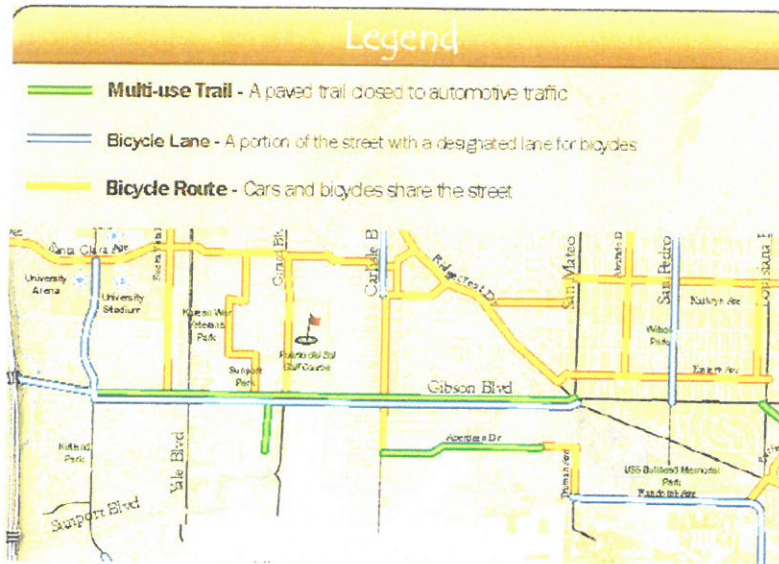
University Blvd. is classified as an Urban Minor Arterial Roadway on the Current Roadway Functional Classification System for the ABQ Metro Planning Area. The posted speed limit on University Blvd. is 40 MPH. It is generally a two lane urban roadways with curbs and gutters on both sides of the street with no median.

Walker Rd. is not classified on the Current Roadway Functional Classification System for the ABQ Metro Planning Area.

There are several ABQ Ride routes that service this area. Route 16/18 accesses the downtown area and Broadway Blvd before it heads east to University Blvd and south to Gibson Blvd. It repeats this loop every 45 minutes between 6 AM and 7 PM weekdays and has a shorter weekend schedule. Route 96 (Crosstown Commuter) has varied intervals and limited stops between Unser / Cabezon and KAFB. Route 217 (KAFB Limited) has three loops per day with limited stops, starting at the Alvarado Transportation Center downtown then south on University Blvd to Gibson Blvd and then KAFB. Route 222 has two different stop schedules with limited stops and runs from Coors / Rio Bravo thru the ABQ Sunport, north on Girard and east on Gibson to either the VA Medical Center or KAFB. (See schedules on Appendix Pages A-44 thru A-47)



In addition, there are bicycle lanes / trails in the vicinity of this project that are shown on the following map.



EXISTING TRAFFIC VOLUMES

2013 Average Weekday Traffic Volumes (AWDT) for major streets in the site plan area are shown on Page A-5 of the Appendix.

Existing AM and PM peak hour turning movement counts for the year 2015 obtained by the consulting engineer for the following intersections:

*Gibson Blvd. / University Blvd.
Gibson Blvd. / Walker Rd.
Driveway "A" / University Blvd.*

The Mid-Region Council of Governments does not provide turning movement counts any longer.

The counts are included on Appendix Pages A-39 thru A-40.

EXISTING (2014) LEVELS OF SERVICE

The Highway Capacity Manual defines Level of Service (LOS) for signalized intersections in terms of average controlled delay per vehicle as follows:

LOS A	10.0" or less	Most Vehicles do not stop
LOS B	10.1 to 20.0"	Some Vehicles stop
LOS C	20.1 to 35.0"	Significant number of vehicles stop
LOS D	35.1 to 55.0"	Many vehicles stop.
LOS E	55.1 to 80.0"	Limit of acceptable delay.
LOS F	> 80.0"	Unacceptable delay.

The Highway Capacity Manual defines Level of Service (LOS) for unsignalized intersections in terms of average controlled delay per vehicle also. However, the thresholds for the various levels of service for unsignalized intersections vary from that of signalized intersections. The following table summarizes the thresholds for various levels of service at unsignalized intersections:

LOS A	0 to 10.0"
LOS B	10 to 15"
LOS C	15 to 25"
LOS D	25 to 35"
LOS E	35 to 50"
LOS F	> 50"

Level of Service D is generally considered acceptable in urban areas and is the desirable base condition for analysis in a traffic study. In addition to consideration of the overall level-of-service of the signalized intersection, the levels-of-service of each individual movement should be considered also.

Existing Levels-of-Service were not calculated for this study. Instead, the 2017 NO BUILD and the 2017 BUILD Conditions were evaluated. The 2017 NO BUILD analysis is only two years beyond the current year. Hence, the 2017 NO BUILD analysis should approximate the existing conditions analysis.

PROPOSED DEVELOPMENT

The subject area of land targeted for the site development plan totals approximately 2.5 acres. The proposed conceptual site development plan consists of the following approximate land uses:

- a) A 6,100 S.F. High Turnover Sit-down Restaurant (Chili's)
- b) A 4,400 S.F. Fast Food Restaurant w/ Drive-thru Window (TBD)
- c) A 4,530 S.F. Fast Food Restaurant w/ Drive-thru Window (Chick Fil-A)

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 one (1) primary access point at University Blvd. / Driveway "A" and an existing right-in, right-out only driveway at Gibson Blvd. / Walker Rd. A westbound left-turn-in access is requested on Gibson Blvd. at Walker Rd.

Since Gibson Blvd. is classified as an Urban Principal Arterial roadway, then the requested left-in access at Walker Rd. will need to be approved by the Transportation Coordinating Committee (T.C.C.). A separate Access Justification Study for this project analyzes the benefits and / or impacts of implementing the left-turn-in, right-turn-in, right-turn-out driveway on Gibson Blvd at Walker Rd.

TRIP GENERATION

Projected trips were calculated from data in the Institute of Transportation Engineers Trip Generation report (9th Edition, 2012). 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. A 30% adjustment was made for Pass-by Trips in this study.

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

Gibson Blvd. / University Blvd. Development **Trip Generation Data (ITE Trip Generation Manual - 9th Edition)**

COMMENT	USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
	DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units				
Chick Fil-A	Fast Food Restaurant w/ Drive-Thru Window (934)	4.53	2,245	105	101	105
TBD	Fast Food Restaurant w/ Drive-Thru Window (934)	4.40	2,180	102	98	75
Chiles	High Turnover (Sit-Down) Restaurant (932)	6.10	776	36	30	36
Subtotal (Unadjusted Trips)			5,201	243	229	216
<i>Pass-By Trips</i>		30%		-73	-69	-65
Total Primary Trips				170	160	151

NOTE: Chick Fil-A Trips Adjusted for Local Data

COMMENT: Chick Fil-A Local Trip Data indicates that it will generate about 200+ Entering Trips / 200+ Exiting Trips during Noon Hour

Note that the above trip generation rates adjust for Pass-by Trips. See Appendix Pages A-7 thru A-9 for the Individual Trip Generation Worksheets.

TRIP DISTRIBUTION

Primary and Diverted Linked Trips:

Trips were distributed on the following basis:

Commercial

Primary and diverted linked trips for the land use development were distributed proportionally to the 2017 projected population of Data Analysis Subzones within a two-mile radius of the proposed development. Population data for the years 2015 and 2035 were taken from the 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid Regional Council of Governments (MRCOG). Population data from the years 2015 and 2035 was interpolated linearly to obtain 2017 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 on Appendix Pages A-10 thru A-13.

TRIP ASSIGNMENT

Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and logical routing. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments are shown in the Turning Movements worksheets on Appendix Pages A-14 thru A-16.

BACKGROUND TRAFFIC GROWTH

Background annual traffic growth rates were determined for the study area that was targeted for analysis based on data from the 2035 Regional Transportation Model data set from the Mid-Region Council of Governments. This study will determine the historic growth rate for each of the three or four approaches to each intersection being analyzed.

Link volumes were obtained from the model for the AM and PM Peak Hours for the years 2015 and 2035, Appendix Pages A-37 thru A-38. Those link volumes were utilized to establish a future growth rate for each leg of the intersection being analyzed in this study. The resulting calculated growth rates from the MRCOG model data grow the existing volumes to the projected 2035 volumes shown at the bottom of the individual intersection spreadsheet in the Turning Movements pages, Appendix Pages A-18 thru A-23. In cases of a negative growth rate, a minimum of 1% was used. The growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (See Appendix Pages A-18 thru A-23).

PROJECTED PEAK HOUR TURNING MOVEMENTS FOR 2017 BUILDOUT

The calculated growth rates were applied to the most recent peak hour traffic counts (conducted by the consulting engineer) to establish the 2017 background NO BUILD traffic volumes. Then the previous development volumes of the UNM Gibson Commercial Development were added to the intersection of Gibson Blvd. / University Blvd. To those 2017 NO BUILD Volumes, the generated trips based on implementation of the proposed Gibson / University Restaurants Project (100% development) were added to obtain the 2017 BUILD volumes for the intersection analyses. See Appendix Pages A-17 thru A-23 for further information regarding 2017 turning movement counts.

INTERSECTION CAPACITY ANALYSIS

Classification of levels-of-service and delay for signalized and unsignalized intersections will be made based on criteria established by Synchro, Version 8 (Build 806, Rev. 61) computer modeling software which approximates the 2010 Highway Capacity Manual methodology. The average control delay is calculated for each intersection and for each lane group of each leg of the intersection. The control delay then determines the level-of-service based on the following tables:

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 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

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

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

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

Capacity analyses were performed for the following traffic conditions:

Implementation Year (2017) - NO BUILD (proposed development not implemented)
Implementation Year (2017) - BUILD (proposed development implemented)

The results of the implementation year (2017), capacity analyses are summarized in the following sections - Results and Discussion of Intersection Capacity Analyses.

RESULTS OF SIGNALIZED INTERSECTION CAPACITY ANALYSES

IMPLEMENTATION YEAR (2017)

Intersection #1 – Gibson Blvd. / University Blvd. - Pages A-24 thru A-27

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

Intersection: 1 - GIBSON BLVD. / UNIVERSITY BLVD.

<u>2017 AM Peak Hour BUILD</u>				<u>2017 PM Peak Hour BUILD</u>			
		(EXIST. GEOM.) NO BUILD	Case "Y" BUILD			(EXIST. GEOM.) NO BUILD	Case "Y" BUILD
		Lanes LOS-Delay	Lanes LOS-Delay			Lanes LOS-Delay	Lanes LOS-Delay
EB	L	1 A - 9.9	1 B - 11.0	L	1 C - 23.5	1 C - 27.1	
	T	3 B - 18.3	3 C - 21.5	T	3 B - 12.0	3 B - 13.8	
	R	1 A - 9.2	1 B - 10.5	R	1 A - 9.5	1 B - 11.3	
WB	L	1 B - 12.0	1 B - 13.6	L	1 A - 8.5	1 A - 10.0	
	T	3 B - 12.4	3 B - 13.8	T	3 C - 21.4	3 C - 26.6	
	R	1 B - 10.4	1 B - 11.6	R	1 B - 10.8	1 B - 12.5	
NB	L	1 C - 22.3	1 C - 24.5	L	1 C - 26.8	1 C - 28.4	
	T	1 A - 0.0	1 A - 0.0	T	1 A - 0.0	1 A - 0.0	
	R	> C - 21.2	> C - 21.1	R	> C - 25.2	> C - 23.8	
SB	L	1 C - 27.4	1 C - 30.1	L	1 D - 40.5	1 D - 39.3	
	T	1 C - 20.4	1 C - 20.2	T	1 C - 24.2	1 C - 22.8	
	R	1 B - 17.0	1 B - 16.3	R	1 C - 22.4	1 C - 20.5	
Intersection:		B - 16.5	B - 18.9			B - 19.4	C - 22.6

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

The implementation year analysis of the intersection of Gibson Blvd. / University Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. The implementation year analysis shows that the proposed development increases the overall intersection delay by only 2.4 seconds during the AM Peak Hour and by only 3.2 seconds during the PM Peak Hour. Therefore, this study concludes that the development presents minimal impact to the calculated delays at the intersection of Gibson Blvd. / University Blvd. and no recommendations are made.

The following table summarizes the results of the queuing analysis for this intersection:

Queueing Analysis Summary Sheet

Project: Gibson / University Restaurants (SE Corner)
 Intersection: Gibson Blvd. / University Blvd.

2017

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	175	230	3	1,842	Cont	1	28	170
AM NO BUILD Queue	1	186	175	3	1,959	525	1	30	50
AM BUILD Queue	1	186	175	3	1,976	525	1	70	75
Existing Lane Length	1	132	230	3	969	Cont	1	56	170
PM NO BUILD Queue	1	136	150	3	1,106	375	1	57	75
PM BUILD Queue	1	136	150	3	1,121	375	1	93	125
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	21	150	3	988	Cont	1	119	140
AM NO BUILD Queue	1	26	50	3	1,090	325	1	121	125
AM BUILD Queue	1	26	50	3	1,067	325	1	121	125
Existing Lane Length	1	62	150	3	2,054	Cont	1	210	140
PM NO BUILD Queue	1	74	100	3	2,236	650	1	214	225
PM BUILD Queue	1	74	100	3	2,197	650	1	214	225
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	76	80	1	20	Cont	0	36	0
AM NO BUILD Queue	1	80	100	1	21	50	0	38	50
AM BUILD Queue	1	155	150	1	61	75	0	38	50
Existing Lane Length	1	60	80	1	20	Cont	0	49	0
PM NO BUILD Queue	1	75	100	1	25	50	0	62	100
PM BUILD Queue	1	155	175	1	59	75	0	62	100
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	166	210	1	13	Cont	1	74	110
AM NO BUILD Queue	1	198	175	1	15	25	1	88	100
AM BUILD Queue	1	211	200	1	45	75	1	88	100
Existing Lane Length	1	183	210	1	34	Cont	1	118	110
PM NO BUILD Queue	1	229	225	1	43	75	1	148	175
PM BUILD Queue	1	240	225	1	70	100	1	148	175

Cycle Length: AM 70 PM 80

NOTE: Queue lengths are in feet.

Calculated Right Turn Queue Lengths can be reduced by 50% to account for right-turns-on-red and right turn overlaps.

The queueing analysis recommends lengthening the northbound left turn lane from 80 feet to 175 feet plus transition. According to aerial photography, it appears that this improvement could be constructed in the existing pavement section. However, the existing raised median in University Blvd. would need to be reconfigured or possibly eliminated. This report recommends that the existing northbound left turn lane be

lengthened as much as possible. See Appendix Page A-48 for schematic drawing of lengthened turn lane and striping.

RESULTS OF UNSIGNALIZED INTERSECTION CAPACITY ANALYSES

Intersection #2 - Gibson Blvd. / Walker Rd. - Pages A-28 thru A-31

The results of the analysis of the unsignalized intersection of Gibson Blvd. / Walker Rd. are summarized in the following table:

Intersection: 2 - GIBSON BLVD. / WALKER RD.

2017 AM Peak Hour BUILD						2017 PM Peak Hour BUILD					
		(EXIST. GEOM.)		CASE "Y"				(EXIST. GEOM.)		CASE "Y"	
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes LOS-Delay		Lanes LOS-Delay				Lanes LOS-Delay		Lanes LOS-Delay	
EB	T	3	A - 0.0	3	A - 0.0	T	3	A - 0.0	3	A - 0.0	
	R	1	A - 0.0	1	A - 0.0	R	1	A - 0.0	1	A - 0.0	
WB	L		A - 0.0	1	B - 13	L	0	A - 0.0	1	B - 10.8	
	T	3	A - 0.0	3	A - 0.0	T	3	A - 0.0	3	A - 0.0	
NB	R	1	D - 27.9	1	C - 16.0	R	1	C - 18.1	1	B - 12.5	
	Intersection:		u - 0.0		u - 0.8		u - 0.1		u - 0.5		

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

The intersection of Gibson Blvd. is an existing right-in, right-out only unsignalized driveway. The Access Justification Study, dated April 8, 2015 which is the companion report to this report, recommends making this intersection a right-in, right-out, left-in only unsignalized intersection. The implementation year analysis of the intersection of Gibson Blvd. / Walker Rd. demonstrates that the level-of-service and delays will be acceptable during the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. Therefore, this study concludes that the development presents minimal impact to the calculated delays at the intersection of Gibson Blvd. / Walker Rd. and no recommendations are made, besides adding the westbound left-in. The westbound left turn bay should be 150 feet long plus transition.

Intersection #3 - Driveway "A" / University Blvd. - Pages A-32 thru A-33

The results of the analysis of the unsignalized intersection of Driveway "A" / University Blvd. are summarized in the following table:

Intersection: 3 - DRIVEWAY "A" / UNIVERSITY BLVD.

2017 AM Peak Hour BUILD						2017 PM Peak Hour BUILD					
		(EXIST. GEOM.)		CASE "Y"				(EXIST. GEOM.)		CASE "Y"	
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
WB	L	1	A - 0.0	1	A - 9.9	L	1	A - 0.0	1	B - 10.1	
	R	>	A - 0.0	>	A - 9.9	R	>	A - 0.0	>	B - 10.1	
NB	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	1	A - 0.0	1	A - 7.7	L	1	A - 0.0	1	A - 7.7	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
Intersection:		u - 0.0		u - 4.6				u - 0.0		u - 3.6	

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

The intersection of Driveway "A" / University Blvd. is proposed as a full access unsignalized driveway. The implementation year analysis of the intersection of Driveway "A" / University Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour BUILD conditions. According to the 2040 Long Range Roadway System Map from the Mid Region Metropolitan Planning Organization, University Blvd.'s designation as a Minor Arterial ends at Gibson Blvd. and does not begin again until further south of the project area. Therefore, a left turn bay is not required into driveway "A". Therefore, this study makes no recommendations for the intersection of Driveway "A" / University Blvd.

CONCLUSIONS

The results of this analysis of the adjacent transportation system associated with this proposed commercial development indicate that there is minimal impact to the adjacent transportation system.

This Traffic Impact Study assumes that a westbound left turn in movement off of Gibson Blvd. at Walker Rd. will be approved by the City and the Transportation Coordinating Committee. A companion to this Study is the Gibson Blvd. / University Blvd. Restaurants Access Justification Study which makes the case for approval of the requested westbound left turn in movement off of Gibson Blvd. at Walker Rd. Walker Rd. is currently a right-in, right-out only intersection.

In summary, the proposed site development plan for the Gibson / University Restaurants Project presents minimal adverse impact to the adjacent transportation system provided that the following recommendations are followed:

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- Design and construction of the proposed development should be such that adequate sight distances are maintained at all proposed driveways and intersections, and at existing intersections contingent to this site.
- Access to the project should be via one existing unsignalized intersection at Gibson Blvd. / Walker Rd., which will be constructed as a right-in, right-out, left-in only driveway and one full access unsignalized intersection along University Blvd. (Driveway "A"). Driveway "A" should be constructed with one entering lane and one exiting lane. All driveways accessing this development should be constructed in compliance with City of Albuquerque D.P.M. requirements.
- **Gibson Blvd. / University Blvd.** – Construct a 175 foot northbound left turn lane by reconfiguring the existing median in University Blvd. If the 175 feet length cannot be achieved, then lengthen the northbound left turn lane as much as possible.
- **Gibson Blvd. / Walker Rd.** – Construct westbound left turn bay, 150 foot long plus transition.

Appendix

<u>SITE INFORMATION</u>	
Aerial Map	A-1
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Conceptual Site Development Plan	A-3
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APPENDIX

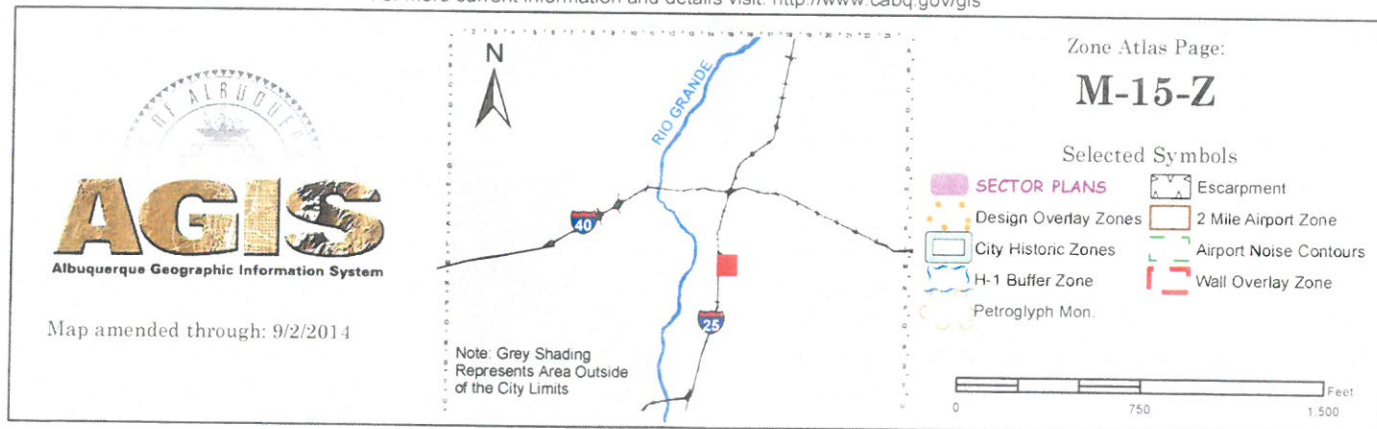


Gibson / University Restaurants

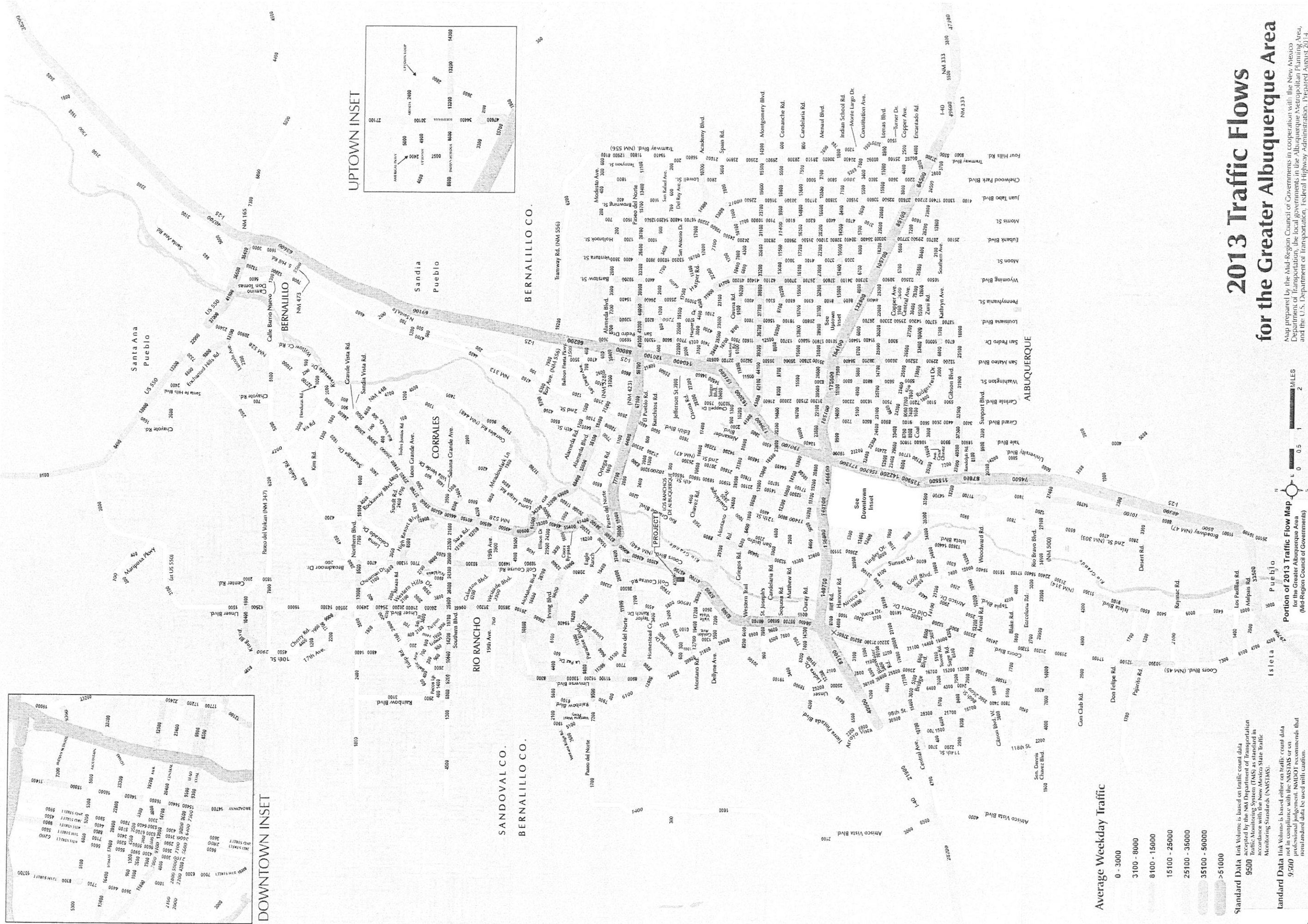
**(SE Corner)
Aerial Map**



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



[illegible]
$$= \frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} e^{-t^2} dt = 1$$

2013 Traffic Flows for the Greater Albuquerque Area

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. Prepared August 2014.

Standard Data 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).

Standard Data Link Volume is based either on traffic count data not in compliance with the NMSTMS or on professional judgement. NMSTMS recommends that non-standard data be used with caution.

Gibson Blvd. / University Blvd. Development

Trip Generation Data (ITE Trip Generation Manual - 9th Edition)

COMMENT	USE (ITE CODE)	DESCRIPTION	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
			GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet								
				Units				
Chick Fil-A		Fast Food Restaurant w/ Drive-Thru Window (934)	4.53	2,245	105	101	105	101
TBD		Fast Food Restaurant w/ Drive-Thru Window (934)	4.40	2,180	102	98	75	69
Chiles		High Turnover (Sit-Down) Restaurant (932)	6.10	776	36	30	36	24
		Subtotal (Unadjusted Trips)		5,201	243	229	216	194
		<i>Pass-By Trips</i>	30%		-73	-69	-65	-58
		Total Primary Trips			170	160	151	136

NOTE: Chick Fil-A Trips Adjusted for Local Data

COMMENT: Chick Fil-A Local Trip Data indicates that it will generate about 200+ Entering Trips / 200+ Exiting Trips during Noon H

*Gibson Blvd. / University Blvd. Development
Trip Generation Data (ITE Trip Generation Manual - 9th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT	ENTER
Units						
4.53						
2,245						
105						
101						
101						

Fast Food Restaurant w/ Drive-Thru Window (934)
(Adjusted for Chick Fil-A - Local Data)

1,000 S.F.

ITE Trip Generation Equations:

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

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

50% Enter, 50% Exit

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

$$T = 45.42 (X) + 0$$

51% Enter, 49% Exit

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

$$T = 32.65 (X) + 0$$

52% Enter, 48% Exit

Comments:
Chick Fil-A

Based on ITE Trip Generation Manual - 9th Edition

Gibson Blvd. / University Blvd. Development Trip Generation Data (ITE Trip Generation Manual - 9th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT

GROSS	2,180	102	98	75	69
-------	-------	-----	----	----	----

Units

Fast Food Restaurant w/ Drive-Thru Window (934)

4.40

1,000 S.F.

ITE Trip Generation Equations:

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

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

50% Enter, 50% Exit

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

$$T = 45.42 (X) + 0$$

51% Enter, 49% Exit

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

$$T = 32.65 (X) + 0$$

52% Enter, 48% Exit

Comments:
McDonald's

Based on ITE Trip Generation Manual - 9th Edition

*Gibson Blvd. / University Blvd. Development
Trip Generation Data (ITE Trip Generation Manual - 9th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units 6.10 1,000 S.F.					
High Turnover (Sit-Down) Restaurant (932)	776	36	30	36	24

ITE Trip Generation Equations:

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

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

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

$$T = \frac{10.81 (X) + 0}{55\% \text{ Enter, } 45\% \text{ Exit}}$$

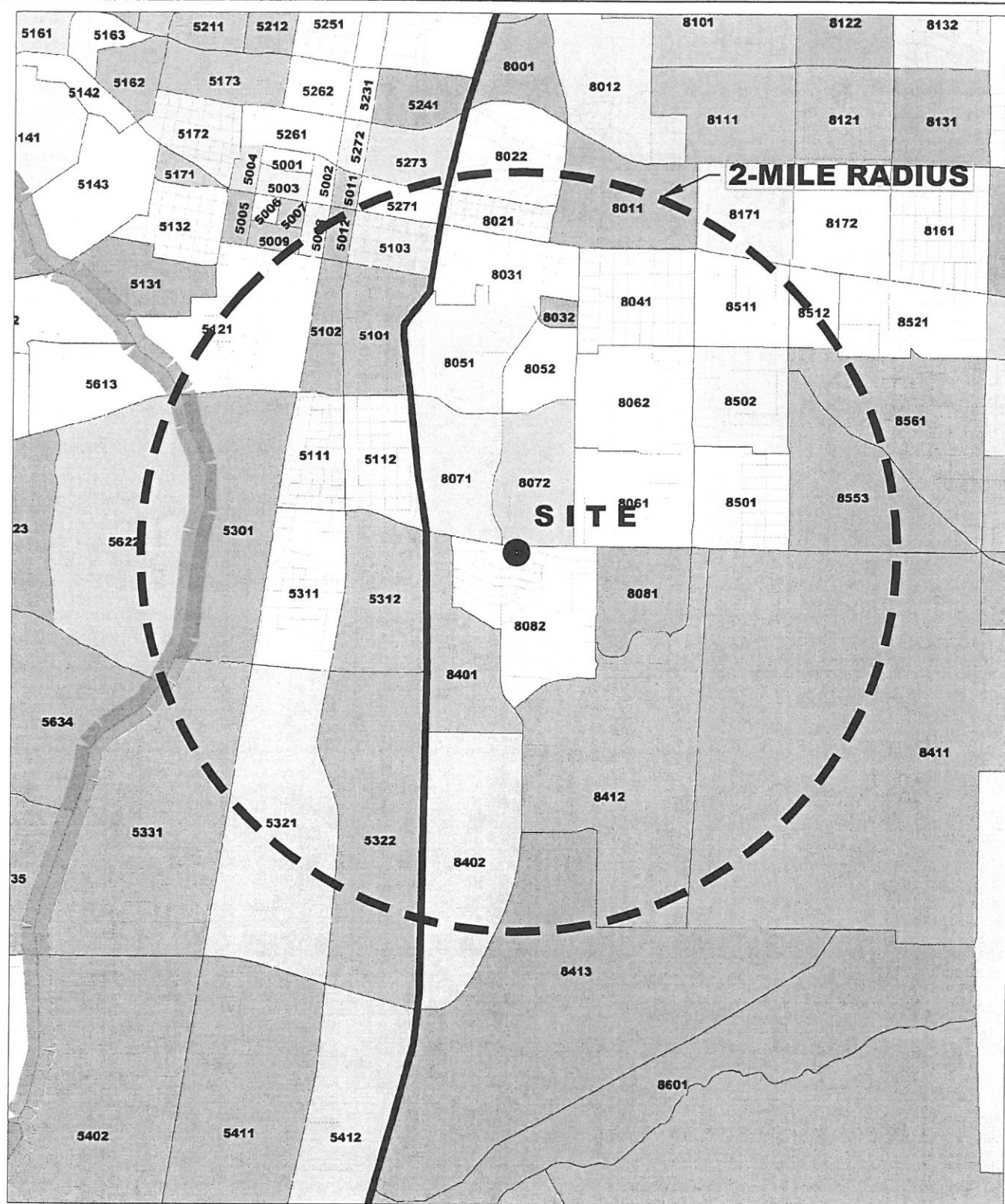
Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{9.85 (X) + 0}{60\% \text{ Enter, } 40\% \text{ Exit}}$$

Comments:

Chiles

Based on ITE Trip Generation Manual - 9th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP
Gibson / University Restaurants (SE Corner)

Trip Distribution Table

Gibson / University Restaurants (SE Corner)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2015 Population		2025 Population	Interpolated Population for the Year 2017	Population in Study	Percent Population	(UN)			(GE)		
		2015		2025				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map													
5008	40%	228	220	220	226	90	0.26%	50%	0.13%	45	0%	0.00%	0
5012	80%	26	473	473	115	92	0.26%	50%	0.13%	46	0%	0.00%	0
5101	100%	2009	2146	2146	2,036	2,036	5.86%	0%	0.00%	0	0%	0.00%	0
5102	100%	569	558	558	567	567	1.63%	0%	0.00%	0	0%	0.00%	0
5103	100%	1071	1224	1224	1,102	1,102	3.17%	50%	1.59%	551	0%	0.00%	0
5111	100%	1294	1249	1249	1,285	1,285	3.70%	0%	0.00%	0	0%	0.00%	0
5112	100%	1839	1963	1963	1,864	1,864	5.37%	0%	0.00%	0	0%	0.00%	0
5121	70%	2930	3948	3948	3,134	2,194	6.32%	0%	0.00%	0	0%	0.00%	0
5271	70%	1000	994	994	999	699	2.01%	50%	1.01%	350	0%	0.00%	0
5301	100%	19	21	21	19	19	0.05%	50%	0.03%	10	0%	0.00%	0
5311	100%	1425	1393	1393	1,419	1,419	4.09%	0%	0.00%	0	0%	0.00%	0
5312	100%	223	214	221	221	221	0.64%	0%	0.00%	0	0%	0.00%	0
5321	65%	0	230	230	46	30	0.09%	0%	0.00%	0	0%	0.00%	0
5322	80%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
5331	20%	354	343	343	352	70	0.20%	0%	0.00%	0	0%	0.00%	0
5622	35%	2776	2744	2744	2,770	970	2.79%	50%	1.40%	485	0%	0.00%	0
8011	60%	2675	3894	3894	2,919	1,751	5.04%	50%	2.52%	876	50%	2.52%	876
8021	100%	785	823	823	793	793	2.28%	100%	2.28%	793	0%	0.00%	0
8022	30%	929	1166	1166	978	293	0.84%	100%	0.84%	293	0%	0.00%	0
8031	100%	1721	1707	1707	1,718	1,718	4.95%	100%	4.95%	1,718	0%	0.00%	0
8032	100%	0	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0
8041	100%	2724	2665	2665	2,712	2,712	7.81%	50%	3.90%	1,356	50%	3.90%	1,356
8051	100%	0	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0
8052	100%	462	447	447	459	459	1.32%	100%	1.32%	459	0%	0.00%	0
8061	100%	1188	1265	1265	1,203	1,203	3.46%	0%	0.00%	0	100%	3.46%	1,203
8062	100%	2681	2594	2594	2,664	2,664	7.67%	0%	0.00%	0	100%	7.67%	2,664
8071	100%	773	2580	2580	1,134	1,134	3.26%	50%	1.63%	567	0%	0.00%	0
8072	100%	1227	1397	1397	1,261	1,261	3.63%	50%	1.82%	631	50%	1.82%	631
8081	100%	39	38	38	39	39	0.11%	0%	0.00%	0	100%	0.11%	39
8082	100%	1095	1055	1055	1,087	1,087	3.13%	0%	0.00%	0	50%	1.56%	544
8171	10%	1057	1113	1113	1,068	107	0.31%	0%	0.00%	0	100%	0.31%	107
8401	100%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
8402	80%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
8411	35%	501	496	496	500	175	0.50%	0%	0.00%	0	100%	0.50%	175
8412	95%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0
8413	10%	0	753	753	151	15	0.04%	0%	0.00%	0	0%	0.00%	0
8501	100%	1847	1951	1951	1,868	1,868	5.38%	0%	0.00%	0	100%	5.38%	1,868
8502	100%	1186	1149	1149	1,179	1,179	3.39%	0%	0.00%	0	100%	3.39%	1,179
8511	95%	1184	1164	1164	1,180	1,121	3.23%	50%	1.61%	561	50%	1.61%	561
8512	35%	395	371	371	390	137	0.39%	0%	0.00%	0	100%	0.39%	137
8553	75%	2277	2269	2269	2,275	1,706	4.91%	0%	0.00%	0	100%	4.91%	1,706
8561	25%	2624	2579	2579	2,615	654	1.88%	0%	0.00%	0	100%	1.88%	654
						34,734	100.00%				8,739		
						44,346					25.16%		
												13,698	39.44%

TD_Comm xlsx

Trip Distribution Table

Gibson / University Restaurants (SE Corner)

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

2015 and 2025 Data Taken from Mid-Region Council of Governments'
2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2015 Population		Interpolated Population for the Year 2017	Population in Study	Percent Population	(US)			(GW)			
		2015	2025				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	
Boundary Specified on DASZ Map													
5008	40%	228	220	226	90	0.26%	0%	0.00%	0	50%	0.13%	45	
5012	80%	26	473	115	92	0.26%	0%	0.00%	0	50%	0.13%	46	
5101	100%	2009	2146	2,036	2,036	5.86%	0%	0.00%	0	100%	5.86%	2,036	
5102	100%	569	558	567	567	1.63%	0%	0.00%	0	100%	1.63%	567	
5103	100%	1071	1224	1,102	1,102	3.17%	0%	0.00%	0	50%	1.59%	551	
5111	100%	1294	1249	1,285	1,285	3.70%	0%	0.00%	0	100%	3.70%	1,285	
5112	100%	1839	1963	1,864	1,864	5.37%	0%	0.00%	0	100%	5.37%	1,864	
5121	70%	2930	3948	3,134	2,194	6.32%	0%	0.00%	0	100%	6.32%	2,194	
5271	70%	1000	994	999	699	2.01%	0%	0.00%	0	50%	1.01%	350	
5301	100%	19	21	19	19	0.05%	0%	0.00%	0	50%	0.03%	10	
5311	100%	1425	1393	1,419	1,419	4.09%	0%	0.00%	0	100%	4.09%	1,419	
5312	100%	223	214	221	221	0.64%	0%	0.00%	0	100%	0.64%	221	
5321	65%	0	230	46	30	0.09%	0%	0.00%	0	100%	0.09%	30	
5322	80%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	
5331	20%	354	343	352	70	0.20%	100%	0.20%	70	0%	0.00%	0	
5622	35%	2776	2744	2,770	970	2.79%	0%	0.00%	0	50%	1.40%	485	
8011	60%	2675	3894	2,919	1,751	5.04%	0%	0.00%	0	0%	0.00%	0	
8021	100%	785	823	793	793	2.28%	0%	0.00%	0	0%	0.00%	0	
8022	30%	929	1166	976	293	0.84%	0%	0.00%	0	0%	0.00%	0	
8031	100%	1721	1707	1,718	1,718	4.95%	0%	0.00%	0	0%	0.00%	0	
8032	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	
8041	100%	2724	2665	2,712	2,712	7.81%	0%	0.00%	0	0%	0.00%	0	
8051	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	
8052	100%	462	447	459	459	1.32%	0%	0.00%	0	0%	0.00%	0	
8061	100%	1188	1265	1,203	1,203	3.46%	0%	0.00%	0	0%	0.00%	0	
8062	100%	2681	2594	2,664	2,664	7.67%	0%	0.00%	0	0%	0.00%	0	
8071	100%	773	2580	1,134	1,134	3.26%	0%	0.00%	0	50%	1.63%	567	
8072	100%	1227	1397	1,261	1,261	3.63%	0%	0.00%	0	0%	0.00%	0	
8081	100%	39	38	39	39	0.11%	0%	0.00%	0	0%	0.00%	0	
8082	100%	1095	1055	1,087	1,087	3.13%	50%	1.56%	544	0%	0.00%	0	
8171	10%	1057	1113	1,068	107	0.31%	0%	0.00%	0	0%	0.00%	0	
8401	100%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	
8402	80%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	
8411	35%	501	496	500	175	0.50%	0%	0.00%	0	0%	0.00%	0	
8412	95%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	
8413	10%	0	753	151	15	0.04%	100%	0.04%	15	0%	0.00%	0	
8501	100%	1847	1951	1,868	1,868	5.38%	0%	0.00%	0	0%	0.00%	0	
8502	100%	1186	1149	1,179	1,179	3.39%	0%	0.00%	0	0%	0.00%	0	
8511	95%	1184	1164	1,180	1,121	3.23%	0%	0.00%	0	0%	0.00%	0	
8512	35%	395	371	390	137	0.39%	0%	0.00%	0	0%	0.00%	0	
8553	75%	2277	2269	2,275	1,706	4.91%	0%	0.00%	0	0%	0.00%	0	
8561	25%	2624	2579	2,615	654	1.88%	0%	0.00%	0	0%	0.00%	0	
					44,346	34,734	100.00%				629	1.81%	11,669
													33.60%
TD Comm.xlsx													

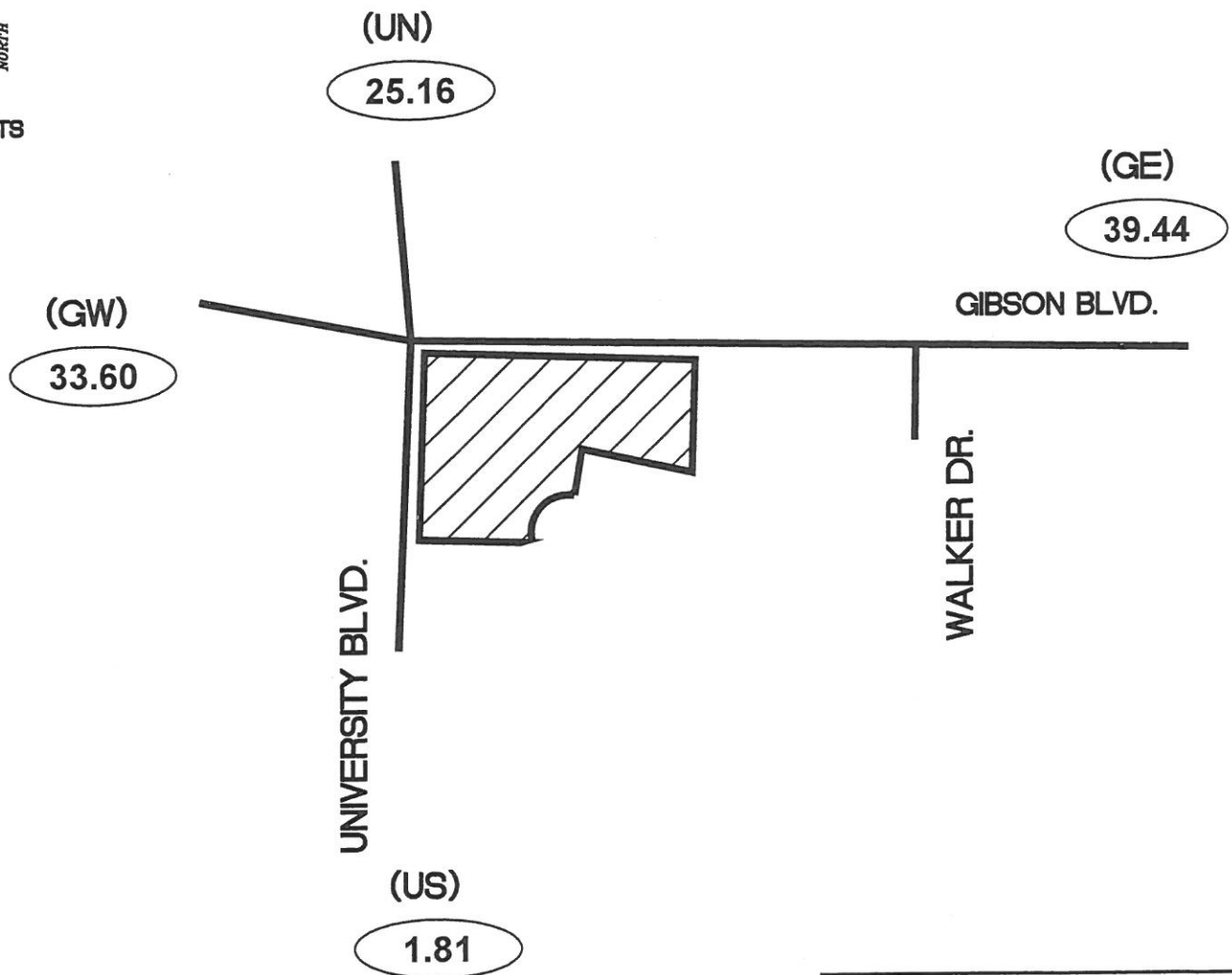
Gibson Blvd. / University Blvd. Restaurants

(SE Corner)

Trip Distribution Map (%)



NTS



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

Gibson Blvd. / University Blvd. Restaurants

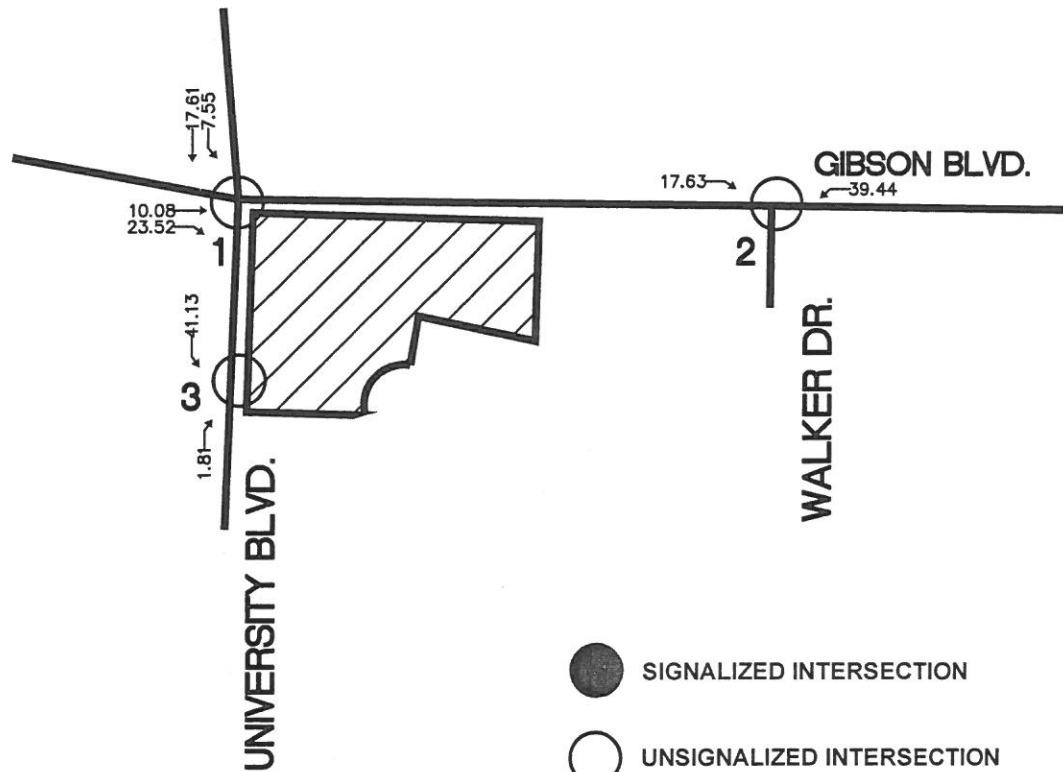
(SE Corner)

Trip Assignments (% Entering)

Case "Y" - Left-in at Walker



NTS



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Gibson Blvd. / University Blvd. Restaurants

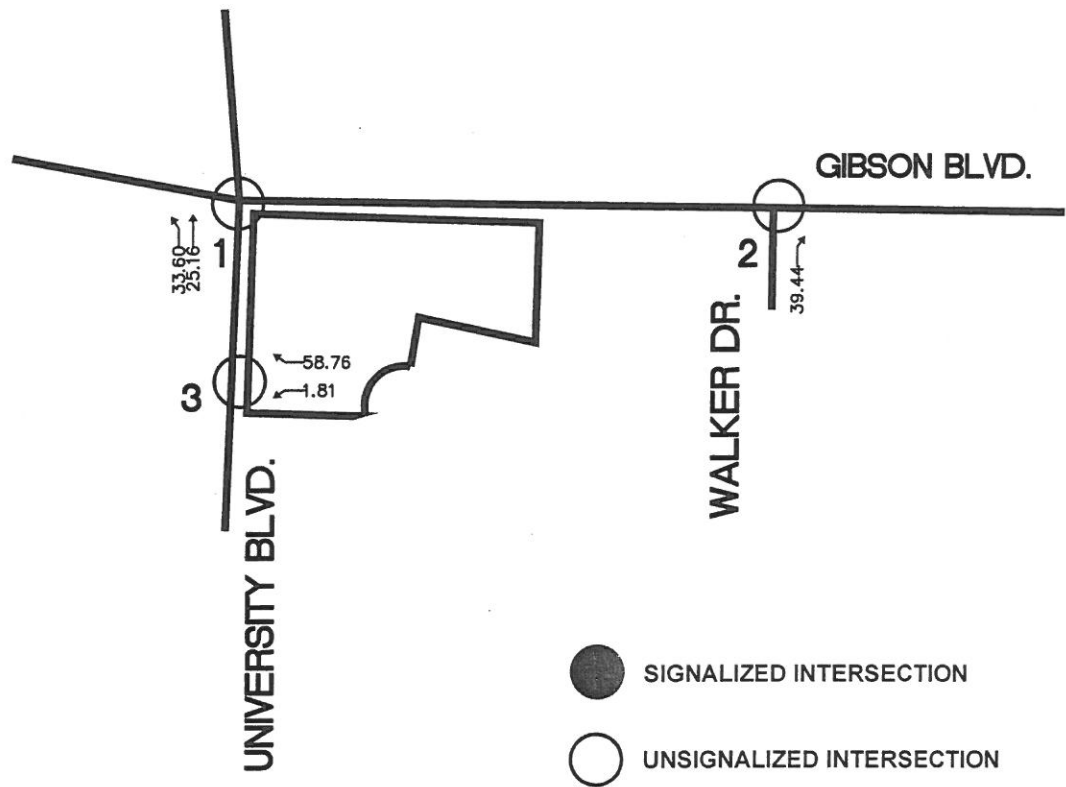
(SE Corner)

Trip Assignments (% Exiting)

Either Case



NTS



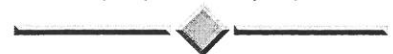
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Gibson Blvd. / University Blvd. Restaurants

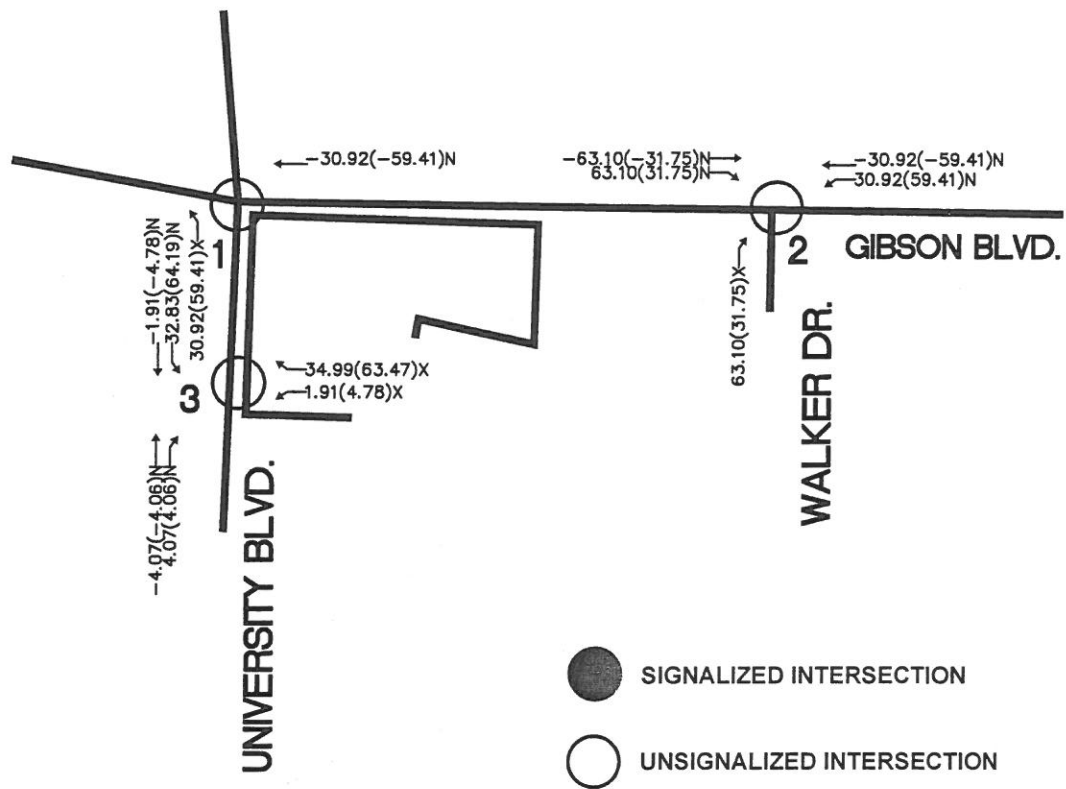
(SE Corner)

Passby Trip Assignments

Case "Y" - Left-in at Walker



NTS



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Gibson / University Restaurants (SE Corner)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2017) - 100% Development

Case "Y" - Left-in at Walker

INTERSECTION: Summary

Gibson Blvd. / University Blvd.		0.95			0.95			0.95			0.95			PHF
(1)		Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (University Blvd.)			Southbound (University Blvd.)			
	3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	Existing (2015)	175	1,842	28	21	988	119	76	20	36	166	13	74	
	2017 (NO BUILD - A.M.)	186	1,959	30	26	1,090	121	80	21	38	198	15	88	
	2017 (BUILD - A.M.)	186	1,976	70	26	1,067	121	155	61	38	211	45	88	

		0.96			0.96			0.96			0.96			PHF
		Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (University Blvd.)			Southbound (University Blvd.)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2015) 2017 (NO BUILD - P.M.) 2017 (BUILD - P.M.)		132	969	56	62	2,054	210	60	20	49	183	34	118	
		136	1,106	57	74	2,236	214	75	25	62	229	43	148	
		136	1,121	93	74	2,197	214	155	59	62	240	70	148	

Gibson Blvd. / Walker Rd.		0.90			0.90			0.90			0.90			PHF
(2)		Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)			
	3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2015)		0	0	125	0	0	0	0	0	5	0	0	0	
2017 (NO BUILD - A.M.)		0	2,070	130	0	1,237	0	0	0	5	0	0	0	
2017 (BUILD - A.M.)		0	2,024	206	90	1,301	0	0	0	112	0	0	0	

	0.97			0.97			0.97			0.97			PHF
	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2015)	0	0	24	0	0	0	0	0	21	0	0	0	0
2017 (NO BUILD - P.M.)	0	1,483	25	0	2,676	0	0	0	21	0	0	0	0
2017 (BUILD - P.M.)	0	1,462	73	99	2,637	0	0	0	93	0	0	0	0

Driveway "A" / University Blvd.		0.85			0.85			0.95			0.95			PHF
(3)		Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (University Blvd.)			Southbound (University Blvd.)			
	3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	Existing (2015)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2017 (NO BUILD - A.M.)	0	0	0	0	0	0	0	139	0	0	71	0	0
	2017 (BUILD - A.M.)	0	0	0	4	0	118	0	136	6	71	70	0	0

		0.85			0.85			0.96			0.96			PHF
		Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (University Blvd.)			Southbound (University Blvd.)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2015) 2017 (NO BUILD - P.M.) 2017 (BUILD - P.M.)		0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	162	0	0	174	0	0
		0	0	0	5	0	117	0	159	6	65	171	0	0

Gibson / University Restaurants (SE Corner)
Projected Turning Movements Worksheet
Gibson Blvd. / University Blvd.

INTERSECTION: E-W Street: Gibson Blvd. (1)
 N-S Street: University Blvd.

Year of Existing Counts: 2015
 Implementation Year: 2017

	3.05%			1.00%			2.61%			9.57%		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	175	1,842	28	21	988	119	76	20	36	166	13	74
Background Traffic Growth	11	112	2	0	20	2	4	1	2	32	2	14
Subtotal	186	1,954	30	21	1,008	121	80	21	38	198	15	88
UNM Gibson Commercial Development	0	5	0	5	82	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	186	1,959	30	26	1,090	121	80	21	38	198	15	88
Percent Commercial Trips Generated(Entering)	0.00%	10.08%	23.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.55%	17.61%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.60%	25.16%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	17	40	0	0	0	54	40	0	13	30	0
Subtotal AM Pk Hr. BUILD Volumes	186	1,976	70	26	1,090	121	134	61	38	211	45	88
Pass-by Trip Adjustments	0	0	0	0	-23	0	21	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	186	1,976	70	26	1,067	121	155	61	38	211	45	88

	1.33%			1.00%			12.79%			12.51%		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	132	969	56	62	2,054	210	60	20	49	183	34	118
Background Traffic Growth	4	26	1	1	41	4	15	5	13	46	9	30
Subtotal	136	995	57	63	2,095	214	75	25	62	229	43	148
UNM Gibson Commercial Development	0	111	0	11	141	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	136	1,106	57	74	2,236	214	75	25	62	229	43	148
Percent Commercial Trips Generated(Entering)	0.00%	10.08%	23.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.55%	17.61%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.60%	25.16%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	15	36	0	0	0	46	34	0	11	27	0
Subtotal PM Pk Hr. BUILD Volumes	136	1,121	93	74	2,236	214	121	59	62	240	70	148
Pass-by Trip Adjustments	0	0	0	0	-39	0	34	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	136	1,121	93	74	2,197	214	155	59	62	240	70	148

Number of Commercial Trips Generated: Entering 170, Exiting 160 A.M. 100% Commercial Development
 151, 136 P.M.

	Eastbound (Gibson Blvd.)	Westbound (Gibson Blvd.)	Northbound (University Blvd.)	Southbound (University Blvd.)
2015 AM Peak Hr. Volumes	175	1842	28	21
2015 PM Peak Hr. Volumes	132	969	56	62

MRCOG Forecast Volumes Worksheet

Based on 2015 Traffic Count

2015 AM Link Volume	2,045	1,128	132	253
2015 PM Link Volume	1,157	2,326	129	335

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume	2359	778	216	337
2015 PM Link Volume	1368	1773	418	332
2035 AM Link Volume	3293	839	201	737
2035 PM Link Volume	1464	2663	459	1173

Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2015-2035 AM Growth Rates	3.05%	-1.28%	2.61%	9.67%
2015-2035 PM Growth Rates	1.33%	0.72%	12.79%	12.51%

Growth Rate to Apply to 2015 Model Volumes to Match 2035 Forecasts

2015-2035 AM Growth Rates	1.98%	0.39%	-0.35%	5.93%
2015-2035 PM Growth Rates	0.35%	2.51%	0.49%	12.67%

Pass-by Trip Calculations:

AM Pass-by Trips

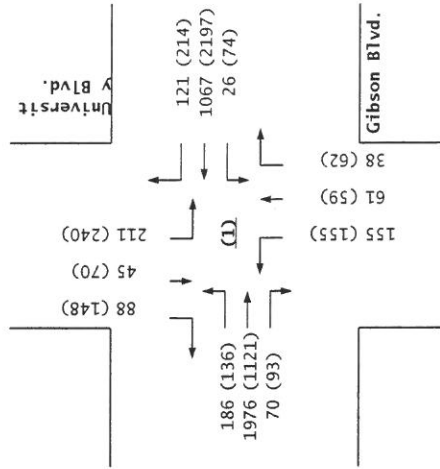
	Eastbound (Gibson Blvd.)	Westbound (Gibson Blvd.)	Northbound (University Blvd.)	Southbound (University Blvd.)
Percent Entering	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	-23	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	21
Net AM Passby Trips	0	0	-23	21

PM Pass-by Trips

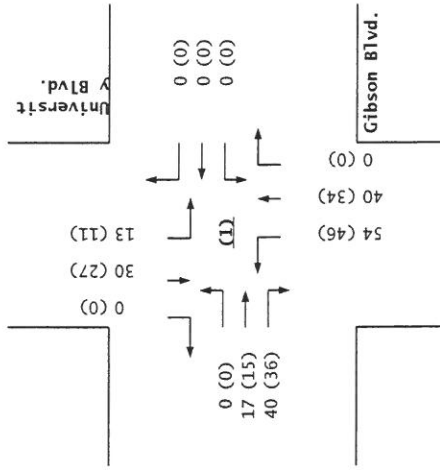
	Eastbound (Gibson Blvd.)	Westbound (Gibson Blvd.)	Northbound (University Blvd.)	Southbound (University Blvd.)
Percent Entering	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	-39	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	34
Net PM Passby Trips	0	0	-39	34

Pass-by Trips: Entering 73, Exiting 69 AM
 65, 58 PM

2017
BUILD

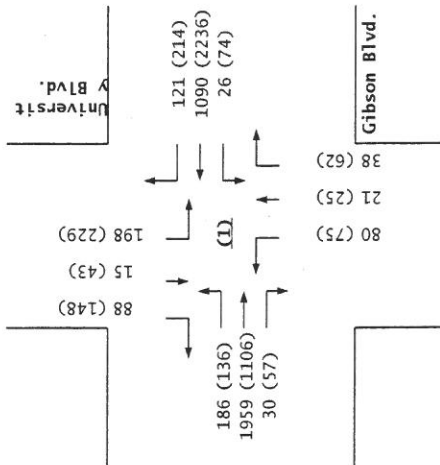


Trips



Gibson Blvd. / University Blvd.

2017
NO BUILD



Gibson / University Restaurants (SE Corner)

Projected Turning Movements Worksheet

Gibson Blvd. / Walker Rd.

INTERSECTION: E-W Street: Gibson Blvd. (2) Due to the close proximity of intersections 1 & 2, some NOBUILD
N-S Street: Walker Rd. volumes were balanced and won't equal existing + growth
Year of Existing Counts: 2015
Implementation Year: 2017
Growth Rates: 1.00% 1.00% 1.00% 1.00%

	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	125	0	0	0	0	0	5	0	0	0
Background Traffic Growth	0	0	3	0	0	0	0	0	0	0	0	0
Subtotal	0	0	128	0	0	0	0	0	5	0	0	0
UNM Gibson Commercial Development	0	5	0	0	87	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	2,070	130	0	1,237	0	0	0	5	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	17.63%	39.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	39.44%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	30	67	0	0	0	0	63	0	0	0
Subtotal AM Pk Hr. BUILD Volumes	0	2,070	160	67	1,324	0	0	0	68	0	0	0
Pass-by Trip Adjustments	0	-46	46	23	-23	0	0	0	44	0	0	0
Total AM Peak Hour BUILD Volumes	0	2,024	206	90	1,301	0	0	0	112	0	0	0

	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	24	0	0	0	0	0	21	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	24	0	0	0	0	0	21	0	0	0
UNM Gibson Commercial Development	0	111	0	0	152	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	1,483	25	0	2,676	0	0	0	21	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	17.63%	39.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	39.44%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	27	60	0	0	0	0	54	0	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	1,483	52	60	2,676	0	0	0	75	0	0	0
Pass-by Trip Adjustments	0	-21	21	39	-39	0	0	0	18	0	0	0
Total PM Peak Hour BUILD Volumes	0	1,462	73	99	2,637	0	0	0	93	0	0	0

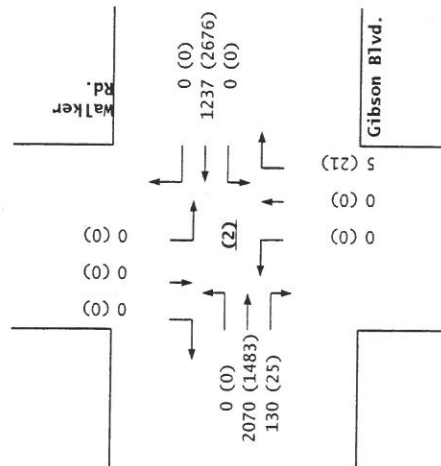
Number of Commercial Trips Generated
Entering: 170, Exiting: 160, A.M. 100% Commercial Development
151, 136, P.M.

	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2015 AM Peak Hr. Volumes	0	0	125	0	0	0	0	0	5	0	0	0
2015 PM Peak Hr. Volumes	0	0	24	0	0	0	0	0	21	0	0	0

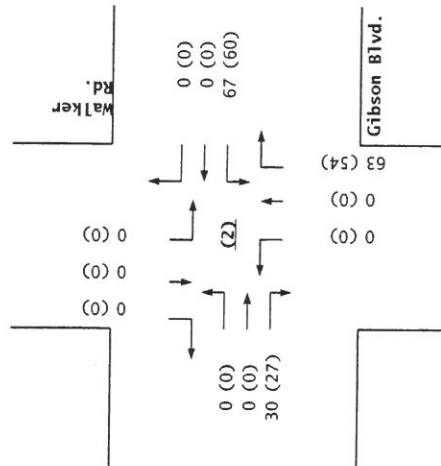
Pass-by Trip Calculations:

	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM Pass-by Trips	0.00%	-63.10%	63.10%	30.92%	-30.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Entering	0	-46	46	23	-23	0	0	0	0	0	0	0
Volume Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	63.10%	0.00%	0.00%	0.00%
Percent Exiting	0	0	0	0	0	0	0	0	44	0	0	0
Volume Exiting	0	-46	46	23	-23	0	0	0	44	0	0	0
Net AM Passby Trips	0	-46	46	23	-23	0	0	0	44	0	0	0
PM Pass-by Trips	0.00%	-31.75%	31.75%	59.41%	-59.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Entering	0	-21	21	39	-39	0	0	0	0	0	0	0
Volume Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	31.75%	0.00%	0.00%	0.00%
Percent Exiting	0	0	0	0	0	0	0	0	18	0	0	0
Volume Exiting	0	-21	21	39	-39	0	0	0	18	0	0	0
Net PM Passby Trips	0	-21	21	39	-39	0	0	0	18	0	0	0
Pass-by Trips	73	69	AM	65	58	PM						

2017
NO BUILD

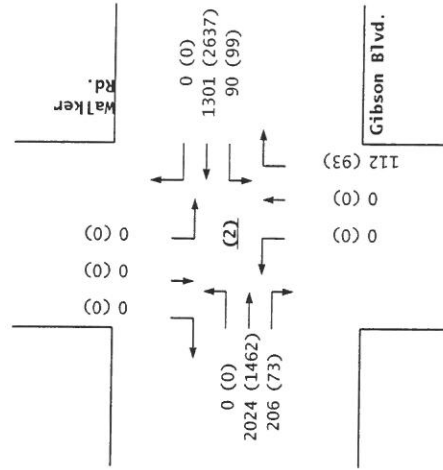


Trips



Gibson Blvd. / Walker Rd.

2017
BUILD



Gibson / University Restaurants (SE Corner)
Projected Turning Movements Worksheet
Driveway "A" / University Blvd.

INTERSECTION: E-W Street: **Driveway "A"** (3)
 N-S Street: **University Blvd.**
 Year of Existing Counts: **2015**
 Implementation Year: **2017**

Growth Rates

	2.61%			2.61%			2.61%			2.61%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (University Blvd.)			Southbound (University Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	139	0	0	71	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.81%	41.13%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	1.81%	0.00%	58.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	3	0	94	0	0	3	70	0	0
Subtotal AM Pk Hr. BUILD Volumes	0	0	0	3	0	94	0	139	3	70	71	0
Pass-by Trip Adjustments	0	0	0	1	0	24	0	-3	3	1	-1	0
Total AM Peak Hour BUILD Volumes	0	0	0	4	0	118	0	136	6	71	70	0

	12.79%			12.79%			12.79%			12.79%		
	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (University Blvd.)			Southbound (University Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	162	0	0	174	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.81%	41.13%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	1.81%	0.00%	58.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	2	0	80	0	0	3	62	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	2	0	80	0	162	3	62	174	0
Pass-by Trip Adjustments	0	0	0	3	0	37	0	-3	3	3	-3	0
Total PM Peak Hour BUILD Volumes	0	0	0	5	0	117	0	159	6	65	171	0

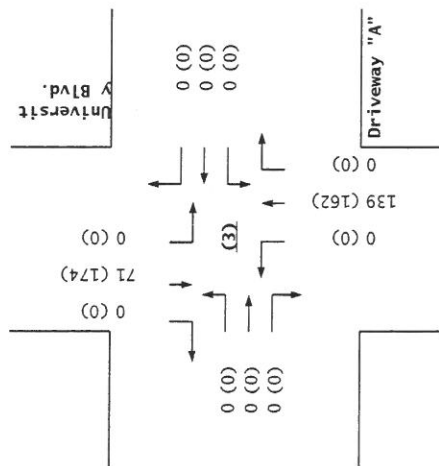
Number of Commercial Trips Generated
 Entering: 170, Exiting: 160, A.M.
 151, 136, P.M. 100% Commercial Development

	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (University Blvd.)			Southbound (University Blvd.)		
2015 AM Peak Hr. Volumes	0	0	0	0	0	0	0	0	0	0	0	0
2015 PM Peak Hr. Volumes	0	0	0	0	0	0	0	0	0	0	0	0

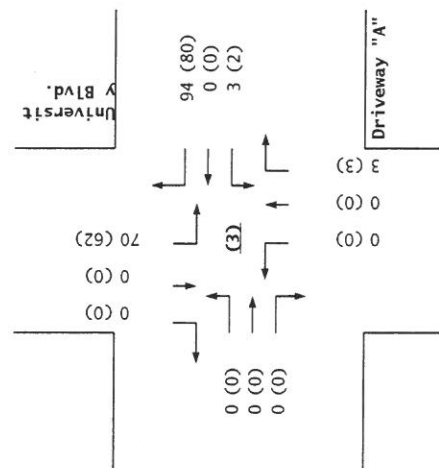
Pass-by Trip Calculations:

		Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (University Blvd.)			Southbound (University Blvd.)		
AM Pass-by Trips		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-4.07%	4.07%	1.91%	-1.91%	0.00%
Percent Entering		0	0	0	0	0	0	0	-3	3	1	-1	0
Volume Entering		0.00%	0.00%	0.00%	1.91%	0.00%	34.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Exiting		0	0	0	1	0	24	0	0	0	0	0	0
Volume Exiting		0	0	0	1	0	24	0	-3	3	1	-1	0
Net AM Passby Trips		0	0	0	1	0	24	0	-3	3	1	-1	0
PM Pass-by Trips		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-4.06%	4.06%	4.78%	-4.78%	0.00%
Percent Entering		0	0	0	0	0	0	0	-3	3	3	-3	0
Volume Entering		0.00%	0.00%	0.00%	4.78%	0.00%	63.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Exiting		0	0	0	3	0	37	0	0	0	0	0	0
Volume Exiting		0	0	0	3	0	37	0	-3	3	3	-3	0
Net PM Passby Trips		0	0	0	3	0	37	0	-3	3	3	-3	0
Pass-by Trips		Entering		Exiting		73		69 AM		65		58 PM	

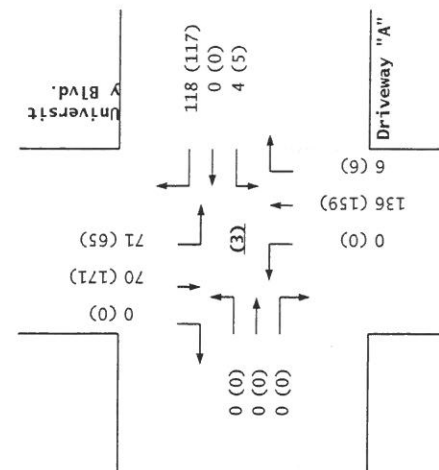
2017
NO BUILD



Trips



2017
BUILD

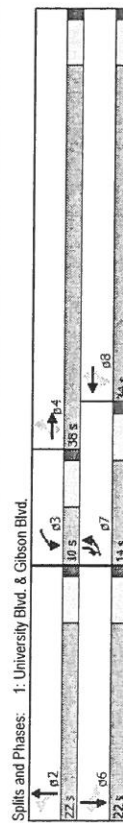


Driveway "A" / University Blvd.

Timings
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
4/7/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	186	1959	30	26	1090	121	80	21	188	15	88
Volume (vph)	7	4	4	3	8	8	2	2	6	6	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	pm+ov
Protected Phases	4	4	4	4	4	4	4	4	4	4	4
Permitted Phases	4	4	4	4	4	4	4	4	4	4	4
Detector Phase	7	4	4	3	8	8	2	2	6	6	7
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	21.0	10.0	21.0	21.0	21.0	21.0	21.0	21.0	10.0
Minimum Split (s)	14.0	38.0	38.0	10.0	34.0	34.0	22.0	22.0	22.0	22.0	14.0
Total Split (%)	20.0%	54.3%	54.3%	14.3%	48.6%	48.6%	31.4%	31.4%	31.4%	31.4%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	41.1	33.1	33.1	35.1	30.1	30.1	14.4	14.4	14.4	14.4	27.4
Act Elct Green (s)	0.61	0.49	0.49	0.52	0.45	0.45	0.21	0.21	0.21	0.21	0.41
Actuated g/C Ratio	0.54	0.84	0.84	0.11	0.51	0.17	0.29	0.16	0.74	0.04	0.14
v/c Ratio	12.0	19.4	0.1	7.0	15.1	3.4	24.7	12.0	41.8	20.7	9.1
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	12.0	19.4	0.1	7.0	15.1	3.4	24.7	12.0	41.8	20.7	9.1
LOS	B	B	A	A	B	A	C	B	D	C	A
Approach Delay	18.5			13.8			19.3		31.1		C
Approach LOS	B			B			B		C		C
Intersection Summary											
Cycle Length: 70											
Actuated Cycle Length: 67.5											
Natural Cycle: 60											
Control Type: Actuated-Uncoordinated											
Maximum v/c Ratio: 0.84											
Intersection Signal Delay: 18.0											
Intersection Capacity Utilization 72.2%											
Analysis Period (min) 15											



2017 AM Peak NOBUILD Conditions Both Cases
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HCM 2010 Signalized Intersection Summary
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	186	1959	30	26	1090	121	80	21	188	15	88
Volume (veh/h)	7	4	4	3	8	8	2	2	6	6	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	196	2062	32	27	1147	127	84	22	40	208	16
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	396	2409	750	264	2342	729	379	129	235	359	406
Arrive On Green	0.09	0.48	0.48	0.08	0.47	0.47	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1757	5035	1568	1757	5035	1568	1267	588	1068	1322	1845
Grp Volume (v), veh/h	196	2062	32	27	1147	127	84	0	62	208	16
Grp Sat Flow (s), veh/h	1757	1679	1568	1757	1679	1568	1267	0	1656	1322	1845
Q Serve (g.s), s	3.7	24.0	0.7	0.5	10.5	3.1	3.7	0.0	2.0	10.0	0.5
Cycle Q Clear (g.c), s	3.7	24.0	0.7	0.5	10.5	3.1	4.2	0.0	2.0	12.1	0.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap (c), veh/h	396	2409	750	264	2342	729	379	0	365	359	406
V/C Ratio (X)	0.49	0.86	0.04	0.10	0.49	0.17	0.22	0.00	0.17	0.58	0.04
Avail Cap (c.a), veh/h	479	2505	780	264	2342	729	424	0	424	407	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	15.3	9.2	11.8	12.3	10.3	22.0	0.0	21.0	25.8	20.4
Incr Delay (d2), s/veh	1.0	3.1	0.0	0.2	0.2	0.1	0.3	0.0	0.2	1.6	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%) veh/h	1.9	11.8	0.3	0.2	4.8	1.4	1.3	0.0	0.9	3.8	0.2
LnGrp Delay (d), s/veh	9.9	18.3	9.2	12.0	12.4	10.4	22.3	0.0	21.2	27.4	20.4
LnGrp LOS	A	B	A	B	B	B	C	C	C	C	C
Approach Vol, veh/h	2290			1301			146		317		
Approach Delay, s/veh	17.5			12.2			21.8		24.0		
Approach LOS	B			B			C		C		
Timer	1	2	3	4	5	6	7	8			
Assigned Phs	2	3	4	4	5	6	7	8			
Phs Duration (G+Y+Rc), s	19.6	10.0	36.7	19.6	10.9	35.9					
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0					
Max Green Setting (Gmax), s	17.0	5.0	33.0	17.0	9.0	29.0					
Max Q Clear Time (a.c+1), s	6.2	2.5	26.0	14.1	5.7	12.5					
Green Ext Time (p.c), s	1.3	0.0	5.7	0.6	0.2	15.7					
Intersection Summary											
HCM 2010 Ctrl Delay	16.5										
HCM 2010 LOS	B										

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Timings 1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
4/7/2015

HCM 2010 Signalized Intersection Summary
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
4/7/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	186	1976	70	26	1067	121	155	61	38	211	45	88
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1	6	16
Number	0	0	0	0	0	0	0	0	0	0	0	0
Initial Q (Qb), veh	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Sat Flow, veh/h	196	2080	74	27	1123	127	163	64	40	222	47	93
Adj Sat Flow Rate, veh/h	1	3	1	1	3	1	1	1	0	1	1	1
Adj No. of Lanes	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Peak Hour Factor	388	2333	726	247	2247	700	384	262	164	357	455	527
Percent Heavy Veh. %	0.09	0.46	0.07	0.45	0.45	0.45	0.25	0.25	0.25	0.25	0.25	0.25
Cap. veh/h	1757	5036	1568	1757	5036	1568	1232	1063	664	1272	1845	1568
Arrive On Green	196	2080	74	27	1123	127	163	64	40	222	47	93
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	1232	1063	664	1272	1845	1568
Grp Volume(v), veh/h	1757	1679	1568	1757	1679	1568	1232	0	1727	1272	1845	1568
Grp Sat Flow(s), veh/h	4.0	26.0	1.8	0.5	11.0	3.4	8.1	0.0	3.3	11.7	1.4	2.9
Q Serve(g, s), s	4.0	26.0	1.8	0.5	11.0	3.4	9.5	0.0	3.3	15.0	1.4	2.9
Cycle Q Clear(g, c), s	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.38	1.00	1.00	1.00
Prop In Lane	388	2333	726	247	2247	700	384	0	426	357	455	527
Lane Grp Cap(c), veh/h	0.51	0.89	0.10	0.11	0.50	0.18	0.42	0.00	0.24	0.62	0.10	0.18
Avail Cap(c, a), veh/h	460	2411	751	247	2247	700	384	0	426	357	455	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(i)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	16.9	10.4	13.4	13.6	11.5	23.7	0.0	20.8	26.8	20.1	16.1
Incr Delay (d2), s/veh	1.0	4.6	0.1	0.2	0.2	0.1	0.7	0.0	0.3	3.3	0.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back(Q)(50%), veh/h	2.0	12.9	0.8	0.3	5.0	1.5	2.8	0.0	1.6	4.4	0.7	1.3
LnGrp Delay(d), s/veh	11.0	21.5	10.5	13.6	13.8	11.6	24.5	0.0	21.1	30.1	20.2	16.3
LnGrp LOS	B	C	B	B	B	B	C	C	C	C	C	B
Approach Vol, veh/h	2350			1277			267				362	
Approach Delay, s/veh	20.3			13.6			23.2				25.3	
Approach LOS	C			B			C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4									
Phs Duration (G+Y+Rc), s	22.0	10.0	36.9									
Change Period (Y+Rc), s	5.0	5.0	5.0									
Max Green Setting (Gmax), s	17.0	5.0	33.0									
Max Q Clear Time (g, c+1), s	11.5	2.5	28.0									
Green Ext Time (p, c), s	1.3	0.0	3.9									
Intersection Summary												
HCM 2010 Ctrl Delay	18.9											
HCM 2010 LOS	B											

2017 AM Peak BUILD Conditions Case "Y" - Left-in at Walker
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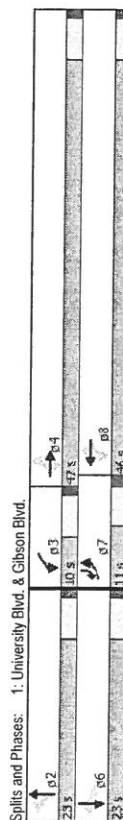
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	186	1976	70	26	1067	121	155	61	38	211	45	88
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1	6	16
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	4	4	4	8	8	8	2	2	2	6	6	7
Permitted Phases	7	4	4	3	8	8	2	2	2	6	6	7
Detector Phase	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 Initial (s)	10.0	21.0	10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	10.0
Minimum Split (s)	14.0	38.0	38.0	10.0	34.0	34.0	22.0	22.0	22.0	22.0	22.0	14.0
Total Split (s)	20.0%	54.3%	54.3%	14.3%	48.6%	48.6%	31.4%	31.4%	31.4%	31.4%	31.4%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	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)	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 Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	41.2	33.1	33.1	35.0	29.9	29.9	15.1	15.1	15.1	15.1	15.1	28.2
Act Effct Green (s)	0.60	0.49	0.49	0.51	0.44	0.44	0.22	0.22	0.22	0.22	0.22	0.41
Actuated g/C Ratio	0.54	0.85	0.09	0.11	0.51	0.17	0.55	0.25	0.79	0.12	0.14	0.14
Control Delay	11.9	20.4	1.4	7.1	15.4	3.4	31.1	16.1	46.6	21.6	9.1	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	20.4	1.4	7.1	15.4	3.4	31.1	16.1	46.6	21.6	9.1	9.1
LOS	B	C	A	A	B	A	C	B	D	C	A	A
Approach Delay	19.1			14.0			25.3				33.7	
Approach LOS	B			B			C				C	
Intersection Summary												
Cycle Length 70												
Actuated Cycle Length: 68.2												
Natural Cycle: 60												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.85												
Intersection Signal Delay: 19.2												
Intersection Capacity Utilization: 73.2%												
Analysis Period (min) 15												
Spills and Phases: 1: University Blvd. & Gibson Blvd.												
	22.5	10.5	38.5	14.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d12	d13

2017 AM Peak BUILD Conditions Case "Y" - Left-in at Walker
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Timings
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	136	1106	57	74	2236	214	75	25	229	43	148
Volume (vph)	pm-pl	NA	Perm	pm-pl	NA	Perm	NA	Perm	NA	pm+ov	
Turn Type	7	4	4	8	3	8	2	2	6	6	7
Protected Phases	4	4	4	8	8	8	2	2	6	6	7
Permitted Phases	7	4	4	8	8	8	2	2	6	6	7
Detector Phase	7	4	4	8	8	8	2	2	6	6	7
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	21.0	10.0	21.0	21.0	21.0	21.0	21.0	21.0	10.0
Minimum Split (s)	11.0	47.0	47.0	10.0	46.0	46.0	23.0	23.0	23.0	23.0	11.0
Total Split (%)	13.8%	58.8%	58.8%	12.5%	57.5%	57.5%	28.8%	28.8%	28.8%	28.8%	13.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	48.0	42.0	42.0	46.0	41.0	41.0	17.0	17.0	17.0	17.0	28.0
Act Effect Green (s)	0.61	0.53	0.53	0.58	0.52	0.52	0.22	0.22	0.22	0.22	0.35
Actuated g/C Ratio	0.63	0.43	0.07	0.25	0.89	0.25	0.27	0.23	0.87	0.11	0.27
v/c Ratio	24.2	12.0	1.1	7.5	23.0	4.3	28.5	12.2	60.4	25.6	16.2
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	24.2	12.0	1.1	7.5	23.0	4.3	28.5	12.2	60.4	25.6	16.2
LOS	C	B	A	A	C	A	C	B	E	C	B
Approach Delay	12.8										
Approach LOS	B										
Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length: 79											
Natural Cycle: 70											
Control Type: Actuated-Uncoordinated											
Maximum v/c Ratio: 0.89											
Intersection Signal Delay: 20.5											
Intersection Capacity Utilization 82.6%											
Analysis Period (min) 15											



2017 PM Peak NOBUILD Conditions Both Cases
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HCM 2010 Signalized Intersection Summary
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
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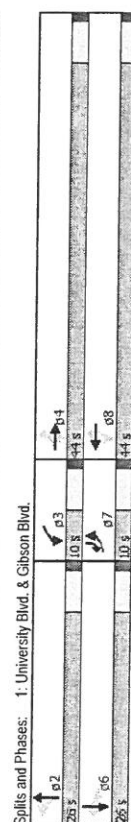
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	136	1106	57	74	2236	214	75	25	62	229	43	148
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1	6	16
Number	0	0	0	0	0	0	0	0	0	0	0	0
Initial Q (Qb), veh	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Sat Flow, veh/h	142	1152	59	77	2329	223	78	26	65	239	45	154
Adj Flow Rate, veh/h	1	3	1	1	3	1	1	1	1	1	1	1
Adj No. of Lanes	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Peak Hour Factor	3	3	3	3	3	3	3	3	3	3	3	3
Percent Heavy Veh, %	215	2611	813	373	2611	813	335	107	267	327	421	457
Cap, veh/h	0.06	0.52	0.52	0.06	0.52	0.52	0.23	0.23	0.23	0.23	0.23	0.23
Arrive On Green	1757	5036	1568	1757	5036	1568	1167	468	1170	1288	1845	1568
Sat Flow, veh/h	142	1152	59	77	2329	223	78	26	65	239	45	154
Grp Volume(v), veh/h	1757	1679	1568	1757	1679	1568	1167	0	1638	1288	1845	1568
Grp Sat Flow(s), veh/h	2.9	11.3	1.5	1.5	32.7	6.3	4.5	0.0	3.6	14.4	1.5	6.1
Q Serve(g, s)	2.9	11.3	1.5	1.5	32.7	6.3	4.5	0.0	3.6	14.4	1.5	6.1
Cycle Q Clear(g, c), s	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop In Lane	215	2611	813	373	2611	813	335	0	374	327	421	457
Lane Grp Cap(c), veh/h	0.66	0.44	0.07	0.21	0.89	0.27	0.23	0.00	0.24	0.73	0.11	0.34
V/C Ratio(X)	238	2681	835	373	2617	815	335	0	374	327	421	457
Avail Cap(c, a), veh/h	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(f)	17.7	11.9	9.5	8.2	17.0	10.7	26.5	0.0	24.9	32.4	24.1	22.0
Uniform Delay (d), s/veh	5.8	0.1	0.0	0.3	4.3	0.2	0.4	0.0	0.3	8.2	0.1	0.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	2.0	5.1	0.6	0.7	15.9	2.8	1.5	0.0	1.7	5.9	0.8	2.7
%ile BackOfQ(50%) veh/h	23.5	12.0	9.5	8.5	21.4	10.8	26.8	0.0	25.2	40.5	24.2	22.4
LnGrp Delay(d) s/veh												
LnGrp LOS	C	B	A	A	C	B	C	C	C	D	C	C
Approach Vol, veh/h	1353			2629				169				438
Approach Delay, s/veh	13.1			20.1				26.0				32.5
Approach LOS	B			C				C				C
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	10.0	45.9	23.0	10.0	45.9	23.0	10.0	45.9	23.0	10.0	45.9
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	18.0	5.0	42.0	18.0	5.0	42.0	18.0	5.0	41.0	18.0	5.0	41.0
Max Q Clear Time (g_c+1), s	8.0	3.5	13.3	8.0	3.5	13.3	20.0	4.9	34.7	8.0	3.5	13.3
Green Ext Time (g_c), s	1.8	0.0	27.3	1.8	0.0	27.3	0.0	0.0	6.2	0.0	0.0	6.2
Intersection Summary												
HCM 2010 Ctrl Delay	19.4											
HCM 2010 LOS	B											

2017 PM Peak NOBUILD Conditions Both Cases
Synchro 8 Report
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Timings
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
4/7/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	136	1121	93	74	2197	214	155	59	240	70	148
Volume (vph)	pm+pl	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	pm+ov
Turn Type	7	4	4	3	8	8	2	2	6	6	7
Protected Phases	4										
Permitted Phases	7	4	4	3	8	8	2	2	6	6	7
Detector Phase	7	4	4	3	8	8	2	2	6	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	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	10.0	44.0	10.0	10.0	44.0	10.0	26.0	26.0	26.0	10.0	10.0
Total Split (%)	12.5%	55.0%	12.5%	12.5%	55.0%	12.5%	32.5%	32.5%	32.5%	12.5%	12.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effect Green (s)	44.1	39.1	39.1	44.1	39.1	39.1	18.6	18.6	18.6	18.6	28.6
Actuated g/C Ratio	0.57	0.50	0.50	0.57	0.50	0.50	0.24	0.24	0.24	0.24	0.37
v/c Ratio	0.69	0.46	0.12	0.27	0.90	0.26	0.51	0.28	0.84	0.17	0.26
Control Delay	29.7	13.6	3.0	8.8	24.8	5.0	31.9	14.3	53.2	24.0	15.1
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	29.7	13.6	3.0	8.8	24.8	5.0	31.9	14.3	53.2	24.0	15.1
LOS	C	B	A	A	C	A	C	B	D	C	B
Approach Delay	14.5			22.6			24.2		36.4		
Approach LOS	B			C			C		D		
Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length: 77.7											
Natural Cycle: 70											
Control Type: Actuated-Uncoordinated											
Maximum v/c Ratio: 0.90											
Intersection Signal Delay: 21.7											
Intersection Capacity Utilization: 86.8%											
Analysis Period (min): 15											



2017 PM Peak BUILD Conditions Case "Y" - Left-in at Walker
Synchro 8 Report
2017PBX-Case Y.syn

HCM 2010 Signalized Intersection Summary
1: University Blvd. & Gibson Blvd.

Terry O. Brown, P.E.
4/7/2015

	→	←	←	←	←	←	←	←	←	←	←	←
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	136	1121	93	74	2197	214	155	59	62	240	70	148
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1	6	16
Number	0	0	0	0	0	0	0	0	0	0	0	0
Initial Q (Qb), veh	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Sat Flow, veh/h	142	1168	97	77	2289	223	161	61	65	250	73	154
Adj Flow Rate, veh/h	1	3	1	1	3	1	1	1	0	1	1	1
Adj No. of Lanes	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Peak Hour Factor	3	3	3	3	3	3	3	3	3	3	3	3
Percent Heavy Veh. %	208	2454	764	344	2454	764	354	215	229	344	484	510
Cap. veh/h	0.06	0.49	0.06	0.49	0.06	0.49	0.26	0.26	0.26	0.26	0.26	0.26
Arrive On Green	1757	5036	1568	1757	5036	1568	1138	819	872	1247	1845	1568
Sat Flow, veh/h	142	1168	97	77	2289	223	161	0	126	250	73	154
Gp Volume(v), veh/h	1757	1679	1568	1757	1679	1568	1138	0	1691	1247	1845	1568
Gp Sat Flow(s), veh/h	3.2	12.4	2.7	1.7	34.2	6.8	10.1	0.0	4.7	16.0	2.4	5.9
Q Serve(g_s), s	3.2	12.4	2.7	1.7	34.2	6.8	12.6	0.0	4.7	20.7	2.4	5.9
Cycle Q Clear(g_c), s	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.0	0.52	1.00	1.00	1.00
Prop In Lane	208	2454	764	344	2454	764	354	0	444	344	484	510
Lane Gp Cap(c), veh/h	0.68	0.48	0.13	0.22	0.93	0.29	0.45	0.00	0.28	0.73	0.15	0.30
V/C Ratio(X)	208	2456	765	344	2456	765	354	0	444	344	484	510
Avail Cap(c), veh/h	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(f)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	13.7	11.2	9.6	19.3	12.3	27.5	0.0	23.5	31.7	22.6	20.2
Incr Delay (d2), s/veh	8.9	0.1	0.1	0.3	7.3	0.2	0.9	0.0	0.3	7.6	0.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	2.1	5.8	1.2	0.8	17.3	3.0	3.3	0.0	2.2	6.2	1.3	2.6
Initial Q Delay(d3), s/veh	27.1	13.8	11.3	10.0	26.6	12.5	28.4	0.0	23.8	39.3	22.8	20.5
Initial Q Delay(d3), s/veh												
Initial Q Delay(d3), s/veh												
Initial Q Delay(d3), s/veh												
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Initial Q Delay(d3), s/veh												
Initial Q Delay(d3), s/veh												

2017 PM Peak BUILD Conditions Case "Y" - Left-in at Walker
Synchro 8 Report
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Lanes, Volumes, Timings
2: Walker Rd. & Gibson Blvd.

Terry O. Brown, P.E.
5/7/2015

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑↑↑	↑↑↑	↑	↑
Volume (vph)	2070	130	0	1324	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115	0	0	0	0	0
Storage Lanes	1	0	0	0	0	1
Taper Length (ft)	0.91	1.00	1.00	0.91	1.00	1.00
Lane Util. Factor	0.850					0.865
Flt Protected						
Satd. Flow (prot)	5036	1568	0	5036	0	1596
Flt Permitted						
Satd. Flow (perm)	5036	1568	0	5036	0	1596
Link Speed (mph)	30	30	30	30	30	30
Link Distance (ft)	1185	622	319	622	319	1185
Travel Time (s)	26.9	14.1	7.3	14.1	7.3	26.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2300	144	0	1471	0	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2300	144	0	1471	0	6
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width (ft)	12	0	0	12	0	0
Link Offset (ft)	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15	15	15	15	9
Sign Control	Free	Free	Free	Free	Stop	Stop
Intersection Summary	ICU Level of Service A					
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.0%					
Analysis Period (min)	15					

2017 AM Peak NOBUILD Conditions Both Cases

Synchro 8 Report
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HCM 2010 TWSC
2: Walker Rd. & Gibson Blvd.

Terry O. Brown, P.E.
5/7/2015

Intersection	0					
Int Delay, s/vch						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2070	130	0	1324	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	Free	-	None
Storage Length	-	115	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	2300	144	0	1471	0	6
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	2300	0	2888	1150	-
Stage 1	-	-	-	-	2300	-
Stage 2	-	-	-	-	588	-
Critical Hdwy	-	-	5.36	-	5.76	7.16
Critical Hdwy Sig 1	-	-	-	-	6.66	-
Critical Hdwy Sig 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	3.13	-	-	3.83	3.93
Pot Cap-1 Maneuver	-	0	87	-	30	163
Stage 1	-	0	-	-	36	-
Stage 2	-	0	-	-	470	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	87	-	30	163
Mov Cap-2 Maneuver	-	-	-	-	30	-
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	470	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	27.9			
HCM LOS			D			
Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT		
Capacity (veh/h)	163	-	87	-		
HCM Lane V/C Ratio	0.034	-	-	-		
HCM Control Delay (s)	27.9	-	0	-		
HCM Lane LOS	D	-	A	-		
HCM 95th %tile Q(veh)	0.1	-	0	-		

2017 AM Peak NOBUILD Conditions Both Cases

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑	↑
Volume (vph)	2024	206	90	1301	0	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		115	150		0	0
Storage Lanes		1	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Flt		0.850				0.865
Flt Protected			0.950			
Satd. Flow (prot)	5036	1568	1752	5036	0	1596
Flt Permitted			0.950			
Satd. Flow (perm)	5036	1568	1752	5036	0	1596
Link Speed (mph)	30		30	30	30	
Link Distance (ft)	1185			622	319	
Travel Time (s)	26.9			14.1	7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2249	229	100	1446	0	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2249	229	100	1446	0	124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12		12	12	0	
Link Offset(ft)	0		0	0	0	
Crosswalk Width(ft)	16		16	16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15	15	15	15	9
Sign Control	Free	Free	Free	Free	Stop	Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.7%					
Analysis Period (min)	15					
ICU Level of Service A						

Intersection	0.8					
Int Delay, s/veh						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2024	206	90	1301	0	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	115	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	2249	229	100	1446	0	124
Major/Minor	Major1	Major2	Major1	Minor1		
Conflicting Flow All	0	0	2249	0	3027	1124
Stage 1	-	-	-	-	2249	-
Stage 2	-	-	-	-	778	-
Critical Hdwy	-	-	5.36	-	5.76	7.16
Critical Hdwy Sig 1	-	-	-	-	6.66	-
Critical Hdwy Sig 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	3.13	-	3.83	3.93
Pot Cap-1 Maneuver	-	-	*567	-	*83	*451
Stage 1	-	-	-	-	*463	-
Stage 2	-	-	-	-	*373	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*567	-	*68	*451
Mov Cap-2 Maneuver	-	-	-	-	*68	-
Stage 1	-	-	-	-	*463	-
Stage 2	-	-	-	-	*307	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.8	16			
HCM LOS		C	C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	451	-	-	*567	-	
HCM Lane V/C Ratio	0.276	-	-	0.176	-	
HCM Control Delay (s)	16	-	-	12.7	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %ile Q(veh)	1.1	-	-	0.6	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s *: Computation Not Defined **: All major volume in platoon						

Lanes, Volumes, Timings
2: Walker Rd. & Gibson Blvd.

Terry O. Brown, P.E.
5/7/2015

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑↑↑	↑↑↑	↑	↑
Volume (vph)	1483	25	0	2676	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115	0	0	0	0	0
Storage Lanes	1	0	0	0	0	1
Taper Length (ft)	0.91	1.00	1.00	0.91	1.00	1.00
Lane Util. Factor	0.850					0.865
Flt Protected						
Satd. Flow (prot)	5036	1568	0	5036	0	1596
Flt Permitted						
Satd. Flow (perm)	5036	1568	0	5036	0	1596
Link Speed (mph)	30			30	30	
Link Distance (ft)	1185			622	319	
Travel Time (s)	26.9			14.1	7.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1529	26	0	2759	0	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1529	26	0	2759	0	22
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width (ft)	12			12	0	
Link Offset (ft)	0			0	0	
Crosswalk Width (ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9			15	15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type	Other					
Control Type	Unsignalized					
Intersection Capacity Utilization	55.0%					
Analysis Period (min)	15					
					ICU Level of Service B	

2017 PM Peak NOBUILD Conditions Both Cases

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HCM 2010 TWSC
2: Walker Rd. & Gibson Blvd.

Terry O. Brown, P.E.
5/7/2015

Intersection	0.1									
Int Delay, s/veh										
Movement	EBT	EBR	WBL	WBT	NBL	NBR				
Vol, veh/h	1483	25	0	2676	0	21				
Conflicting Peds, #/hr	0	0	0	0	0	0				
Sign Control	Free	Free	Free	Free	Stop	Stop				
RT Channelized	-	None	-	None	-	None				
Storage Length	-	115	-	-	-	0				
Veh in Median Storage, #	0	-	0	-	0	-				
Grade, %	0	-	0	-	0	-				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				
Heavy Vehicles, %	3	3	3	3	3	3				
Mvmt Flow	1529	26	0	2759	0	22				
Major/Minor	Major1		Major2		Minor1					
Conflicting Flow All	0		1529		2633					
Stage 1					1529					
Stage 2					1104					
Critical Hdwy			5.36		5.76					
Critical Hdwy Stg 1					6.66					
Critical Hdwy Stg 2					6.06					
Follow-up Hdwy			3.13		3.83					
Pot Cap-1 Maneuver			213		42					
Stage 1					112					
Stage 2					249					
Platoon blocked, %										
Mov Cap-1 Maneuver			213		42					
Mov Cap-2 Maneuver					42					
Stage 1					112					
Stage 2					249					
Approach	EB	WB	EB	WB	NB	C				
HCM Control Delay, s	0		0		18.1					
HCM LOS					C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT					
Capacity (veh/h)	296	-	-	213	-					
HCM Lane V/C Ratio	0.073	-	-	-	-					
HCM Control Delay (s)	18.1	-	-	0	-					
HCM Lane LOS	C	-	-	A	-					
HCM 95th %ile Q(veh)	0.2	-	-	0	-					

2017 PM Peak NOBUILD Conditions Both Cases

Synchro 8 Report
2017PNX-BothCases.syn

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑	↑
Volume (vph)	1462	73	99	2637	0	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115	150	150	150	0	0
Storage Lanes	1	1	1	1	0	1
Taper Length (ft)	25	25	25	25	1.00	1.00
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	0.865
Flt Protected	0.950					
Satd. Flow (prot)	5036	1568	1752	5036	0	1596
Flt Permitted	0.950					
Satd. Flow (perm)	5036	1568	1752	5036	0	1596
Link Speed (mph)	30	30	30	30	30	30
Link Distance (ft)	1185	622	319	622	319	319
Travel Time (s)	26.9	14.1	7.3	14.1	7.3	7.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1507	75	102	2719	0	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1507	75	102	2719	0	96
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width (ft)	12	0	0	12	0	0
Link Offset (ft)	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15	15	15	15	9
Sign Control	Free	Free	Free	Free	Stop	Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	54.3%					
Analysis Period (min)	15					
	ICU Level of Service A					

Intersection		0.5					
Int Delay, s/veh							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Vol, veh/h	1462	73	99	2637	0	93	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	115	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	97	97	97	97	97	97	
Heavy Vehicles, %	3	3	3	3	3	3	
Mvmt Flow	1507	75	102	2719	0	96	
Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	0	0	1507	0	2799	754	
Stage 1	-	-	-	-	1507	-	
Stage 2	-	-	-	-	1292	-	
Critical Hdwy	-	-	5.36	-	5.76	7.16	
Critical Hdwy Sig 1	-	-	-	-	6.66	-	
Critical Hdwy Sig 2	-	-	-	-	6.06	-	
Follow-up Hdwy	-	-	3.13	-	3.83	3.93	
Pot Cap-1 Maneuver	-	-	*722	-	*75	*575	
Stage 1	-	-	-	-	*590	-	
Stage 2	-	-	-	-	*197	-	
Platoon blocked, %	-	-	1	-	1	1	
Mov Cap-1 Maneuver	-	-	*722	-	*64	*575	
Mov Cap-2 Maneuver	-	-	-	-	*64	-	
Stage 1	-	-	-	-	*590	-	
Stage 2	-	-	-	-	*169	-	
Approach	EB	WB	NB				
HCM Control Delay, s	0	0.4	12.5				
HCM LOS			B				
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT		
Capacity (veh/h)	575	-	-	*722	-		
HCM Lane V/C Ratio	0.167	-	-	0.141	-		
HCM Control Delay (s)	12.5	-	-	10.8	-		
HCM Lane LOS	B	-	-	B	-		
HCM 95th %ile Q(veh)	0.6	-	-	0.5	-		
Notes							
Volume exceeds capacity	\$: Delay exceeds 300s *: Computation Not Defined						
						*: All major volume in platoon	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	N	N	S	S
Volume (vph)	4	118	136	6	71	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	150	0
Storage Lanes	1	0	0	0	1	0
Taper Length (ft)	25	100	100	100	25	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
FRT	0.870	0.995	0.995			
FRT Protected	0.998				0.950	
Satd. Flow (prot)	1602	0	1835	0	1752	1845
FRT Permitted	0.998				0.950	
Satd. Flow (perm)	1602	0	1835	0	1752	1845
Link Speed (mph)	30		30		30	30
Link Distance (ft)	234		418		402	402
Travel Time (s)	5.3		9.5		9.1	9.1
Peak Hour Factor	0.85	0.85	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	139	143	6	75	68
Shared Lane Traffic (%)	144	0	149	0	75	68
Lane Group Flow (vph)	No	No	No	No	No	No
Enter Blocked Intersection	Left	Right	Left	Right	Left	Left
Lane Alignment	12		12		12	12
Median Width (ft)	0		0		0	0
Link Offset (ft)	16		16		16	16
Crosswalk Width (ft)	16		16		16	16
Two way Left Turn Lane	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	15	9		9	15	
Turning Speed (mph)	Stop	Free	Free		Free	Free
Sign Control						
Intersection Summary						
Area Type	Other					
Control Type	Unsignalized					
Intersection Capacity Utilization	29.0%					
Analysis Period (min)	15					
	ICU Level of Service A					

Intersection	WBL	WBR	NBT	NBR	SBL	SBT
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	118	136	6	71	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	-	-	-	-
Grade, %	0	-	-	-	-	-
Peak Hour Factor	85	85	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	139	143	6	75	68
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	364	146	0	0	149	0
Stage 1	146	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	633	898	-	-	1426	-
Stage 1	879	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	600	898	-	-	1426	-
Mov Cap-2 Maneuver	600	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	9.9		0		4	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	884	1426	-	-
HCM Lane V/C Ratio	-	-	0.162	0.052	-	-
HCM Control Delay (s)	-	-	9.9	7.7	-	-
HCM Lane LOS	-	-	A	A	-	-
HCM 95th %ile Q(veh)	-	-	0.6	0.2	-	-

Lanes, Volumes, Timings
3: University Blvd. & "A"
Terry O. Brown, P.E.
4/7/2015

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y	Y	Y	Y	Y	Y
Volume (vph)	5	117	159	6	65	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	150	0
Storage Lanes	1	0	0	0	1	0
Taper Length (ft)	25	0	0	0	0	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.871	0.995				
Flt Protected	0.998				0.950	
Satd Flow (prot)	1603	0	1835	0	1752	1845
Flt Permitted	0.998				0.950	
Satd Flow (perm)	1603	0	1835	0	1752	1845
Link Speed (mph)	30	30	30	30	30	30
Link Distance (ft)	234	418			402	
Travel Time (s)	5.3	9.5			9.1	
Peak Hour Factor	0.85	0.85	0.96	0.96	0.96	0.96
Adj. Flow (vph)	6	138	166	6	68	167
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	172	0	68	167
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width (ft)	12	12	12	12	12	12
Link Offset (ft)	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9	9	15	15
Sign Control	Stop	Free	Free	Free	Free	Free
Intersection Summary						
Area Type	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 29.8%						
Analysis Period (min) 15						
	ICU Level of Service A					

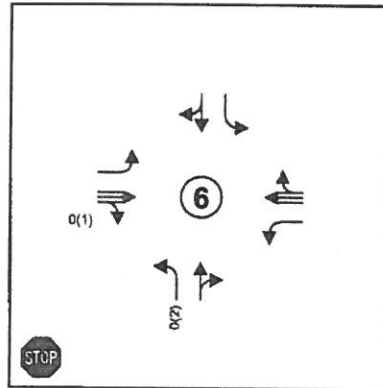
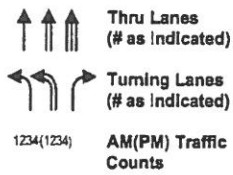
2017 PM Peak BUILD Conditions Case "Y" - Left-in at Walker
Synchro 8 Report
2017PBX-CaseY.syn

HCM 2010 TWSC
3: University Blvd. & "A"
Terry O. Brown, P.E.
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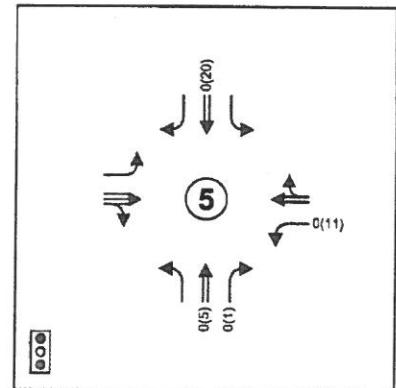
Intersection	3.6					
Int Delay, s/veh						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol. veh/h	5	117	159	6	65	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grate, %	0	-	-	-	-	0
Peak Hour Factor	85	85	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	138	166	6	68	167
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	471	169	0	0	172	0
Stage 1	169	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	643	6.23	-	-	4.13	-
Critical Hdwy Slg 1	543	-	-	-	-	-
Critical Hdwy Slg 2	543	-	-	-	-	-
Follow-up Hdwy	3,527	3,327	-	-	2,227	-
Pot Cap-1 Maneuver	549	872	-	-	1,399	-
Stage 1	858	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	522	872	-	-	1,399	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	10.1		0		2.2	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT		
Capacity (veh/h)	-	-	849	1399	-	-
HCM Lane V/C Ratio	-	-	0.169	0.048	-	-
HCM Control Delay (s)	-	-	10.1	7.7	-	-
HCM Lane LOS	-	-	B	A	-	-
HCM 95th %ile Q(veh)	-	-	0.6	0.2	-	-

2017 PM Peak BUILD Conditions Case "Y" - Left-in at Walker
Synchro 8 Report
2017PBX-CaseY.syn

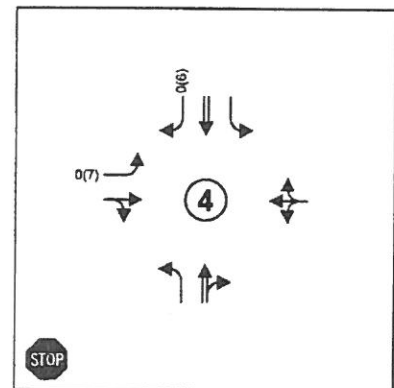
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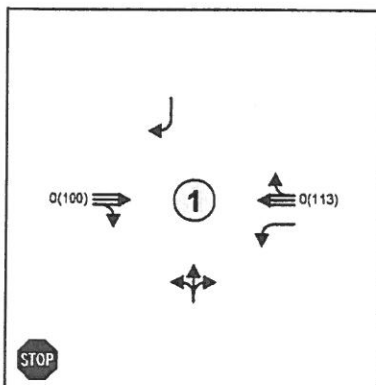
Cesar Chavez/Langham



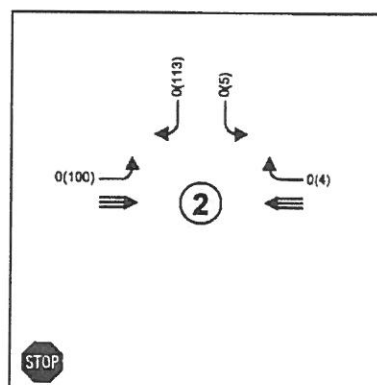
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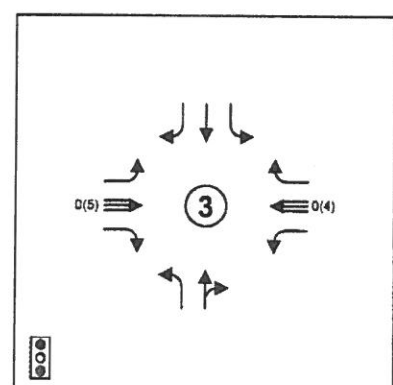
East Road/University



Gibson/Mulberry



Gibson/Entrance



Gibson/University

Bohannon & Huston

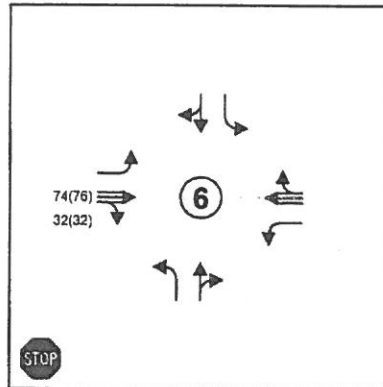
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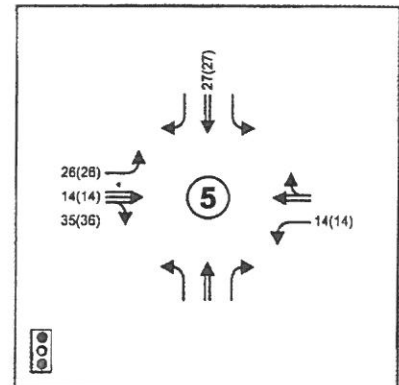
FIGURE 6
 Destination Retail TRIP ASSIGNMENT
 VOLUMES - AM (PM)

LEGEND

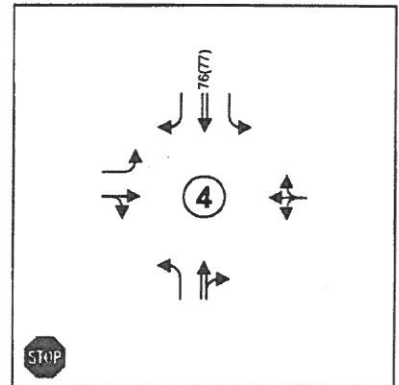
- ↑↑↑ Thru Lanes
(# as Indicated)
- ↔↔↔ Turning Lanes
(# as Indicated)
- 1234(1234) AM(PM) Traffic
Counts



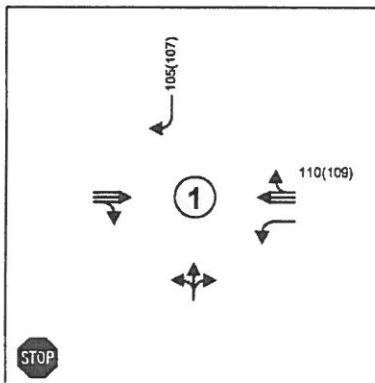
Cesar Chavez/Langham



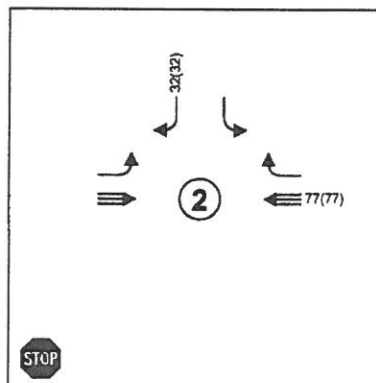
Cesar Chavez/University



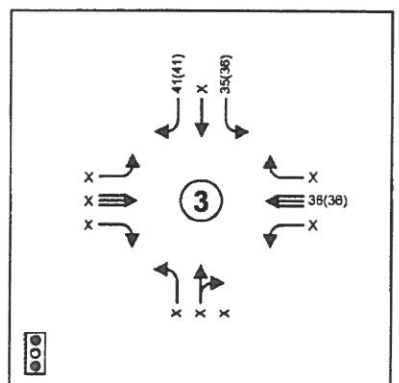
East Road/University



Gibson/Mulberry



Gibson/Entrance



Gibson/University

Bohannon & Huston

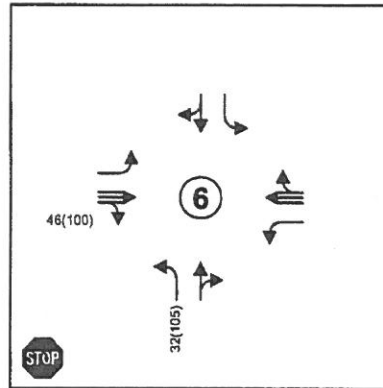
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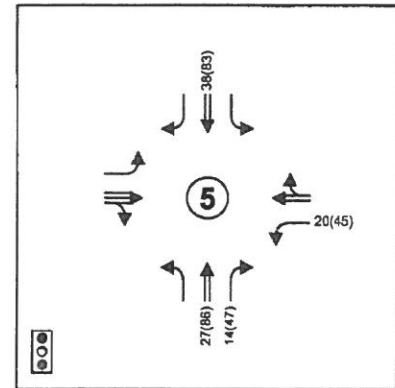
FIGURE 10
Right-In/Right-Out Fast-Food/Conv Mart
TRIP ASSIGNMENT VOLUMES - AM (PM)

LEGEND

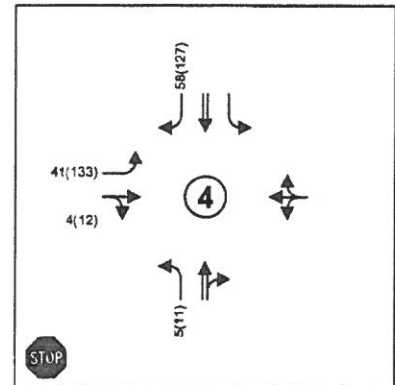
-  Thru Lanes
(# as indicated)
-  Turning Lanes
(# as indicated)
- 1234(1234) AM(PM) Traffic Counts



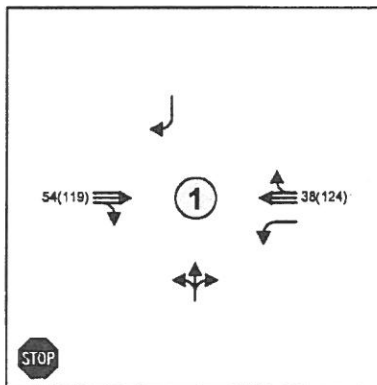
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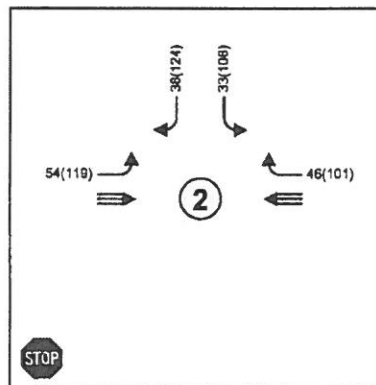
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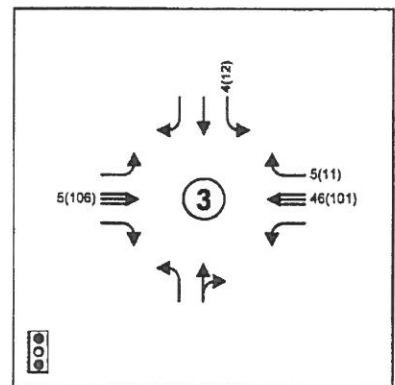
East Road/University



Gibson/Mulberry



Gibson/Entrance



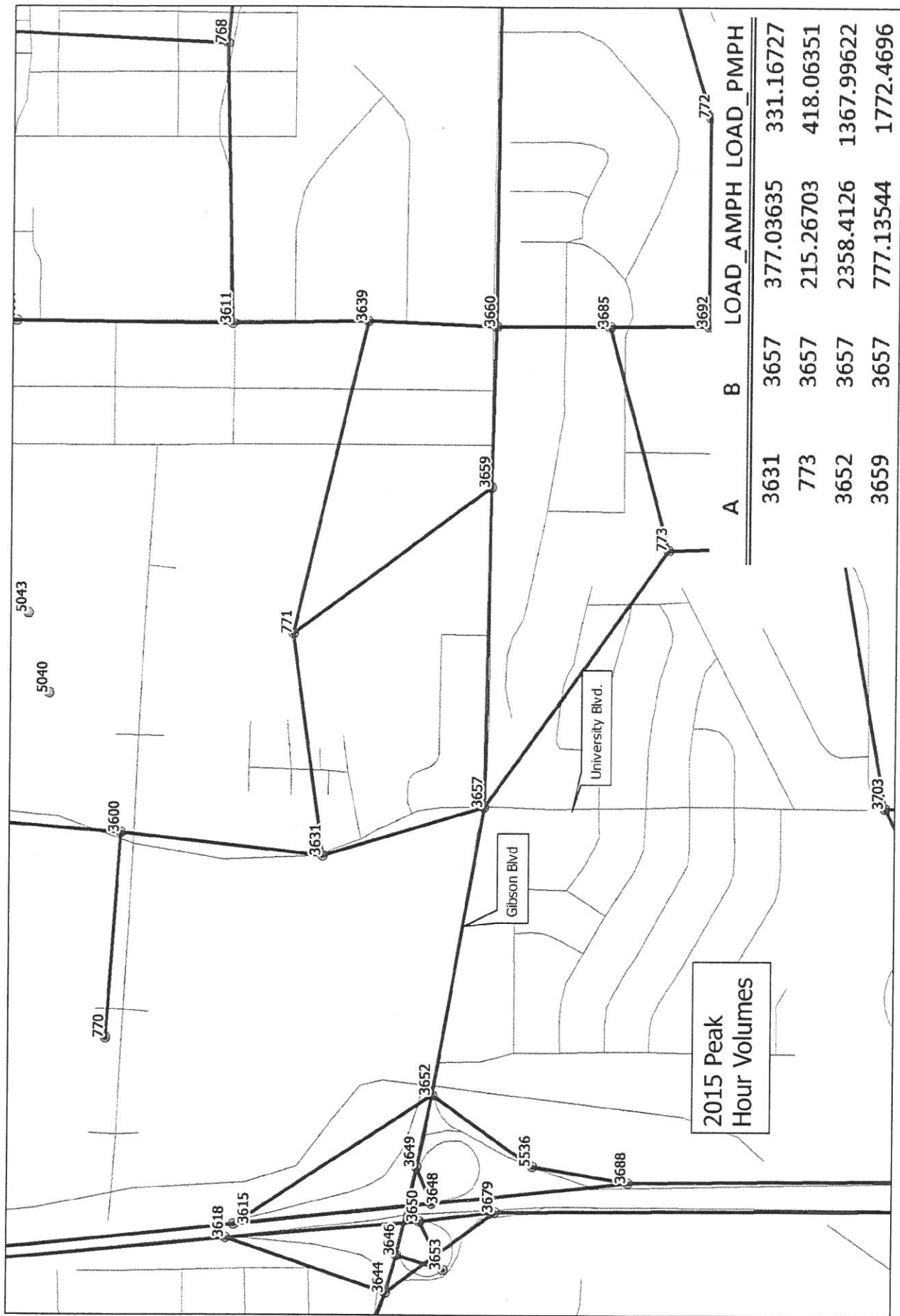
Gibson/University

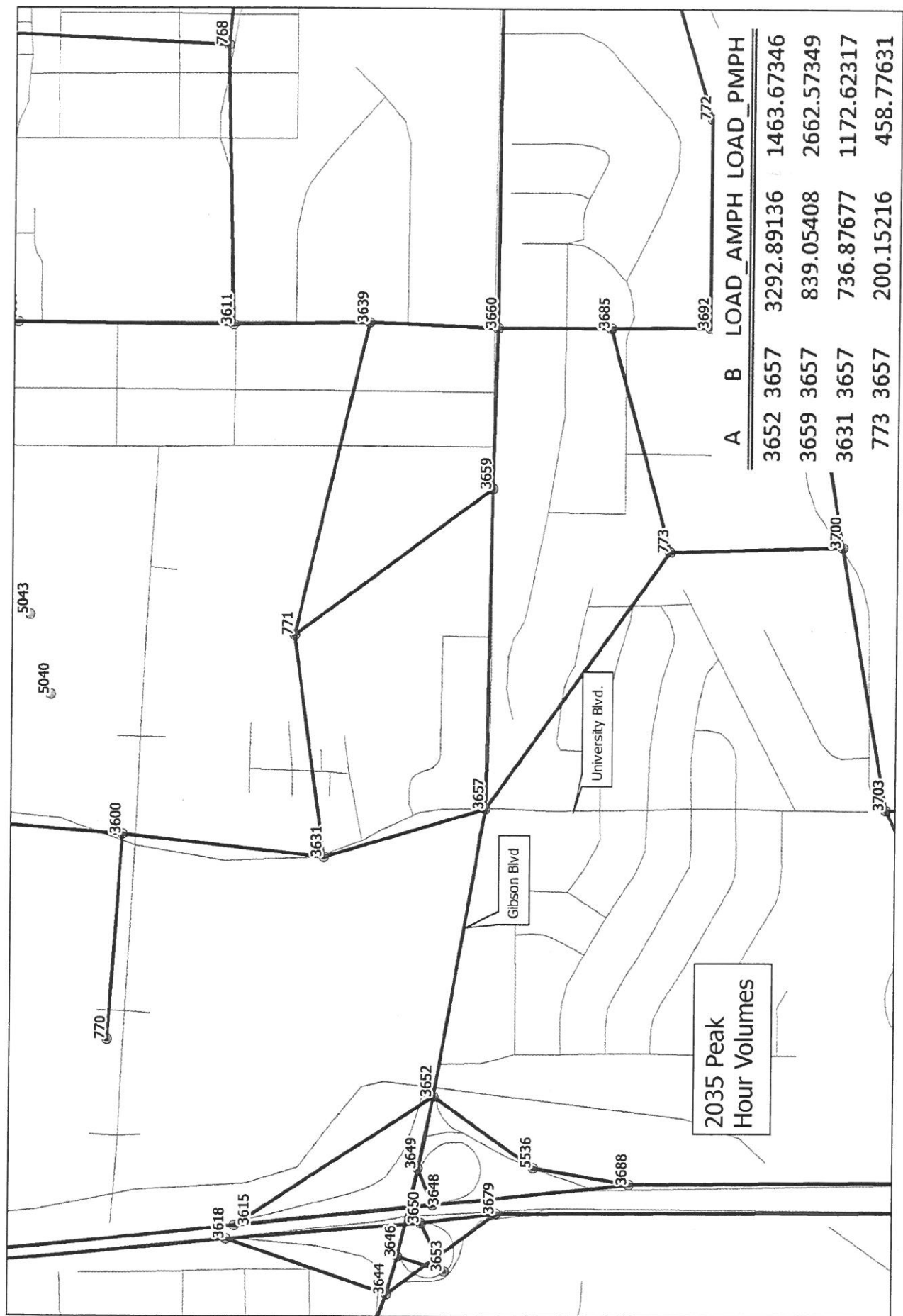
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FIGURE 8
Community Retail TRIP ASSIGNMENT
VOLUMES - AM (PM)





Gibson Blvd.
University Blvd.

Speed Limit (Gibson Blvd.)=	25	MPH
Speed Limit (University Blvd.)=	35	MPH
	2/12/13	

UNSIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd.)				Westbound (Gibson Blvd.)				Northbound (University Blvd.)				Southbound (University Blvd.)			
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	29	277	15	0	14	530	40	0	11	5	11	0	52	14	34	0
4:15 PM	4:30 PM	31	212	17	1	19	490	31	0	19	6	18	0	42	6	21	0
4:30 PM	4:45 PM	34	256	12	0	12	547	54	0	14	7	10	0	49	7	21	0
4:45 PM	5:00 PM	38	224	12	0	17	487	85	1	16	2	10	0	40	7	42	0
5:00 PM	5:15 PM	44	249	16	4	11	505	44	0	12	8	17	0	43	7	26	1
5:15 PM	5:30 PM	46	249	22	0	16	462	30	0	10	9	5	0	52	6	43	0
5:30 PM	5:45 PM	39	237	10	0	14	512	57	1	14	2	14	0	57	11	44	0
5:45 PM	6:00 PM	37	207	13	0	10	421	46	0	10	10	11	2	55	7	30	0
PM Peak Hour Volumes		132	969	56	1	62	2054	210	1	60	20	49	0	183	34	118	0
% of Total Traffic		3.3%	24.5%	1.4%		1.6%	52.0%	5.3%		1.5%	0.5%	1.2%		4.6%	0.9%	3.0%	
% Directional			29.3%				58.9%		Intersection		3.3%				8.5%		
PM Peak Hour Factor			0.90				0.95		0.96		0.75				0.84		

Traffic Count Data Sheet

Year Counts Taken: 2015

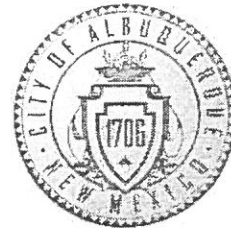
E-W Street:
N-S Street:Gibson Blvd.
Walker Rd.Speed Limit (Gibson Blvd.)= 45 MPH
Speed Limit (Walker Rd.)= 25 MPH
3/19/15

UNSIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	0	471	40	0	0	469	0	0	0	0	0	0
7:15 AM	7:30 AM	0	528	15	0	0	207	0	0	0	0	0	0
7:30 AM	7:45 AM	0	501	28	0	0	217	0	0	0	0	0	0
7:45 AM	8:00 AM	0	513	44	0	0	318	0	0	0	0	0	0
8:00 AM	8:15 AM	0	443	38	0	0	292	0	0	0	0	0	0
8:15 AM	8:30 AM	0	404	41	4	0	304	0	0	0	0	0	0
8:30 AM	8:45 AM	0	362	45	0	0	268	0	0	0	0	0	0
8:45 AM	9:00 AM	0	418	22	0	0	276	0	0	0	0	0	0
AM Peak Hour Volumes		0	1985	125	0	0	1034	0	0	0	0	5	0
% of Total Traffic		0.0%	63.0%	4.0%	0.0%	0.0%	32.8%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
% Directional			67.0%				32.8%		0.2%				0.0%
AM Peak Hour Factor			0.95				0.81		Intersection				0.42
									0.90				

Begin Time	End Time	Eastbound (Gibson Blvd.)			Westbound (Gibson Blvd.)			Northbound (Walker Rd.)			Southbound (Walker Rd.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	0	328	9	2	0	584	0	0	0	0	0	0
4:15 PM	4:30 PM	0	295	5	1	0	540	0	0	0	0	0	0
4:30 PM	4:45 PM	0	290	9	0	0	613	0	0	0	0	0	0
4:45 PM	5:00 PM	0	307	1	0	0	589	0	0	0	0	0	0
5:00 PM	5:15 PM	0	262	40	0	0	560	0	0	0	0	0	0
5:15 PM	5:30 PM	0	302	8	0	0	508	0	0	0	0	0	0
5:30 PM	5:45 PM	0	309	7	0	0	583	0	0	0	0	0	0
5:45 PM	6:00 PM	0	267	6	0	0	477	0	0	0	0	0	0
PM Peak Hour Volumes		0	1220	24	3	0	2326	0	0	0	0	21	0
% of Total Traffic		0.0%	33.9%	0.7%		0.0%	64.7%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
% Directional			34.6%				64.7%		0.6%				0.0%
PM Peak Hour Factor			0.92				0.95		Intersection				0.75
									0.97				

CITY OF ALBUQUERQUE



STANDARD LETTER SCOPE OF TRAFFIC IMPACT STUDY (TIS)

TO: Terry Brown, P.E., PTOE
P. O. Box 92051
Albuquerque, NM 87199-2051
tobe@swcp.com

MEETING DATE: February 27, 2015

ATTENDEES: Terry Brown, Jeanne Wolfenbarger (COA)

PROJECT: Chili's, Chick-fil-A, and McDonalds (southeast corner of Gibson and University)

REQUESTED CITY ACTION: ☐ Zone Change ☐ Site Development Plan

☒ Subdivision ☒ Building Permit ☐ Sector Plan ☐ Sector Plan Amendment

☐ Curb Cut Permit ☐ Conditional Use ☐ Annexation ☐ Site Plan Amendment

ASSOCIATED APPLICATION: The development will include a Chili's restaurant and a Chick Filet Restaurant, and it will possibly include a McDonalds. (The development is located at the southeast corner of University Boulevard and Gibson Boulevard.) Access is proposed off of University Boulevard and from the end of Miles Road. In addition, left turn access onto Walker Drive from Gibson Boulevard is desired for the new development.

O Box 1293

Albuquerque

The Traffic Impact Study should follow the standard report format, which is outlined in the DPM. The following supplemental information is provided for the preparation of this specific study. As each item identified in the scoping letter is completed, check the appropriate (box).

New Mexico 87103

1. Trip Generation - Use Trip Generation Manual, 9th Edition (Incorporate 30% pass-by traffic)

www.cabq.gov

2. Appropriate study area:

Signalized Intersections: University / Gibson

Unsignalized Intersections: University / Walker

Driveway Intersections: All proposed site drives.

3. Intersection turning movement counts (7-9 a.m. peak hour, 4-6 p.m. peak hour for Chick-fil-A and Chili's only; If McDonalds is included, also include noon peak hour analysis in addition to morning and evening peak hour).

Intersections that need to be counted by developer: signalized and unsignalized listed above.

4. Type of intersection progression and factors to be used:
Type III arrival type (see "2010 Highway Capacity Manual" or equivalent as approved by staff). Unless otherwise justified, peak hour factors and % heavy commercial should be

Albuquerque - Making History 1706-2006

taken directly from the MRCOG turning movement data provided or as calculated from current count data by consultant.

5. Boundaries of area to be used for trip distribution:
City Wide - residential, office or industrial;
2-mile radius - commercial;
6. Basis for trip distribution.
Residential – Use inverse relationship based upon distance and employment. Use employment data from 2035 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Office/Industrial - Use inverse relationship based upon distance and population. Use population data from 2035 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Commercial - Use relationship based upon population. Use population data from 2035 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.
7. Traffic Assignment: Logical routing on the major street system.
8. Proposed developments which have been approved but not constructed that are to be included in the analyses: ***UNM South Gibson Commercial District TIS (2011)***
9. Method of intersection capacity analysis - planning or operational (see "2010 Highway Capacity Manual" or equivalent [i.e. HCS, Synchro, Teapac, etc.] as approved by staff). Must use latest version of design software and/or current edition of design manual.
Implementation Year: 2017
10. Traffic conditions for analysis:
 - a. Project completion year without proposed development (yr. 2017);
 - b. Project completion year with proposed development (yr. 2017).
11. Background traffic growth.
Method: use 10-year historical growth based on standard data from the MRCOG Traffic Flow Maps. Minimum growth rate to be used is 1/2%.
12. Planned (programmed) traffic improvements.
List planned CIP improvements in study area and projected project implementation year: None at this time.
13. Items to be included in the study:
 - a. Intersection analysis.
 - b. Arterial LOS analysis;
 - c. Recommended street, intersection and signal improvements.
 - d. Site design features such as turning lanes, median cuts, queuing requirements and site circulation, including driveway signalization and visibility.
 - e. Transportation system impacts.
 - f. Other mitigating measures.

CITY OF ALBUQUERQUE

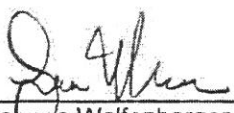


g. Accident analyses ____yes ☒ no.

h. Weaving analyses ____yes ☒ no.

14. Number of copies of report required for the TIS Study only: 2 hard copies plus electronic copy
15. Separate Access Study will be required to include left turn access from Gibson Boulevard onto Walker Drive along with median cut to allow left turn access. This still requires approval from Debbie Bauman of DMD prior to submitting access study to MRCOG. If the proposal is acceptable, the necessary number of copies will need to be submitted to MRCOG for the review by the Request for Access Committee.

The Traffic Impact Study for this development proposal, project name, shall be performed in accordance with the above criteria. If there are any questions regarding the above items, please contact me at 924-3924.



Jeanne Wolfenbarger, P.E.
Senior Engineer for
Transportation Development Section

03-05-15
Date

O Box 1293

Albuquerque

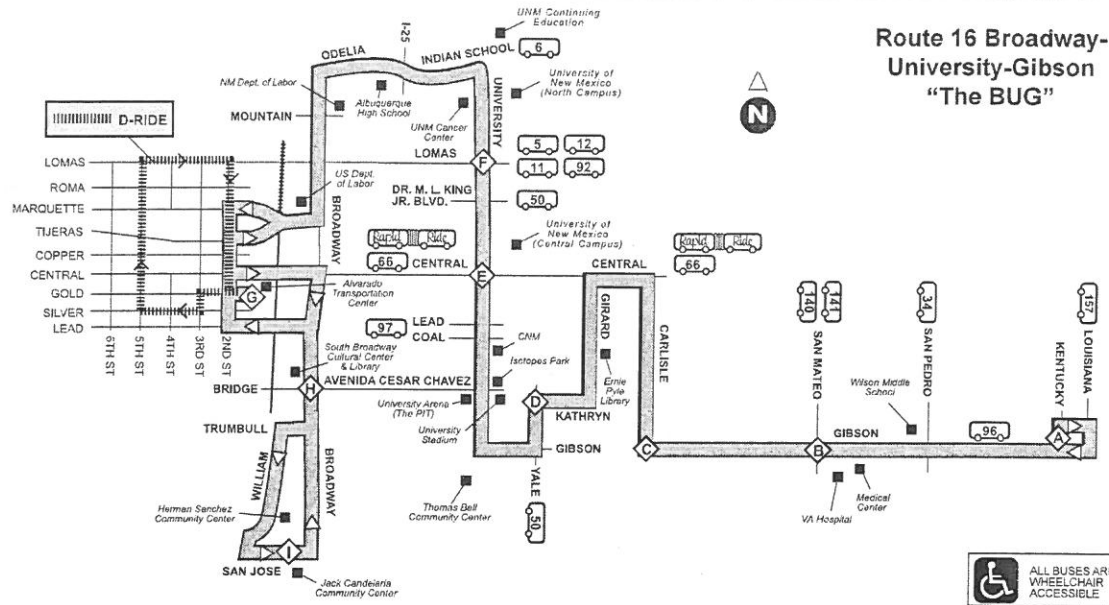
New Mexico 87103

www.cabq.gov

cc: TIS Task Force Attendees
Debbie Bauman, Public Works Strategic Program Manager, DMD
file

Route / Ruta 16 Broadway/University/Gibson

Effective: January 2015



Route 16 - Weekday Westbound

A	B	C	D	E	F	G	H	I
6:26a	6:29a	6:31a	6:45a	6:55a	6:58a	7:09a	7:17a	7:24a
7:09a	7:12a	7:15a	7:30a	7:40a	7:43a	7:54a	8:03a	8:10a
7:57a	8:00a	8:03a	8:18a	8:28a	8:31a	8:42a	8:51a	8:58a
8:47a	8:50a	8:53a	9:08a	9:18a	9:21a	9:32a	9:41a	9:48a
9:35a	9:38a	9:41a	9:56a	10:06a	10:09a	10:20a	10:29a	10:36a
10:23a	10:26a	10:29a	10:44a	10:55a	10:58a	11:10a	11:19a	11:26a
11:12a	11:15a	11:18a	11:33a	11:44a	11:47a	11:59a	12:08p	12:15p
11:57a	12:00p	12:03p	12:18p	12:29p	12:32p	12:44p	12:53p	1:00p
12:43p	12:46p	12:49p	1:04p	1:16p	1:19p	1:31p	1:41p	1:48p
1:37p	1:40p	1:43p	1:58p	2:10p	2:13p	2:25p	2:35p	2:42p
2:24p	2:27p	2:30p	2:45p	2:57p	3:00p	3:12p	3:22p	3:29p
3:14p	3:17p	3:20p	3:35p	3:47p	3:50p	4:02p	4:12p	4:19p
4:03p	4:06p	4:09p	4:24p	4:36p	4:39p	4:51p	5:01p	5:08p
4:50p	4:53p	4:56p	5:11p	5:22p	5:25p	5:37p	5:46p	5:53p
5:41p	5:44p	5:47p	6:02p	6:13p	6:16p	6:28p	6:37p	6:44p

Route 16 - Weekday Eastbound

I	H	G	F	E	D	C	B	A
6:00a	6:04a	6:10a	6:22a	6:24a	6:34a	6:48a	6:51a	6:54a
6:45a	6:49a	6:55a	7:07a	7:09a	7:19a	7:33a	7:36a	7:39a
7:31a	7:35a	7:41a	7:54a	7:56a	8:06a	8:20a	8:23a	8:26a
8:16a	8:20a	8:26a	8:39a	8:41a	8:51a	9:05a	9:08a	9:11a
9:06a	9:10a	9:16a	9:29a	9:31a	9:41a	9:55a	9:58a	10:01a
9:55a	9:59a	10:05a	10:18a	10:20a	10:30a	10:44a	10:47a	10:50a
10:46a	10:50a	10:56a	11:09a	11:11a	11:21a	11:35a	11:38a	11:41a
11:33a	11:37a	11:43a	11:56a	11:58a	12:08p	12:25p	12:28p	12:31p
12:21p	12:25p	12:31p	12:44p	12:46p	12:56p	1:13p	1:16p	1:19p
1:08p	1:12p	1:18p	1:31p	1:33p	1:43p	2:00p	2:03p	2:06p
1:57p	2:01p	2:07p	2:21p	2:23p	2:34p	2:51p	2:54p	2:57p
2:46p	2:50p	2:56p	3:10p	3:12p	3:23p	3:40p	3:43p	3:46p
3:36p	3:40p	3:46p	4:00p	4:02p	4:13p	4:30p	4:33p	4:36p
4:23p	4:27p	4:33p	4:47p	4:49p	5:00p	5:17p	5:20p	5:23p
5:12p	5:16p	5:22p	5:36p	5:38p	5:49p	6:06p	6:09p	6:12p
6:00p	6:04p	6:10p	6:22p	6:24p	6:35p	6:50p	6:53p	6:56p

Route 16 - Saturday Westbound

A	B	C	D	E	F	G	H	I
6:27a	6:30a	6:32a	6:46a	6:56a	6:59a	7:11a	7:21a	7:28a
7:32a	7:35a	7:37a	7:51a	8:01a	8:04a	8:16a	8:26a	8:33a
8:37a	8:40a	8:42a	8:56a	9:06a	9:09a	9:21a	9:31a	9:38a
9:43a	9:46a	9:48a	10:02a	10:12a	10:15a	10:27a	10:37a	10:44a
10:48a	10:51a	10:53a	11:07a	11:17a	11:20a	11:32a	11:42a	11:49a
11:42a	11:45a	11:47a	12:01p	12:11p	12:14p	12:26p	12:36p	12:43p
12:28p	12:31p	12:33p	12:47p	12:57p	1:00p	1:12p	1:22p	1:29p
1:13p	1:16p	1:18p	1:32p	1:42p	1:45p	1:57p	2:07p	2:14p
1:58p	2:01p	2:03p	2:17p	2:27p	2:30p	2:42p	2:52p	2:59p
2:43p	2:46p	2:48p	3:02p	3:12p	3:15p	3:27p	3:37p	3:44p
3:28p	3:31p	3:33p	3:47p	3:57p	4:00p	4:12p	4:22p	4:29p
4:13p	4:16p	4:18p	4:32p	4:42p	4:45p	4:57p	5:07p	5:14p
4:58p	5:01p	5:03p	5:17p	5:27p	5:30p	5:42p	5:52p	5:59p

Route 16 - Saturday Eastbound

I	H	G	F	E	D	C	B	A
6:22a	6:26a	6:32a	6:44a	6:46a	6:56a	7:10a	7:13a	7:16a
7:32a	7:36a	7:42a	7:54a	7:56a	8:06a	8:20a	8:23a	8:26a
8:37a	8:41a	8:47a	8:59a	9:01a	9:11a	9:25a	9:28a	9:31a
9:42a	9:46a	9:52a	10:04a	10:06a	10:16a	10:30a	10:33a	10:36a
10:30a	10:34a	10:40a	10:52a	10:54a	11:04a	11:18a	11:21a	11:24a
11:16a	11:19a	11:25a	11:37a	11:39a	11:49a	12:03p	12:06p	12:09p
12:00p	12:04p	12:10p	12:22p	12:24p	12:34p	12:49p	12:52p	12:55p
12:47p	12:51p	12:57p	1:09p	1:11p	1:21p	1:36p	1:39p	1:42p
1:33p	1:37p	1:43p	1:55p	1:57p	2:07p	2:22p	2:25p	2:28p
2:18p	2:22p	2:28p	2:40p	2:42p	2:52p	3:07p	3:10p	3:13p
3:03p	3:07p	3:13p	3:25p	3:27p	3:37p	3:52p	3:55p	3:58p
3:48p	3:52p	3:58p	4:10p	4:12p	4:22p	4:37p	4:40p	4:43p
4:33p	4:37p	4:43p	4:55p	4:57p	5:07p	5:22p	5:25p	5:28p
5:18p	5:22p	5:28p	5:40p	5:42p	5:52p	6:07p	6:10p	6:13p

Route 16 - Sunday Westbound

9:02a	9:05a	9:07a	9:21a	9:31a	9:34a	9:45a	9:54a	10:01a
10:07a	10:10a	10:12a	10:26a	10:36a	10:39a	10:50a	10:59a	11:06a
11:12a	11:15a	11:17a	11:31a	11:41a	11:44a	11:55a	12:04p	12:11p
12:17p	12:20p	12:22p	12:36p	12:46p	12:49p	1:00p	1:09p	1:16p
1:22p	1:25p	1:27p	1:41p	1:51p	1:54p	2:05p	2:14p	2:21p
2:27p	2:30p	2:32p	2:46p	2:56p	2:59p	3:10p	3:19p	3:26p
3:34p	3:37p	3:39p	3:53p	4:03p	4:06p	4:17p	4:26p	4:33p

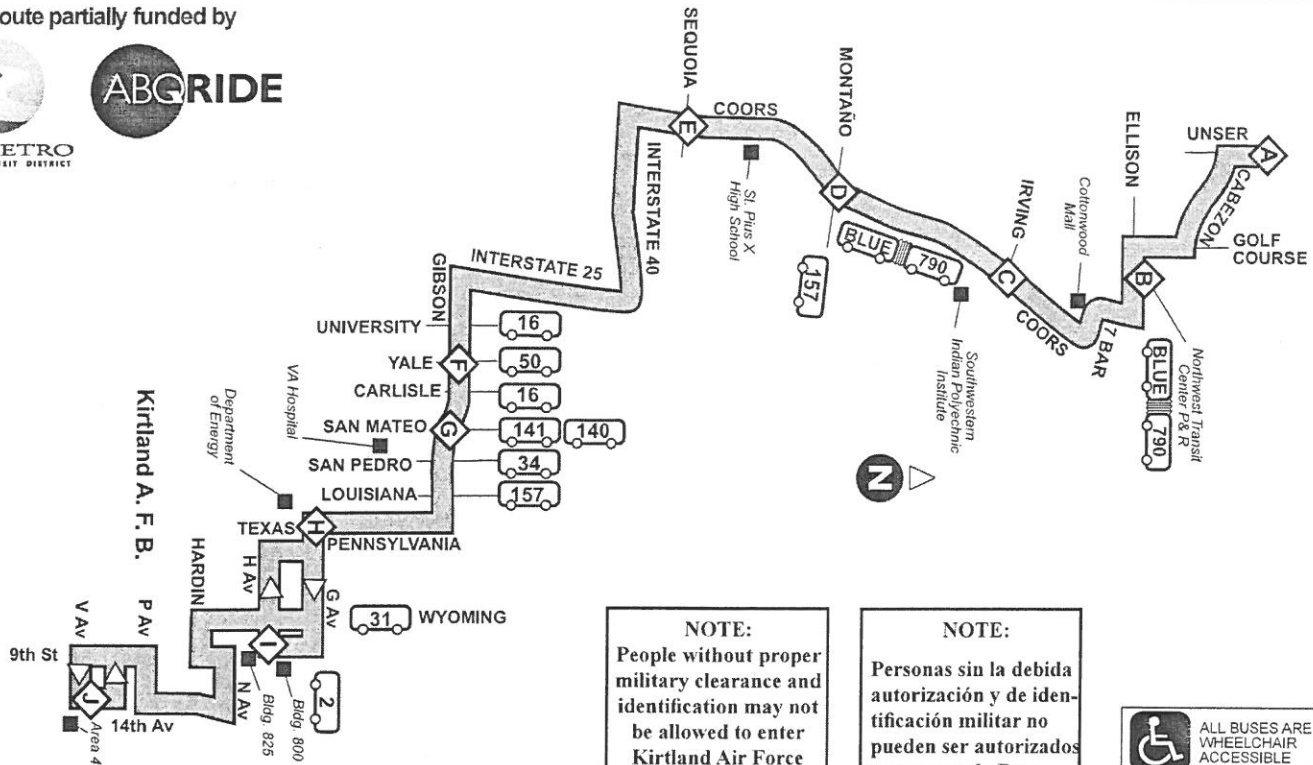
Route 16 - Sunday Eastbound

8:55a	8:59a	9:05a	9:17a	9:19a	9:28a	9:42a	9:45a	9:48a
10:05a	10:09a	10:15a	10:27a	10:29a	10:38a	10:52a	10:55a	10:58a
11:10a	11:14a	11:20a	11:32a	11:34a	11:43a	11:57a	12:00p	12:03p
12:15p	12:19p	12:25p	12:37p	12:39p	12:49p	1:04p	1:07p	1:10p
1:20p	1:24p	1:30p	1:42p	1:44p	1:54p	2:09p	2:12p	2:15p
2:25p	2:29p	2:35p	2:47p	2:49p	2:59p	3:14p	3:17p	3:20p
3:30p	3:34p	3:40p	3:52p	3:54p	4:04p	4:19p	4:22p	4:25p

Route / Ruta 96 Crosstown Commuter

Effective: January 2015

Route partially funded by



NOTE:
People without proper military clearance and identification may not be allowed to enter Kirtland Air Force Base.

NOTE:
Personas sin la debida autorización y de identificación militar no pueden ser autorizados a entrar en la Base Aérea Kirtland.



Route 96 - Weekday Southbound

Route 96 - Weekday Northbound

AREA 4	BUILDING 800	G STREET D.O.E. BLDG.	GIBSON & SAN MATEO	GIBSON & YALE	COORS & SEQUOIA	COORS & MONTANO	COORS & IRVING	NORTHWEST TRANSIT CENTER PAR	SOUTHERN & UNSER
A	B	C	D	E	F	G	H	I	J
5:16a	5:26a	5:37a	5:43a	5:48a	6:00a	6:04a	6:11a	6:15a	6:27a
5:30a	5:40a	5:51a	5:57a	6:02a	6:14a	6:18a	6:25a	6:29a	6:41a
5:55a	6:07a	6:17a	6:22a	6:27a	6:41a	6:46a	6:53a	6:57a	7:09a
6:25a	6:37a	6:47a	6:52a	6:57a	7:11a	7:16a	7:23a	7:27a	7:39a
6:46a	6:59a	7:11a	7:18a	7:24a	7:44a	7:49a	7:58a	8:01a	8:12a

AREA 4	BUILDING 800	G STREET D.O.E. BLDG.	GIBSON & SAN MATEO	GIBSON & YALE	COORS & SEQUOIA	COORS & MONTANO	COORS & IRVING	NORTHWEST TRANSIT CENTER PAR	SOUTHERN & UNSER
J	I	H	G	F	E	D	C	B	A
3:51p	3:58p	4:02p	4:09p	4:16p	4:33p	4:39p	4:45p	4:56p	5:12p
4:02p	4:09p	4:13p	4:20p	4:27p	4:44p	4:50p	4:56p	5:07p	5:23p
4:19p	4:28p	4:32p	4:39p	4:46p	5:03p	5:09p	5:16p	5:27p	5:43p
4:35p	4:44p	4:48p	4:55p	5:02p	5:19p	5:25p	5:32p	5:43p	5:59p
5:15p	5:24p	5:28p	5:35p	5:42p	5:59p	6:05p	6:12p	6:23p	6:39p

IMPORTANT:

Due to varying military restrictions, access to Kirtland Air Force Base may be changed at any time. If you are traveling to KAFB please call 243-RIDE (243-7433) for current information.

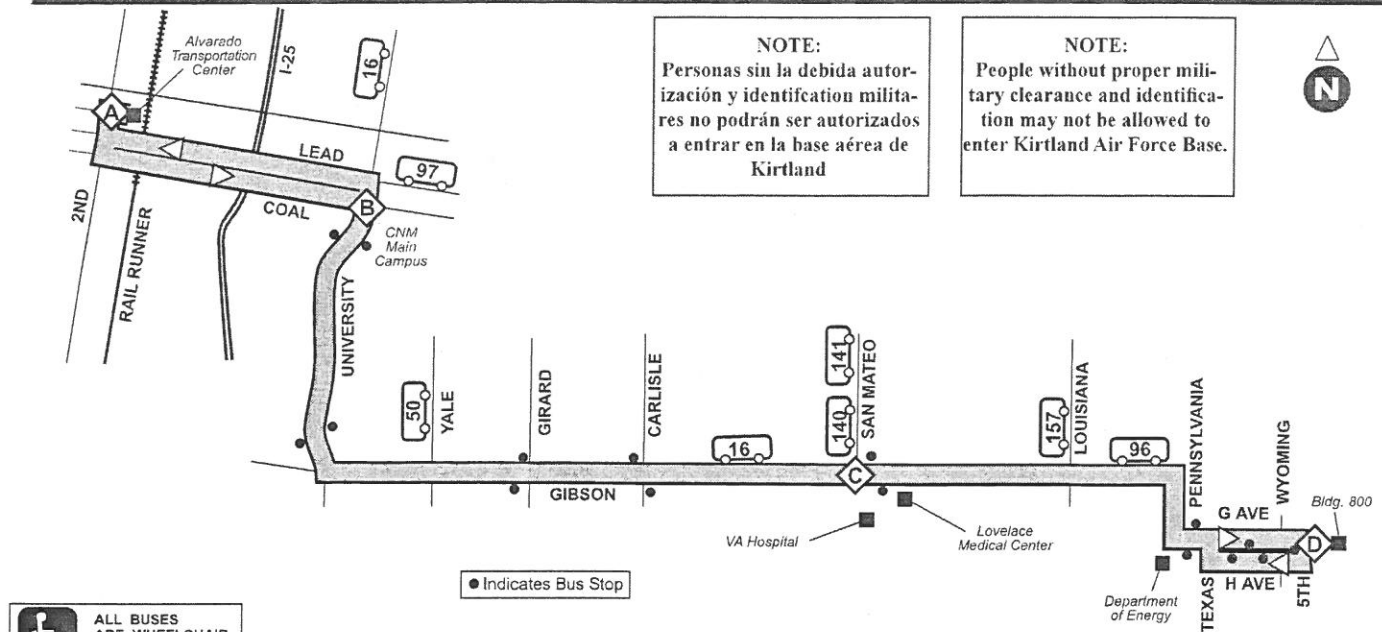
IMPORTANTE:

Debido a diferentes restricciones militares, el acceso a La Base Aerea Kirtland puede cambiar en cualquier momento. Si usted viaja hacia KAFB en autobús, por favor llame al 243-RIDE (243-7433) para obtener información actualizada.

Route / Ruta 217

Effective: January 2015

Downtown - Kirtland AFB Limited



Kirtland Air Force Base

Route 217 - Weekday Eastbound

Route 217 - Weekday Westbound

ALVARADO TRANSPORTATION CENTER A	UNIVERSITY & COAL B	GIBSON & SAN MATEO C	BUILDING 800 KIRTLAND AFB D
** 6:27a	6:33a	6:45a	6:54a
** 7:22a	7:28a	7:40a	7:51a
4:20p	4:26p	4:38p	4:47p

BUILDING 800 KIRTLAND AFB D	GIBSON & SAN MATEO C	UNIVERSITY & COAL B	ALVARADO TRANSPORTATION CENTER A
7:01a	7:10a	7:20a	7:28a
3:49p	3:58p	4:08p	4:16p
4:57p	5:06p	5:16p	5:24p

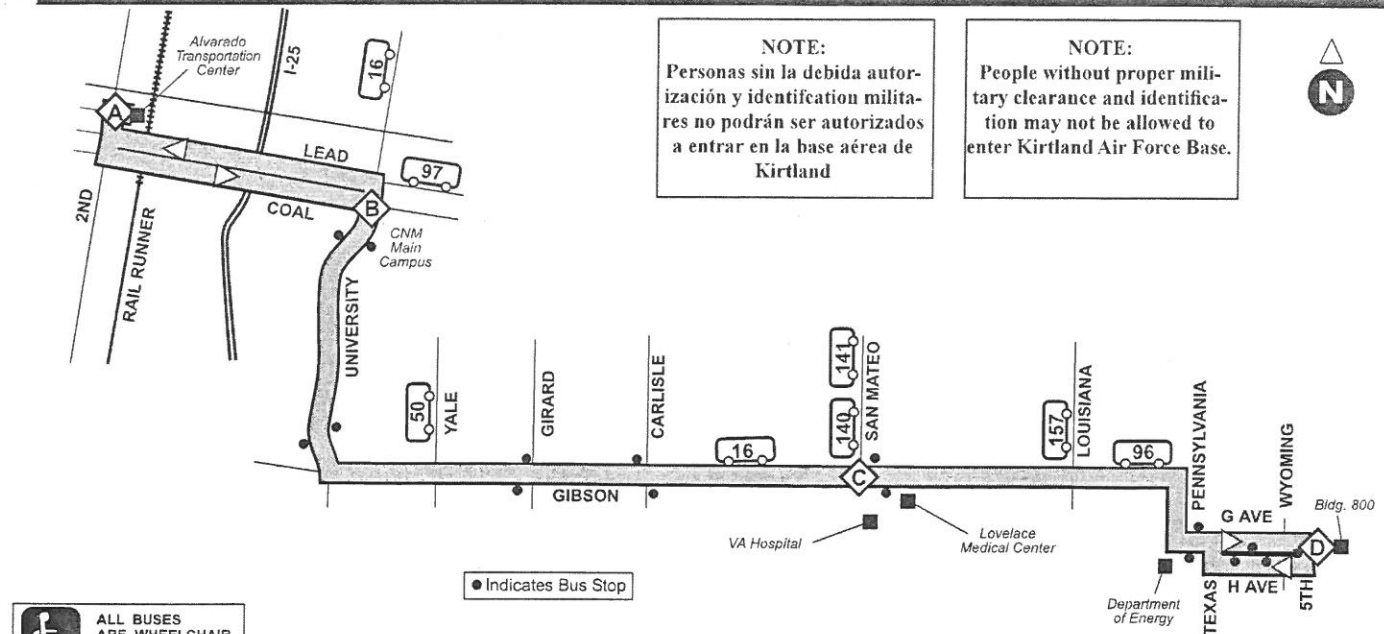
** For these trips the bus will wait at the ATC for passengers to transfer from the NM Rail Runner Express.

** Para estos viajes el camión esperará en el ATC para pasajeros que quieren transferir desde NM Rail Runner Express (tren).

Route / Ruta 217

Effective: January 2015

Downtown - Kirtland AFB Limited



Kirtland Air Force Base

Route 217 - Weekday Eastbound

Route 217 - Weekday Westbound

ALVARADO TRANSPORTATION CENTER A	UNIVERSITY & COAL B	GIBSON & SAN MATEO C	BUILDING 800 KIRTLAND AFB D
** 6:27a	6:33a	6:45a	6:54a
** 7:22a	7:28a	7:40a	7:51a
4:20p	4:26p	4:38p	4:47p

BUILDING 800 KIRTLAND AFB D	GIBSON & SAN MATEO C	UNIVERSITY & COAL B	ALVARADO TRANSPORTATION CENTER A
7:01a	7:10a	7:20a	7:28a
3:49p	3:58p	4:08p	4:16p
4:57p	5:06p	5:16p	5:24p

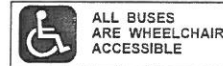
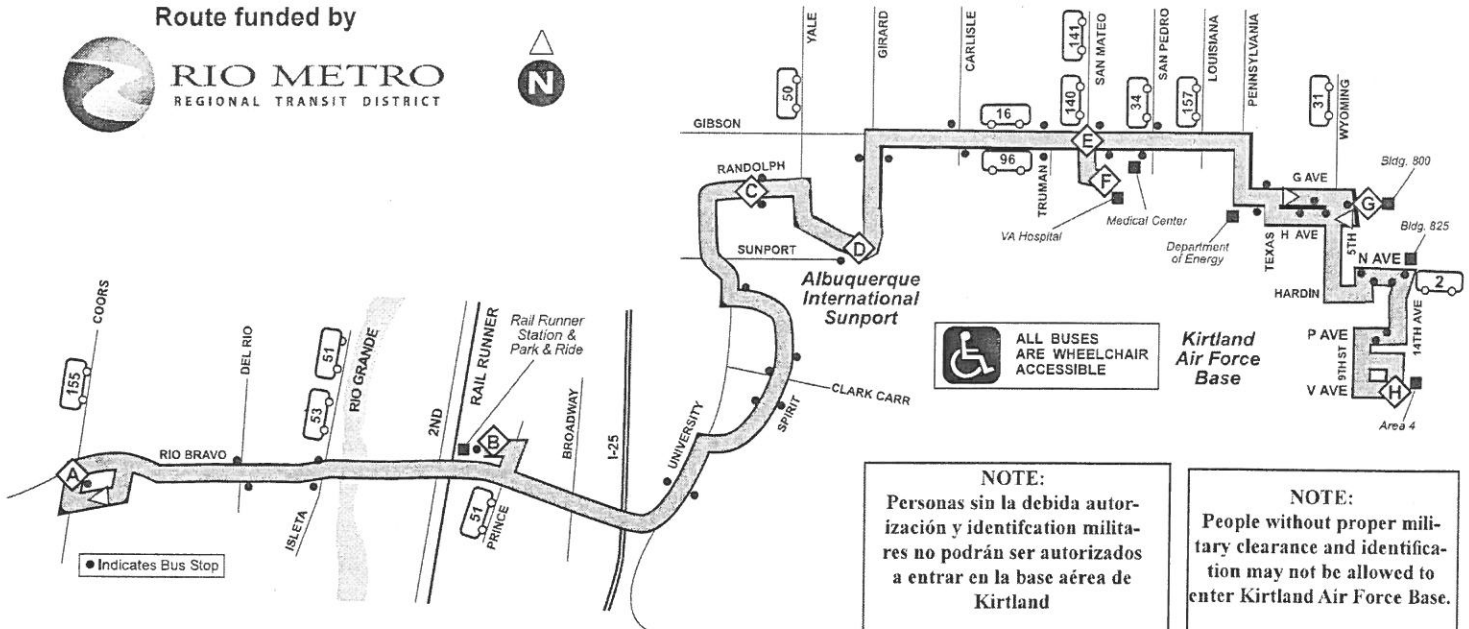
** For these trips the bus will wait at the ATC for passengers to transfer from the NM Rail Runner Express.

** Para estos viajes el camión esperará en el ATC para pasajeros que quieren transferir desde NM Rail Runner Express (tren).

Route / Ruta 222 Rio Bravo - Sunport - Kirtland

Effective: January 2015

Route funded by



Kirtland Air Force Base

NOTE:
Personas sin la debida autorización y identificación militares no podrán ser autorizados a entrar en la base aérea de Kirtland

NOTE:
People without proper military clearance and identification may not be allowed to enter Kirtland Air Force Base.

Route 222 - Weekday Eastbound

COORS & RIO BRAVO	DEPART RAIL RUNNER STATION	DEPART	RAIL RUNNER STATION	ARRIVE	COORS & RIO BRAVO
A	B	C	D	E	F
.....	6:11a	6:23a	6:30a	6:35a	6:43a
5:53a	6:05a	6:11a	6:20a	6:35a	6:43a
.....	7:07a	7:16a	7:19a	7:26a	7:44a
6:49a	7:01a	7:07a	7:19a	7:26a	7:44a
2:28p	2:40p	2:46p	2:58p	3:03p	3:10p
5:40p	5:52p	5:58p	6:08p	6:13p	6:20p

Route 222 - Weekday Westbound

COORS & RIO BRAVO	DEPART	DEPART	RAIL RUNNER STATION	ARRIVE	COORS & RIO BRAVO
A	B	C	D	E	F
7:38a	7:26a	7:26a	7:10a	7:13a	7:01a
2:58p	2:46p	2:40p	2:21p	2:24p	2:10p
4:51p	4:39p	4:32p	4:16p	4:16p	4:05p
6:11p	5:58p	5:51p	5:33p	5:33p	5:22p

Be sure to board the bus which will stop where you need to get off!

VA: These buses serve the stops on:

- University
- Spirit Dr
- Airport
- Girard
- Gibson & Carlisle
- Gibson & Truman
- San Mateo & Gibson and
- ends at the VA Medical Center (San Mateo side).

They do not stop on Randolph Rd. or Kirtland Air Force Base.

KAFB: These buses serve only the stops on:

- Randolph Rd.
- Gibson & Valencia and
- Kirtland Air Force Base.

As in the AM peak, two buses meet the PM peak trains:

VA: These buses serve stops at:

- VA Medical Center (San Mateo side)
- For service from Gibson & San Mateo, use stop at VA or Truman
- Gibson & Truman
- Gibson & Carlisle
- Girard
- Airport
- Spirit Dr. and
- University.

They do not stop on Randolph Rd.

KAFB: These buses serve only the stops on:

- Kirtland Air Force Base
- Gibson & San Pedro and
- Randolph Rd.

