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Sunport ACE Project
(Gibson Blvd. East of Girard Blvd.)

Traffic Impact Study

April 15, 2014

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(r)

Presented to:

City of Albuquerque
Transportation Development Section

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**Sunport ACE Project
(Gibson Blvd. East of Girard Blvd.)
TRAFFIC IMPACT STUDY**

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**Sunport ACE Project
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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 commercial / office / warehouse / manufacturing center as shown in the Appendix (Page A-2) 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. Also see companion report, Sunport ACE Project Access Justification Study dated April 2014.

STUDY PROCEDURES

A scoping meeting was held on January 13, 2014 with City of Albuquerque staff (Tony Loyd and Debbie Bauman) 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 (2020).

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:
 - a) A 10,000 S.F. High Turnover Sit-down Restaurant
 - b) A Gas Station w/ convenience market with 20 fueling positions
 - c) A 68,000 S.F. Shopping Center
 - d) A 20,000 S.F. Variety Store
 - e) 218,000 S.F. of Manufacturing
 - f) 2 General Office Buildings (39,300 S.F. and 33,000 S.F.)
 - g) 3 Warehouse Buildings (2 @ 330,000 S.F. and 91,700 S.F.)See Appendix Pages A-6 thru A-16.
- 2) Calculate trip distribution for the newly generated trips based on the following criteria: *Commercial Development* - based on distribution of 2020 population data within a two mile radius. *Office / Warehouse / Manufacturing Development* - based on citywide distribution of 2020 population data. See Appendix Pages A-17 thru A-20 (commercial) and A-23 thru A-28 (office).
- 3) Add in trips generated by previously approved development from the UNM Commercial Development at Gibson / University. See Appendix Pages A-45 and A-49.
- 4) Determine Trip Assignments (for 2020) for the newly generated trips based on the results of the Trip Distribution Analysis and logical routing to and from the site. See Appendix Pages A-21 thru A-22 (commercial) and A-29 thru A-32 (office).

- 5) Conduct new AM and PM Peak Hour turning movement counts for the intersections of Gibson Blvd. / Louisiana Blvd, Gibson Blvd. / Carlisle Blvd, and Gibson Blvd. / Girard Blvd. A 2011 traffic count will be used for Gibson Blvd / I-25 Ramps. See Appendix Pages A-103 thru A-108.
- 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). See Appendix Pages A-33 thru A-35.
- 7) Determine 2020 NO BUILD turning movement Volumes for the intersections of Gibson Blvd. / Louisiana Blvd, Gibson Blvd. / Carlisle Blvd, Gibson Blvd. / Girard Blvd. and Gibson Blvd / I-25 W. Ramp and Gibson Blvd. / I-25 E. Ramp. See Appendix Pages A-36 thru A-58.
- 8) Add in data from Trip Assignments Maps and Tables to the 2020 NO BUILD Volumes to obtain 2020 BUILD Volumes for this project. See Appendix Pages A-36 thru A-58.
- 9) Provide signalized and unsignalized intersection analyses for the following intersections:

INTERSECTION	TYPE CONTROL	NO BUILD	BUILD
1) Gibson Blvd. / Louisiana Blvd	Traffic Signal	2020	2020
2) Gibson Blvd. / Carlisle Blvd.	Traffic Signal	2020	2020
3) Gibson Blvd. / Girard	Traffic Signal	2020	2020
4) Gibson Blvd. / I-25 W. Ramp	Stop Sign	2020	2020
5) Gibson Blvd. / Driveway "A"	Stop Sign	N/A	2020
6) Gibson Blvd. / I-25 E. Ramp	Stop Sign	2020	2020
7) Miles Rd. / Girard Blvd.	Stop Sign		
8) Driveway "C" / Girard Blvd.	Stop Sign	N/A	2020
9) Driveway "D" / Girard Blvd.	Stop Sign	N/A	2020
10) Driveway "E" / Girard Blvd.	Stop Sign	N/A	2020

PREVIOUS RELATED TRAFFIC IMPACT STUDIES

There is one previously approved proposed development that was included in the background traffic volumes for this study – the UNM Commercial Development located at Gibson Blvd. / University Blvd.

GENERAL AREA CHARACTERISTICS

The proposed site development plan is for a property bounded on the north by Gibson Blvd., bounded on the east by Hickman Ave. and bounded on the west by Girard Blvd. as depicted on the Vicinity Map on Page A-1 of the Appendix of this report. The total area of the requested site development plan is approximately 70 acres. The adjacent properties of this site include a mix of Albuquerque Sunport, Kirtland Air Force Base (KAFB), commercial, and residential. More detailed zoning information may be obtained upon inspection of the Vicinity Map on Page A-1 in the Appendix.

AREA STREET NETWORK

Gibson Blvd. is classified as a Limited Access Roadway on the Long Range Roadway System Map for the Albuquerque Metropolitan Planning Area and is generally a six lane paved urban section roadway with curb and gutter on both sides of the street and a raised median east of I-25. The posted speed limit on Gibson Blvd. in the vicinity of this project is 45 MPH.

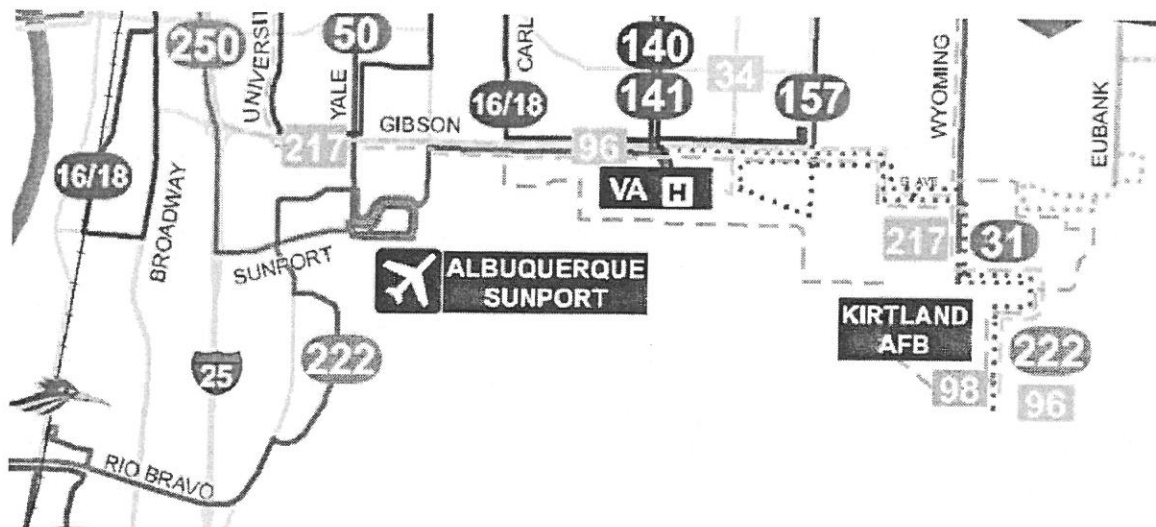
Louisiana Blvd. is classified as an Urban Principal Arterial Roadway on the Long Range Roadway System Map for the Albuquerque Metropolitan Planning Area and is generally a five lane paved urban section roadway with curb and gutter on both sides of the street and a two-way, left-turn lane in the center north of Gibson Blvd. Louisiana Blvd. is generally a two lane roadway section south of Gibson Blvd. with curb and gutter and sidewalk on the west side of the street. The posted speed limit on Louisiana Blvd in the vicinity of this project is 35 MPH.

Carlisle Blvd. is classified as an Urban Minor Arterial Roadway on the Long Range Roadway System Map for the Albuquerque Metropolitan Planning Area and is generally a two lane urban roadway section with sidewalk and curb and gutter on both sides of the street north of Gibson Blvd. Carlisle Blvd. is generally a four lane urban roadway section with sidewalk on the east side of the street and curb and gutter on both sides of the street south of Gibson Blvd. The posted speed limit is 30 MPH.

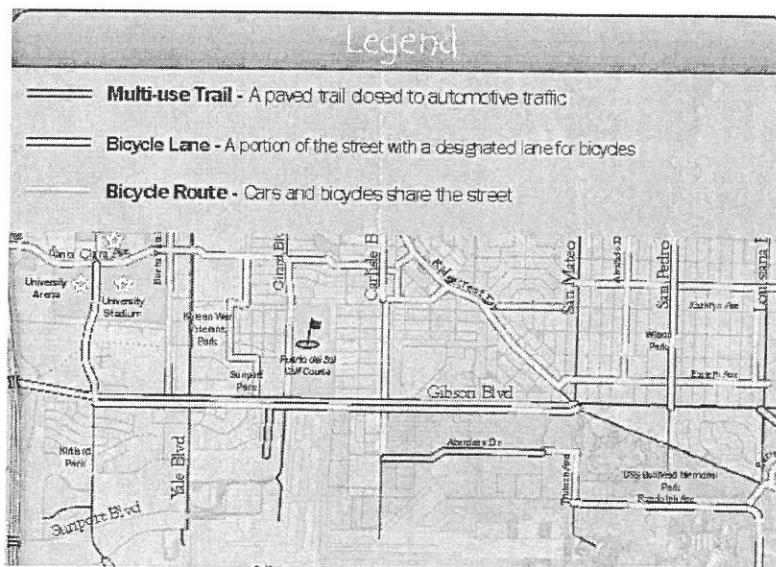
Girard Blvd. is classified as Collector Roadway on the Long Range Roadway System Map for the Albuquerque Metropolitan Planning Area and is generally a four lane urban roadway section with sidewalk and curb and gutter on both sides of the street north of Gibson Blvd. Girard Blvd. is generally a two lane urban roadway section with a paved trail on the west side of the street and curb and gutter on both sides of the street to Miles Rd. south of Gibson Blvd. The posted speed limit is 30 MPH.

Interstate 25 is a north-south oriented freeway / expressway connecting El Paso, Texas with Denver Colorado that passes through the center of Albuquerque. There are entrance / exit ramps on I-25 at Avenida Caesar Chavez and at Gibson Blvd. near the project 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 Blvd. / 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 to KAFB. Route 222 has two different stop schedules with limited stops and runs from Coors Blvd. / Rio Bravo Blvd. thru the ABQ Sunport, north on Girard Blvd. and east on Gibson Blvd. to either the VA Medical Center or KAFB. (See map below and schedules in the Appendix on Pages A-109 thru A-113.)



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



EXISTING TRAFFIC VOLUMES

2012 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 2013 / 2014 obtained by the consulting engineer for the following intersections:

*Gibson Blvd. / Louisiana Blvd.
Gibson Blvd. / Carlisle Blvd.
Gibson Blvd. / Girard Blvd.
Gibson Blvd. / I-25 Ramps*

The counts are included on Pages A-103 thru A-108 in the Appendix of this report.

EXISTING (2014) LEVELS OF SERVICE

Current levels-of-service for the intersections analyzed in this study are not reported. Most of the offsite intersections analyzed in this study resulted in acceptable levels-of-service for the 2020 AM and PM Peak Hour NO BUILD and BUILD Conditions. Therefore, those intersections, when analyzed for existing conditions, will result in acceptable levels-of-service.

PROPOSED DEVELOPMENT

The subject area of land targeted for the site development plan totals approximately 70 acres. The proposed conceptual site development plan consists of the following approximate land uses:

- a) A 10,000 S.F. High Turnover Sit-down Restaurant
- b) A Gas Station w/ convenience market with 20 fueling positions
- c) A 68,000 S.F. Shopping Center
- d) A 20,000 S.F. Variety Store
- e) 218,000 S.F. of Manufacturing
- f) 2 General Office Buildings (39,300 S.F. and 33,000 S.F.)
- g) 3 Warehouse Buildings (2 @ 330,000 S.F. and 91,700 S.F.)

See the conceptual site development plan on Page A-2 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 access point on Gibson Blvd. and four access points on Girard Blvd.

Since Gibson Blvd. is classified as a Limited Access Roadway, then the proposed Access on Gibson Blvd. will need to be approved by the Transportation Coordinating Committee (T.C.C.) and reviewed by the Roadway Access Committee (R.A.C.) A companion report, Sunport ACE Project Access Justification Study dated April 2014 for

this project analyzes the benefits and / or impacts of implementing the proposed left-turn-in, right-turn-in, right-turn-out driveway on Gibson Blvd. between Girard Blvd. and Carlisle Blvd.

TRIP GENERATION

Projected trips were calculated from data in the Institute of Transportation Engineers Trip Generation report (9th Edition, 2009). Trips for the development were determined based on land uses defined on the Conceptual Site Development Plan on Page A-2 in the Appendix of this report. No adjustments were made for Pass-by Trips in this study.

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

ACE Sunport Project (Gibson Blvd. / Hickam Ave.) **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				
Tract "A"	Gasoline / Service Station w/ Convenience Market (945)	20.00	3,256	102	102	135
Tract "A"	Shopping Center (820)	68.00	5,285	76	47	222
Tract "A"	Variety Store (814)	20.00	1,281	38	38	68
Tract "A"	High Turnover (Sit-Down) Restaurant (932)	10.00	1,272	59	49	59
Tract "B"	Manufacturing (140)	218.00	867	118	33	55
Tract "C"	General Office Building (710)	39.30	646	80	11	21
Tract "C"	Warehousing (150)	91.70	458	62	17	14
Tract "D"	Warehousing (150)	330.00	1,376	126	33	32
Tract "E"	Warehousing (150)	330.00	1,376	126	33	32
Tract "E"	General Office Building (710)	33.00	565	69	9	20
Subtotal			16,382	856	372	658
						1,014

See Appendix Pages A-7 thru A-16 for 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 2020 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 2020 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of data analysis subzones is shown in the Appendix on Pages A-17 thru A-20.

Office

Primary and diverted linked trips for the land use development were distributed proportionally to the 2020 projected population of the Subareas citywide. 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 2020 population data to utilize for this analysis. Population Subareas were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of subareas is shown in the Appendix on Pages A-23 thru A-28.

TRIP ASSIGNMENT

Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and then based on logical routing to and from the site. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments are shown on the Trip Assignments Maps on Pages A-21 thru A-22 for commercial trip assignments and on Pages A-29 thru A-32 for office trip assignments in the Appendix.

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 annual growth rate for each of the three or four approaches to each intersection being analyzed.

Forecast link volumes were obtained from the model for the AM and PM Peak Hours for the years 2015 and 2035. 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 were used to grow the existing volumes to the projected 2035 volumes shown at the bottom of the individual intersection spreadsheet in the Turning Movements pages. In some cases, the growth rate was extremely high and a maximum of 5% was substituted. Additionally, 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-39 thru A-58).

PROJECTED PEAK HOUR TURNING MOVEMENTS FOR 2020 BUILDOUT

The calculated growth rates were applied to the most recent peak hour traffic counts (conducted by the consulting engineer) to establish the 2020 background NO BUILD traffic volumes. Then the previously approved development volumes from the UNM Commercial Development were added to the intersections of Gibson Blvd. / I-25 E. Ramp and Gibson Blvd. / I-25 W. Ramp. To those 2020 NO BUILD Volumes volumes, the generated trips based on implementation of the proposed Sunport ACE Project (100%

development) were added to obtain the 2020 BUILD volumes for the intersection analyses. See Appendix Pages A-36 thru A-58 for further information regarding 2020 turning movement counts.

INTERSECTION CAPACITY ANALYSIS

Intersection capacity analyses were performed in accordance with the procedures for signalized and unsignalized intersections in the Highway Capacity Manual, Special Report 209, Transportation Research Board, 2000, using Synchro 8 software for signalized and unsignalized intersections. For signalized intersections, the operational method of analysis was used for implementation year conditions (NO BUILD and BUILD). There was no Horizon Year Analysis required for this study.

Capacity analyses were performed for the following traffic conditions.

Implementation Year (2020) - NO BUILD

Implementation Year (2020) - BUILD

The results of the implementation year (2020), capacity analyses are summarized in the following sections.

RESULTS OF SIGNALIZED INTERSECTION CAPACITY ANALYSES

IMPLEMENTATION YEAR (2020)

Intersection #1 – Gibson Blvd. / Louisiana Blvd. - Pages A-59 thru A-62

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

Intersection: 1 - GIBSON BLVD. / LOUISIANA BLVD.

2020 AM Peak Hour BUILD						2020 PM Peak Hour BUILD					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	B - 18.6	1	B - 19.7	L	1	D - 40.8	1	D - 48.5	
	T	2	B - 17.0	2	B - 18.0	T	2	A - 7.4	2	A - 7.3	
	R	1	B - 10.1	1	B - 10.7	R	1	A - 5.0	1	A - 4.8	
WB	L	1	C - 25.8	1	C - 27.0	L	1	C - 32.1	1	C - 32.2	
	T	3	C - 26.6	3	C - 28.1	T	3	D - 49.8	3	D - 46.7	
	R	1	A - 0.0	1	A - 0.0	R	1	A - 0.0	1	A - 0.0	
NB	L	1	B - 13.7	1	B - 12.8	L	1	C - 30.3	1	C - 31.9	
	T	1	B - 17.1	1	B - 16.0	T	1	D - 36.4	1	D - 38.2	
	R	1	B - 17.4	1	B - 16.2	R	1	D - 37.8	1	D - 39.7	
SB	L	2	B - 14.1	2	B - 14.3	L	2	C - 30.2	2	C - 31.7	
	T	1	B - 16.5	1	B - 16.5	T	1	C - 34.5	1	D - 36.1	
	R	1	B - 18.3	1	B - 18.9	R	1	B - 14.8	1	B - 15.5	
Intersection:		B - 18.0		B - 19.0		D - 35.5		D - 36.4			

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

Existing southbound geometry actually consists of one left turn lane, one shared left turn/thru lane, and one right turn

The implementation year analysis of the signalized intersection of Gibson Blvd. / Louisiana Blvd. indicates that the levels-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. The existing southbound geometry at the intersection actually consists of one left turn lane, one shared left turn/thru lane, and one exclusive right turn lane. However, Synchro 8 Software will not analyze a signalized intersection with a shared thru/turn lane, so this analysis was performed using the southbound geometry shown in the table (dual left turn lanes, one thru lane and one exclusive right turn lane) but is closely representative of the actual existing geometry described previously.

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

Queueing Analysis Summary Sheet

Project: Sunport ACE Project
 Intersection: Gibson Blvd / Louisiana Blvd

2020

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	170	125	2	463	Cont	1	5	150
AM NO BUILD Queue	1	280	325	2	763	450	1	8	25
AM BUILD Queue	1	287	325	2	775	450	1	8	25
Existing Lane Length	1	389	125	2	162	Cont	1	2	150
PM NO BUILD Queue	1	656	650	2	273	200	1	3	0
PM BUILD Queue	1	684	650	2	320	225	1	3	0
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	10	50	3	174	Cont	1	34	300
AM NO BUILD Queue	1	12	25	3	205	125	1	40	75
AM BUILD Queue	1	12	25	3	257	150	1	40	75
Existing Lane Length	1	18	50	3	658	Cont	1	214	300
PM NO BUILD Queue	1	22	50	3	816	350	1	265	300
PM BUILD Queue	1	22	50	3	832	350	1	265	300
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	2	50	1	4	Cont	1	11	75
AM NO BUILD Queue	1	3	0	1	5	25	1	15	50
AM BUILD Queue	1	3	0	1	5	25	1	15	50
Existing Lane Length	1	33	50	1	57	Cont	1	62	75
PM NO BUILD Queue	1	35	75	1	61	100	1	66	100
PM BUILD Queue	1	35	75	1	61	100	1	66	100
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	2	291	600	1	39	Cont	1	440	600
AM NO BUILD Queue	2	334	225	1	45	75	1	505	500
AM BUILD Queue	2	334	225	1	45	75	1	535	525
Existing Lane Length	2	44	600	1	18	Cont	1	266	600
PM NO BUILD Queue	2	56	75	1	23	50	1	340	375
PM BUILD Queue	2	56	75	1	23	50	1	349	375

Cycle Length: AM PM
100 100

NOTE: Queue lengths are in feet.

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

Lane Description	Existing Length (Ft)	NO BUILD Length (Ft)	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	125	650	650	650' plus transition.
Eastbound Right Turn:*	150	10	10	No Recommendation
Westbound Left Turn:	50	50	50	No Recommendation
Westbound Right Turn:*	300	150	150	No Recommendation
Northbound Left Turn:	50	75	75	No Recommendation
Northbound Right Turn:*	75	50	50	No Recommendation
Southbound Left Turn:	600	225	225	No Recommendation
Southbound Right Turn:*	600	250	260	No Recommendation

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

The queuing analysis recommends lengthening the eastbound left turn lane from 125 feet plus transition to 650 feet plus transition. This lengthening cannot be accomplished without adversely affecting the adjacent left turn lane for the driveway to the west of the intersection. Therefore no recommendations are made for the queuing at the intersection of Gibson Blvd. / Louisiana Blvd.

Intersection #2 – Gibson Blvd. / Carlisle Blvd. - Pages A-63 thru A-66

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

Intersection: 2 - GIBSON BLVD. / CARLISLE BLVD.

2020 AM Peak Hour BUILD					2020 PM Peak Hour BUILD				
(EXIST. GEOM.)					(EXIST. GEOM.)				
NO BUILD BUILD					NO BUILD BUILD				
Lanes	LOS-Delay	Lanes	LOS-Delay		Lanes	LOS-Delay	Lanes	LOS-Delay	
EB	L 1 A - 9.4	1 B - 13.4			L 1 E - 66.7	1 F - 170			
	T 3 B - 17.2	3 C - 21.4			T 3 C - 26.1	3 C - 27.9			
	R 1 B - 11.2	1 B - 13.8			R 1 A - 5.1	1 A - 6.5			
WB	L 1 B - 19.8	1 C - 22.7			L 1 C - 20.1	1 C - 23.3			
	T 3 B - 13.0	3 B - 16.7			T 3 D - 38.8	3 E - 72.2			
	R 1 A - 7.2	1 A - 9.6			R 1 B - 19.3	1 C - 22.9			
NB	L 1 C - 32.8	1 C - 33.2			L 1 F - 110	1 F - 228			
	T 2 D - 35.1	2 C - 33.6			T 2 C - 34.0	2 D - 35.6			
	R > D - 35.2	> C - 33.7			R > C - 34.2	> D - 35.8			
SB	L 1 C - 32.2	1 C - 21.7			L 1 D - 49.2	1 D - 47.1			
	T 2 D - 37.2	2 D - 35.8			T 2 D - 52.4	2 D - 50.2			
	R > D - 42.9	> F - 95.7			R > E - 63.3	> F - 156			
Intersection: B - 17.7 C - 24.3					D - 44.6 F - 81.8				

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

The implementation year analysis of the signalized intersection of Gibson Blvd. / Carlisle Blvd. indicates that the levels-of-service will be acceptable for both the AM Peak Hour NO BUILD and BUILD conditions, except for the southbound right turn movement which will experience excessive delays during the AM Peak Hour BUILD condition. The intersection will also experience excessive delays during the PM Peak Hour NO BUILD and BUILD conditions for the eastbound left turn and the northbound left turn, and the southbound right turn movements. This intersection is completely built-out with buildings in close proximity to the roadway at all corners of the intersection. Therefore, no mitigation can be done without acquiring right-of-way and demolishing existing buildings. Therefore, no recommendations are made for the intersection of Gibson Blvd. / Carlisle Blvd.

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

Queueing Analysis Summary Sheet

Project: Sunport ACE Project
 Intersection: Gibson Blvd / Carlisle Blvd

2020

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	78	250	3	1,361	Cont	1	281	550
AM NO BUILD Queue	1	104	150	3	1,809	675	1	373	400
AM BUILD Queue	1	163	200	3	1,874	700	1	374	400
Existing Lane Length	1	127	250	3	972	Cont	1	7	550
PM NO BUILD Queue	1	186	275	3	1,423	675	1	10	50
PM BUILD Queue	1	324	450	3	1,601	750	1	13	50
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	109	325	3	961	Cont	1	43	220
AM NO BUILD Queue	1	115	150	3	1,013	400	1	45	75
AM BUILD Queue	1	115	150	3	1,164	450	1	45	75
Existing Lane Length	1	14	325	3	1,747	Cont	1	121	220
PM NO BUILD Queue	1	15	50	3	1,926	875	1	133	225
PM BUILD Queue	1	15	50	3	2,040	>1,000 *	1	133	225
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	23	200	2	3	Cont	0	3	0
AM NO BUILD Queue	1	62	100	2	8	25	0	8	25
AM BUILD Queue	1	63	100	2	8	25	0	8	25
Existing Lane Length	1	352	200	2	79	Cont	0	48	0
PM NO BUILD Queue	1	569	700	2	128	125	0	78	150
PM BUILD Queue	1	572	700	2	128	125	0	78	150
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	87	175	2	71	Cont	0	97	0
AM NO BUILD Queue	1	135	175	2	110	100	0	150	200
AM BUILD Queue	1	135	175	2	110	100	0	248	275
Existing Lane Length	1	63	175	2	6	Cont	0	91	0
PM NO BUILD Queue	1	67	125	2	6	25	0	97	175
PM BUILD Queue	1	67	125	2	6	25	0	211	300

Cycle Length: AM 100 PM 130

NOTE: Queue lengths are in feet.

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

Lane Description	Existing Length (Ft)	NO BUILD Length (Ft)	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	250	275	450	450' plus transition.
Eastbound Right Turn:*	550	200	200	No Recommendation
Westbound Left Turn:	325	150	150	No Recommendation
Westbound Right Turn:*	220	110	110	No Recommendation
Northbound Left Turn:	200	700	700	700' plus transition.
Northbound Right Turn:*	0	80	80	No Recommendation
Southbound Left Turn:	175	175	175	No Recommendation
Southbound Right Turn:*	0	100	150	No Recommendation

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

The queuing analysis recommends lengthening the eastbound left turn lane from 250 feet plus transition to 450 feet plus transition and lengthening the northbound left turn lane from 200 feet plus transition to 700 feet plus transition. However, this lengthening cannot be accomplished due to the intersection being completely built-out with buildings in close proximity to the roadway at all corners of the intersection, as previously described. Therefore no recommendations are made for the queuing at the intersection of Gibson Blvd. / Carlisle.

Intersection #3 – Gibson Blvd. / Girard Blvd. - Pages A-67 thru A-72

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

Intersection: 3 - GIBSON BLVD. / GIRARD BLVD.

2020 AM Peak Hour BUILD							2020 PM Peak Hour BUILD								
(EXIST. GEOM.)						(MIT. GEOM.)		(EXIST. GEOM.)						(MIT. GEOM.)	
NO BUILD			BUILD			CASE "Y"		NO BUILD			BUILD			CASE "Y"	
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes	LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes	LOS-Delay
EB	L	1	A - 7.4	1	B - 13.0	1	B - 15.1	L	1	C - 33.5	1	E - 77.0	1	D - 49.5	
	T	3	B - 17.8	3	D - 45.0	3	D - 38.2	T	3	B - 14.1	3	C - 34.4	3	C - 30.9	
	R	1	A - 8.1	1	C - 22.0	1	C - 21.2	R	1	A - 8.2	1	B - 10.4	1	B - 10.2	
WB	L	1	C - 24.5	1	F - 96.4	1	E - 74.3	L	1	B - 12.5	1	D - 54.3	1	D - 44.9	
	T	3	A - 6.0	3	A - 8.3	3	B - 13.0	T	3	B - 17.5	3	D - 53.0	3	B - 19.5	
	R	1	A - 4.9	1	A - 6.8	1	A - 7.6	R	1	A - 9.5	1	A - 3.0	1	A - 0.4	
NB	L	1	D - 35.4	1	D - 47.2	2	F - 84.6	L	1	D - 42.4	1	F - 155	2	E - 79.4	
	T	2	D - 36.7	2	D - 38.0	2	D - 49.4	T	2	D - 45.7	2	D - 41.8	2	D - 42.8	
	R	>	D - 45.0	>	F - 95.4	1	D - 39.1	R	>	E - 72.3	>	E - 76.1	1	D - 49.7	
SB	L	1	C - 34.4	1	E - 56.2	1	D - 48.4	L	1	D - 43.9	1	D - 45.8	1	D - 44.5	
	T	1	C - 34.1	1	D - 38.4	1	D - 54.6	T	1	D - 42.2	1	D - 50.9	1	E - 55.4	
	R	1	C - 30.7	1	C - 33.0	1	D - 48.0	R	1	D - 41.3	1	D - 46.6	1	D - 50.7	
Intersection:		B - 15.8		D - 39.1		D - 35.2		B - 19.7		E - 55.6		C - 32.8			

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

Mitigated northbound geometry actually consists of dual left turn lanes, one thru lane, one shared thru/right turn lane, and one right turn lane.

The implementation year analysis of the signalized intersection of Gibson Blvd. / Girard Blvd. indicates that that some of the delays will be excessive for both the AM Peak Hour and PM Peak Hour NO BUILD conditions and will experience excessive delays for the westbound left turn and northbound right turn movements during the AM Peak Hour BUILD condition. The intersection will also experience excessive delays for the PM Peak Hour BUILD condition for the eastbound left turn and the northbound left and right turn movements. The intersection may be mitigated by constructing northbound dual left turn lanes, one thru lane, one shared thru/right turn lane, and one exclusive right turn lane. This will require acquiring right-of-way north of Gibson Blvd. in order to widen the median and align the northbound thru lanes through the intersection. Synchro 8 Software will not analyze a signalized intersection with a shared thru/turn lane, so this mitigated analysis was performed using the northbound geometry shown in the table, dual left turn lanes, two thru lanes and one exclusive right turn lane, but is closely representative of the proposed mitigated geometry described previously. TEAPAC was also used to analyze this intersection with the existing geometry with the shared thru/right turn lane and is included in the Appendix on Pages A-114 thru A-116. The results do not significantly differ from the Synchro 8 results.

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

Queueing Analysis Summary Sheet

Project: Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)
 Intersection: Gibson Blvd / Girard Blvd

2020

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	65	200	3	1,697	Cont	1	16	200
AM NO BUILD Queue	1	78	150	3	2,031	>1,000	1	19	50
AM BUILD Queue	1	78	150	3	2,079	>1,000	1	466	600
Existing Lane Length	1	93	200	3	1,282	Cont	1	7	200
PM NO BUILD Queue	1	111	200	3	1,523	725	1	8	25
PM BUILD Queue	1	111	200	3	1,608	750	1	203	300
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	122	340	3	904	Cont	1	42	120
AM NO BUILD Queue	1	141	225	3	1,048	525	1	49	100
AM BUILD Queue	1	284	400	3	1,048	525	1	49	100
Existing Lane Length	1	128	340	3	1,980	Cont	1	119	120
PM NO BUILD Queue	1	152	250	3	2,344	>1,000	1	141	225
PM BUILD Queue	1	195	300	3	2,344	>1,000	1	141	225
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	2	8	150	2	9	Cont	1	72	325
AM NO BUILD Queue	2	11	25	2	12	25	1	97	175
AM BUILD Queue	2	183	175	2	85	100	1	155	250
Existing Lane Length	2	12	150	2	37	Cont	1	111	325
PM NO BUILD Queue	2	16	25	2	50	75	1	150	225
PM BUILD Queue	2	544	400	2	213	200	1	329	450
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	68	100	1	34	Cont	1	61	350
AM NO BUILD Queue	1	73	150	1	36	75	1	65	125
AM BUILD Queue	1	112	200	1	103	175	1	65	125
Existing Lane Length	1	61	100	1	30	Cont	1	103	350
PM NO BUILD Queue	1	71	125	1	35	75	1	120	200
PM BUILD Queue	1	139	225	1	113	200	1	120	200

Cycle Length: AM
130 PM
130

NOTE: Queue lengths are in feet.

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

Lane Description	Existing Length (Ft)	NO BUILD Length (Ft)	BUILD Length (Ft)	Lengthen Existing Auxiliary Lane to:
Eastbound Left Turn:	200	200	200	No Recommendation
Eastbound Right Turn:*	200	30	300	300' plus transition.
Westbound Left Turn:	340	250	400	400' plus transition.
Westbound Right Turn:*	120	110	110	No Recommendation
Northbound Left Turn:	150	25	400	400' plus transition.
Northbound Right Turn:*	325	110	230	No Recommendation
Southbound Left Turn:	100	150	225	225' plus transition.
Southbound Right Turn:*	350	100	100	No Recommendation

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

The queuing analysis recommends lengthening the eastbound right turn lane from 200 feet plus transition to 300 feet plus transition, lengthening the westbound left turn lane from 340 feet plus transition to 400 feet plus transition, and lengthening the southbound left turn lane from 100 feet plus transition to 225 feet plus transition. The lengthening of the eastbound right turn lane can be accomplished by restriping to take some of the length and width of the existing bike lane to use for the right turn lane. The westbound left turn lane may also be lengthened as recommended. This will require relocation of a street light pole, an electric pull box, meters, and possibly some landscape irrigation lines. The lengthening of the southbound left turn lane cannot be done without adversely affecting the driveway to the north. The queuing analysis also demonstrates that the dual left turn lanes of the mitigated northbound geometry should be 400 feet plus transition and the exclusive right turn lane should be 225 feet plus transition.

RESULTS OF UNSIGNALIZED INTERSECTION CAPACITY ANALYSES

Intersection #4 - Gibson Blvd. / I-25 W. Ramp - Pages A-73 thru A-80

The results of the analysis of the unsignalized intersection of Gibson Blvd. / I-25 W. Ramp are summarized in the following table:

Intersection: 4 - GIBSON BLVD. / I-25 W. RAMP

2020 AM Peak Hour BUILD					2020 PM Peak Hour BUILD				
(EXIST. GEOM.)					(EXIST. GEOM.)				
NO BUILD		BUILD			NO BUILD		BUILD		
Lanes	LOS-Delay	Lanes	LOS-Delay		Lanes	LOS-Delay	Lanes	LOS-Delay	
WB L	1 C - 20.5	1	C - 22.9	L	1	D - 34.9	1	F - 61.2	
Intersection: u - N/A		u - N/A			u - N/A		u - N/A		

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

The implementation year analysis of the intersection of Gibson Blvd. / I-25 W. Ramp indicates that the levels-of-service of the westbound left turn movement will be acceptable for both the AM Peak Hour NO BUILD and BUILD conditions and for the PM Peak Hour NO BUILD condition and will experience excessive delays for the PM Peak HOUR BUILD condition. There is no way to mitigate the intersection without rebuilding the entire interchange due to the placement of the abutments of the I-25 Bridge. Therefore, no recommendation is made for the intersection of Gibson Blvd. / I-25 W. Ramp.

Intersection #5 - Gibson Blvd. / Driveway "A" - Pages A-81 thru A-82

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

Intersection: 5 - GIBSON BLVD. / DRIVEWAY "A"

2020 Peak Hour BUILD				
(EXIST. GEOM.)				
AM BUILD		PM BUILD		
Lanes	LOS-Delay	Lanes	LOS-Delay	
NB WB L	1 B - 14.5	1	B - 14.0	
R	1 C - 16.3	1	C - 15.9	
Intersection: u - N/A		u - N/A		

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

This access is proposed to be a right-in, right-out, left-in only intersection which will serve primarily the northern commercial portion of the proposed development. The HCM 2010 implementation year analysis of Driveway "A" based on Synchro 8 indicates that the levels-of-service will be acceptable for both the AM Peak Hour and PM

Peak Hour Build conditions. Also, it will be demonstrated that the intersection of Gibson Blvd. / Girard Blvd. will be improved by implementation of Driveway "A" on Gibson Blvd. The westbound left turn lane on Gibson Blvd. at Driveway "A" will serve as a virtual second left turn lane to assist the one that exists on Gibson Blvd. at Girard Blvd. See the companion report, Sunport ACE Project Access Justification Study dated April 2014 for further details. The design of Driveway "A" should incorporate one exiting lane and two entering lanes so that the left and right turns in will not conflict with one another. Also, see Page 24a for a diagram of the recommended geometry for Driveway "A".

The City of Albuquerque's Development Process Manual requires deceleration lanes for driveways generating 60 or more left or right turns. Therefore, Driveway "A" warrants an eastbound right turn deceleration lane as well as a westbound left turn deceleration lane along Gibson Blvd. Both the eastbound right turn deceleration lane and the westbound left turn deceleration lane should be 400 feet long plus 12.5:1 taper per Table 18.K-1 of the State Access Management Manual.

Intersection #6 - Gibson Blvd. / I-25 E. Ramp - Pages A-83 thru A-90

The results of the analysis of the unsignalized intersection of Gibson Blvd. / I-25 E. Ramp are summarized in the following table:

Intersection: 6 - GIBSON BLVD. / I-25 E RAMP

<u>2020 AM Peak Hour BUILD</u>				<u>2020 PM Peak Hour BUILD</u>			
(EXIST. GEOM.)				(EXIST. GEOM.)			
NO BUILD		BUILD		NO BUILD		BUILD	
Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
NB L	1 F - 1683	1 F - 1908		NB L	1 F - 52.8	1 F - 56.9	
Intersection:	u - N/A	u - N/A		Intersection:	u - N/A	u - N/A	

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

The implementation year analysis of the intersection of Gibson Blvd. / I-25 E. Ramp indicates that the northbound left turn movement will experience excessive delays for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions. There is no way to mitigate the already failing condition at the intersection without rebuilding the interchange. Due to the fact that this is a NO BUILD failing situation and based on the type of intersection, this is more likely a regional issue than one caused by any one development in the area. Therefore, this study concludes that there are no recommendations at the intersection of Gibson Blvd. / I-25 E. Ramp.

Intersection #7 – Miles Rd. (Driveway "B") / Girard Blvd. - Pages A-91 thru A-96

The results of the analysis of the unsignalized intersection of Miles Rd. (Driveway "B") / Girard Blvd. are summarized in the following table:

Standard Two-Way Stop Intersection Option

Intersection: 7 - MILES RD. / GIRARD BLVD.

2020 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	E - 46.6	>	F - 192
	T	1	E - 46.6	1	F - 192
	R	>	E - 46.6	>	F - 192
WB	L	>	E - 38.1	>	E - 38.7
	T	1	E - 38.1	1	E - 38.7
	R	1	A - 0.0	1	A - 0.0
NB	L	>	A - 9.0	>	A - 8.0
	T	1	A - 0.0	1	A - 8.0
	R	>	A - 0.0	>	A - 8.0
SB	L	1	A - 8.4	1	A - 9.6
	T	1	A - 0.0	1	A - 0.0
	R	>	A - 0.0	>	A - 0.0
Intersection:		u - 6.0		u - 23.9	

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

Roundabout Option

Intersection: 7 - MILES RD. / GIRARD BLVD.

2020 Peak Hour BUILD

		(MITIGATED GEOMETRY)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	B - 10.9	>	A - 9.1
	T	1	B - 10.9	1	A - 9.1
	R	>	B - 10.9	>	A - 9.1
WB	L	>	A - 4.6	>	A - 8.9
	T	1	A - 4.6	1	A - 8.9
	R	1	A - 0.0	1	A - 0.0
NB	L	>	A - 7.9	>	C - 20.3
	T	1	A - 7.9	1	C - 20.3
	R	>	A - 7.9	>	C - 20.3
SB	L	>	C - 22.4	>	B - 12.1
	T	1	C - 22.4	1	B - 12.1
	R	1	A - 4.4	1	A - 3.6
Intersection:		u - 14.7		u - 10.2	

This access will be the extension of an existing tee intersection of Miles Rd. / Girard Blvd. The implementation year analysis of the intersection of Miles Rd. / Girard Blvd. (proposed Driveway "B") indicates that that the intersection will experience excessive delays for the eastbound and westbound movements as a four-legged two-way stop controlled intersection for both the AM Peak Hour and PM Peak Hour BUILD conditions. The intersection may be mitigated as a roundabout with a westbound free right turn and an exclusive southbound right turn lane. Both scenarios are acceptable. No recommendation is made for either option. If the developer opts for the Standard Two-Way Stop Intersection Option, then the intersection should include a southbound right turn lane and a westbound right turn (free right) lane with an add lane.

If the roundabout option is implemented, then the northbound and eastbound approach may be single lane approaches, but the westbound and southbound approaches should include a right turn lane. In the case of the westbound right turn lane, it should be a free right turn with an add lane.

Intersection #8 - Driveway "C" / Girard Blvd. - Pages A-97 thru A-98

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

Intersection: 8 - DRIVEWAY "C" / GIRARD BLVD.

2020 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
WB	L	1	A - 9.9	>	B - 11.6
	R	>	A - 9.9	>	B - 11.6
SB	L	>	A - 8.1	>	A - 8.0
	T	1	A - 8.1	1	A - 8.0
Intersection:		u - N/A		u - N/A	

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

This access is proposed to be a full access tee intersection. The implementation year analysis of Driveway "C" indicates that the levels-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour BUILD conditions. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Driveway "C" / Girard Blvd.

Intersection #9 - Driveway "D" / Girard Blvd. - Pages A-99 thru A-100

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

Intersection: 9 - DRIVEWAY "D" / GIRARD BLVD.

2020 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
WB	L	1	A - 9.0	>	A - 9.8
	R	>	A - 9.0	1	A - 9.8
SB	L	>	A - 7.7	>	A - 7.6
	T	1	A - 7.7	1	A - 7.6
Intersection:		u - N/A		u - N/A	

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

This access is proposed to be a full access tee intersection. The implementation year analysis of Driveway "D" indicates that the levels-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour BUILD conditions. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Driveway "D" / Girard Blvd.

Intersection #10 - Driveway "E" / Girard Blvd. - Pages A-101 thru A-102

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

Intersection: 10 - DRIVEWAY "E" / GIRARD BLVD.

2020 Peak Hour BUILD

		(EXIST. GEOM.)			
		AM BUILD		PM BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay
WB	L	1	A - 8.8	>	A - 9.0
	R	>	A - 8.8	>	A - 9.0
SB	L	>	A - 7.5	>	A - 7.4
	T	1	A - 7.5	1	A - 7.4
Intersection:		u - N/A		u - N/A	

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

This access is proposed to be a full access tee intersection. The implementation year analysis of Driveway "E" indicates that the levels-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour BUILD conditions. Therefore, this study concludes that the development presents no significant impact to the calculated delays at the intersection of Driveway "E" / Girard Blvd.

It should be noted that Levels of Service (LOS) for unsignalized intersections cannot be compared directly with Levels of Service for signalized intersections. There are different level-of-service thresholds for signalized and unsignalized intersections. Following are two tables that define the differentiation between the two.

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.

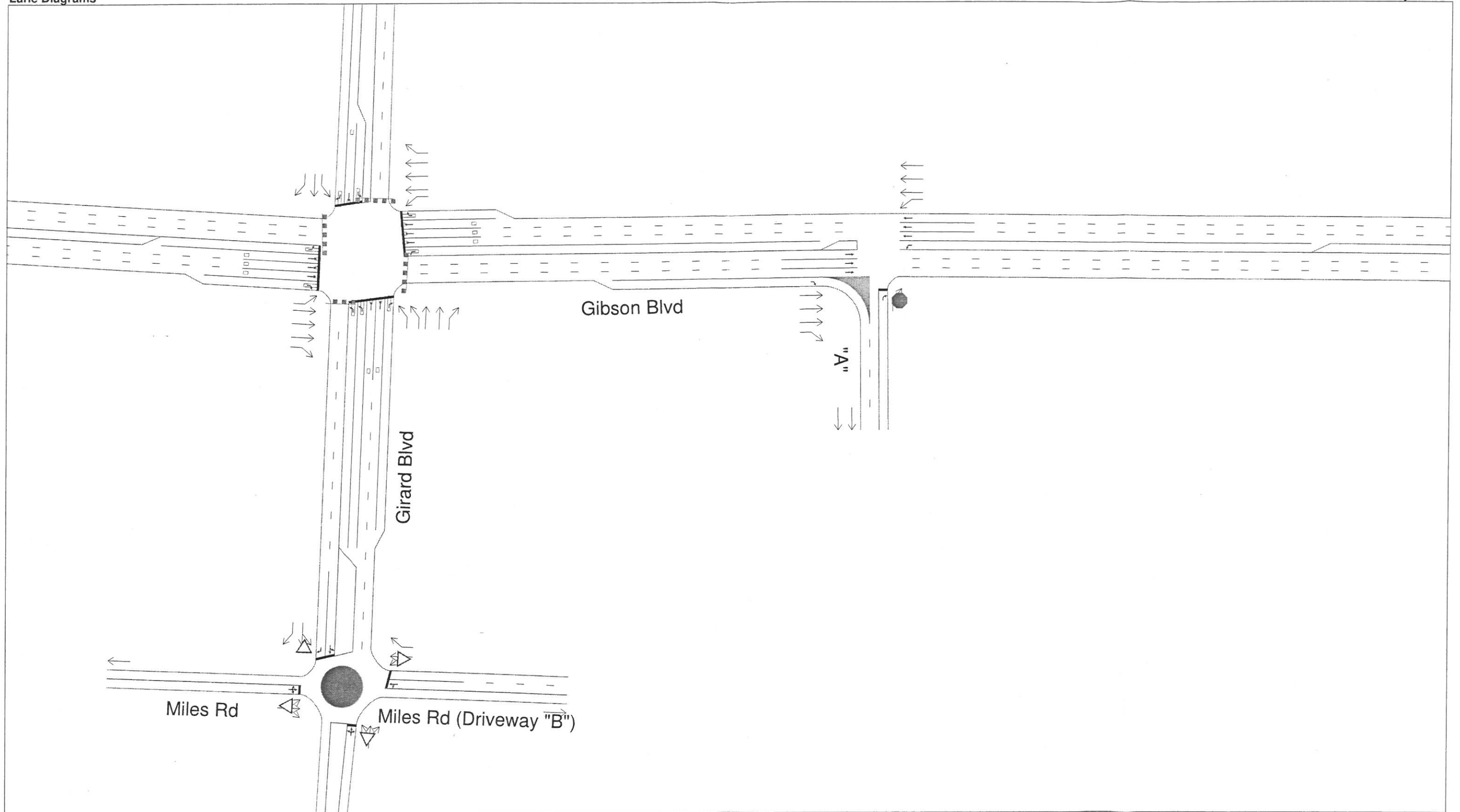
CONCLUSIONS

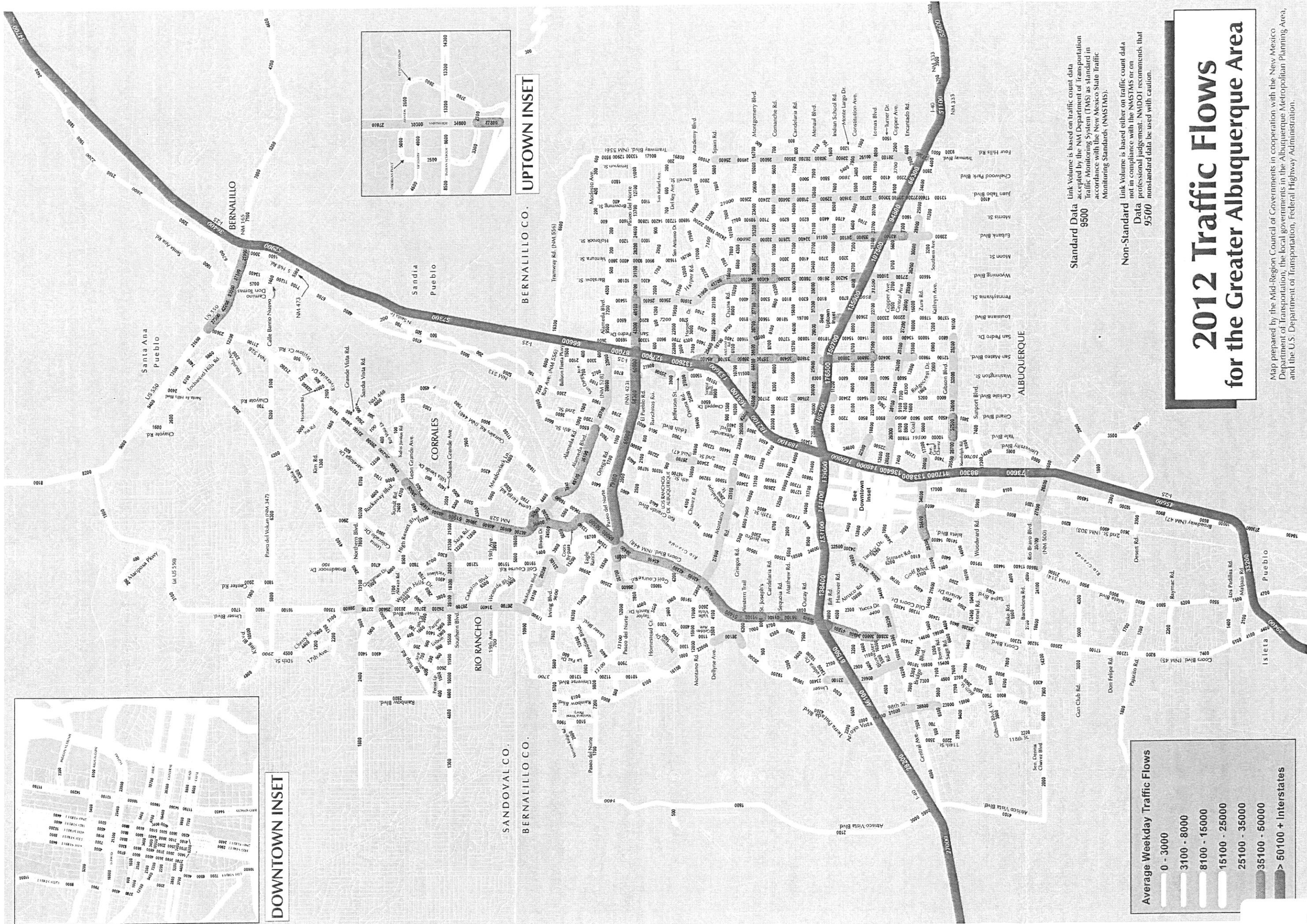
The results of the analyses of this study demonstrate that the implementation of the Sunport ACE Project as shown on Appendix Page A-2 will have some adverse impact on the adjacent transportation system for the 2020 Implementation Year, specifically near the proposed project site that need to be mitigated as well as regional issues that should be explored and mitigated by a governmental agency. Utilizing projected traffic volumes resulting from the development of this site into a facility such as the one shown on Appendix Page A-2 in conjunction with projected 2020 traffic volumes in this report concludes that impact to the adjacent transportation system can be mitigated, provided that the following recommendations are followed:

RECOMMENDATIONS

- Design of the project should maintain adequate sight distances for traffic approaching, entering, and exiting the site from the proposed driveways.
- All driveways should be constructed utilizing 30 feet minimum radius curb returns or larger if needed to accommodate delivery trucks and buses. The new development should be implemented utilizing one access point on Gibson Blvd. (See companion report, Sunport ACE Project Access Justification Study dated April 2014 for further details) and four access points on Girard Blvd.
 - Driveway "A" (on Gibson Blvd. approximately 685 feet [centerline-to-centerline] east of the Gibson Blvd. / Girard Blvd. intersection) should be constructed as a right-in, right-out, left-in only intersection with two entering lanes and one exiting lane. An eastbound right turn deceleration lane and a westbound left turn deceleration lane are warranted on Gibson Blvd. at Driveway "A". Each should be designed and constructed as described on Pages 18 and 19 of this report. Also, the eastbound right turn movement should be designed with a right turn channelized ramp (approximately 75 feet radius) with an add lane to avoid conflict with entering traffic from the westbound left turn movement.
 - Miles Rd. / Girard Blvd. (Driveway "B") (on Girard Blvd. approximately 690 feet [centerline-to-centerline] south of the Gibson Blvd. / Girard Blvd. intersection) should be constructed either as a roundabout or a standard two-way stop controlled intersection to include one free westbound right turn lane and to comply with the recommendations on Page 20 of this report.
 - Driveway "C" (on Girard Blvd. approximately 1,285 feet [centerline-to-centerline] south of the Gibson Blvd. / Girard Blvd. intersection) should be constructed as a full access tee intersection with one entering lane and one exiting lane.
 - Driveway "D" (on Girard Blvd. approximately 2,500 feet [centerline-to-centerline] south of the Gibson Blvd. / Girard Blvd. intersection) should be constructed as a full access tee intersection with one entering lane and one exiting lane.

- Driveway "E" (on Girard Blvd. approximately 3,500 feet [centerline-to-centerline] south of the Gibson Blvd. / Girard Blvd. intersection) should be constructed as a full access tee intersection with one entering lane and one exiting lane.
- **Gibson Blvd. / Girard Blvd.** - Construct northbound dual left turn lanes (400 feet plus transition), one thru lane, one shared thru/right turn lane, and one exclusive right turn lane (225 feet plus transition). (This may require acquiring right-of-way north of Gibson Blvd. in order to widen the median and align the northbound thru lanes through the intersection.) Lengthen the eastbound right turn lane from 200 feet plus transition to 300 feet plus transition (This will require restriping to take some of the length and width of the existing bike lane) and the westbound left turn lane from 340 feet plus transition to 400 feet plus transition (This will require relocation of a street light pole, an electric pull box, meters, and possibly some landscape irrigation lines.) It may be necessary to reduce the number of southbound lanes on Girard Blvd. south of Gibson Blvd. to accommodate the northbound recommended geometry. This may be necessary, but is not highly recommended.





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.

ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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					
Tract "A"		Gasoline / Service Station w/ Convenience Market (945)	20.00	3,256	102	102	135	135
Tract "A"		Shopping Center (820)	68.00	5,285	76	47	222	241
Tract "A"		Variety Store (814)	20.00	1,281	38	38	68	68
Tract "A"		High Turnover (Sit-Down) Restaurant (932)	10.00	1,272	59	49	59	39
Tract "B"		Manufacturing (140)	218.00	867	118	33	55	99
Tract "C"		General Office Building (710)	39.30	646	80	11	21	102
Tract "C"		Warehousing (150)	91.70	458	62	17	14	42
Tract "D"		Warehousing (150)	330.00	1,376	126	33	32	96
Tract "E"		Warehousing (150)	330.00	1,376	126	33	32	96
Tract "E"		General Office Building (710)	33.00	565	69	9	20	96
Subtotal				16,382	856	372	658	1,014

ACE Support Project (Gibson Blvd. / Hickam Ave.) 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						
20						
3,256						
102						
102						
135						
135						

Gasoline / Service Station w/ Convenience Market (945)

ITE Trip Generation Equations:

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

$$T = \frac{162.78 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{10.16 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{13.51 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Comments:
Tract "A"

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
Shopping Center (820)					
	5,285	76	47	222	241

Units

68.00

1,000 S.F.

ITE Trip Generation Equations:

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

$$\text{Ln(T)} = 0.65 \text{ Ln(X)} + 5.83$$

50% Enter, 50% Exit

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

$$\text{Ln(T)} = 0.61 \text{ Ln(X)} + 2.24$$

62% Enter, 38% Exit

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

$$\text{Ln(T)} = 0.67 \text{ Ln(X)} + 3.31$$

48% Enter, 52% Exit

Comments:

Tract "A"

9 Acres at 0.25 FAR = 2.25 Acres (98,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
Variety Store (814)	1,281	38	38	68	68	68
Units						
20.00						
1,000 S.F.						

ITE Trip Generation Equations:

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

$$T = 64.03 (X) + 0$$

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)

$$T = 3.81 (X) + 0$$

50% Enter, 50% Exit

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

$$T = 6.82 (X) + 0$$

50% Enter, 50% Exit

Comments:

Tract "A"

9 Acres at 0.25 FAR = 2.25 Acres (98,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
High Turnover (Sit-Down) Restaurant (932)	1,272	59	49	59	39
Units					
10.00					
1,000 S.F.					

ITE Trip Generation Equations:

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

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

50% Enter, 50% Exit

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

$$T = 10.81 (X) + 0$$

55% Enter, 45% Exit

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

$$T = 9.85 (X) + 0$$

60% Enter, 40% Exit

Comments:

Tract "A"

9 Acres at 0.25 FAR = 2.25 Acres (98,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
Manufacturing (140)	867	118	33	55	99
Units					
218.00					
1,000 S.F.					

ITE Trip Generation Equations:

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

$$T = \frac{3.88 (X) + 20.7}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{0.83 (X) + -29.52}{78\% \text{ Enter, } 22\% \text{ Exit}}$$

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

$$T = \frac{0.78 (X) + -15.97}{36\% \text{ Enter, } 64\% \text{ Exit}}$$

Comments:

Tract "B"

20 Acres at 0.25 FAR - 5 Acres (218,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

ACE Sunport Project (Gibson Blvd. / Hickam Ave.) 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	EXIT
General Office Building (710)						
	646	80	11	21	21	102
Units						
	39.30					
1,000 S.F.						

ITE Trip Generation Equations:

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

$$\ln(T) = 0.76 \ln(X) + 3.68$$

50% Enter, 50% Exit

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

$$\ln(T) = 0.8 \ln(X) + 1.57$$

88% Enter, 12% Exit

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

$$T = 1.12 (X) + 78.45$$

17% Enter, 83% Exit

Comments:

Tract "C"

10 Acres @ 0.3 FAR = 3 Acres (131,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
Warehousing (150)	458	62	17	14	42
Units					
91.70					
1,000 S.F.					

ITE Trip Generation Equations:

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

$$\ln(T) = 0.86 \ln(X) + 2.24$$

50% Enter, 50% Exit

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

$$\ln(T) = 0.55 \ln(X) + 1.88$$

79% Enter, 21% Exit

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

$$\ln(T) = 0.64 \ln(X) + 1.14$$

25% Enter, 75% Exit

Comments:

Tract "C"

10 Acres @ 0.3 FAR = 3 Acres (131,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
Warehousing (150)	1,376	126	33	32	96	
Units						
330.00						
1,000 S.F.						

ITE Trip Generation Equations:

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

$$\ln(T) = 0.86 \ln(X) + 2.24$$

50% Enter, 50% Exit

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

$$\ln(T) = 0.55 \ln(X) + 1.88$$

79% Enter, 21% Exit

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

$$\ln(T) = 0.64 \ln(X) + 1.14$$

25% Enter, 75% Exit

Comments:

Tract "D"

15 Acres @ 0.5 FAR = 7.5 Acres (330,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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	EXIT
Warehousing (150)	1,376	126	33	32	96	
Units						
330.00						
1,000 S.F.						

ITE Trip Generation Equations:

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

$$\ln(T) = 0.86 \ln(X) + 2.24$$

50% Enter, 50% Exit

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

$$\ln(T) = 0.55 \ln(X) + 1.88$$

79% Enter, 21% Exit

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

$$\ln(T) = 0.64 \ln(X) + 1.14$$

25% Enter, 75% Exit

Comments:

Tract "E"

15 Acres @ 0.5 FAR = 7.5 Acres (330,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition

*ACE Sunport Project (Gibson Blvd. / Hickam Ave.)
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
General Office Building (710)	565	69	9	20	96

Units

33.00

1,000 S.F.

ITE Trip Generation Equations:

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

$$\text{Ln}(T) = 0.76 \text{ Ln}(X) + 3.68$$

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)

$$\text{Ln}(T) = 0.8 \text{ Ln}(X) + 1.57$$

88% Enter, 12% Exit

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

$$T = 1.12 (X) + 78.45$$

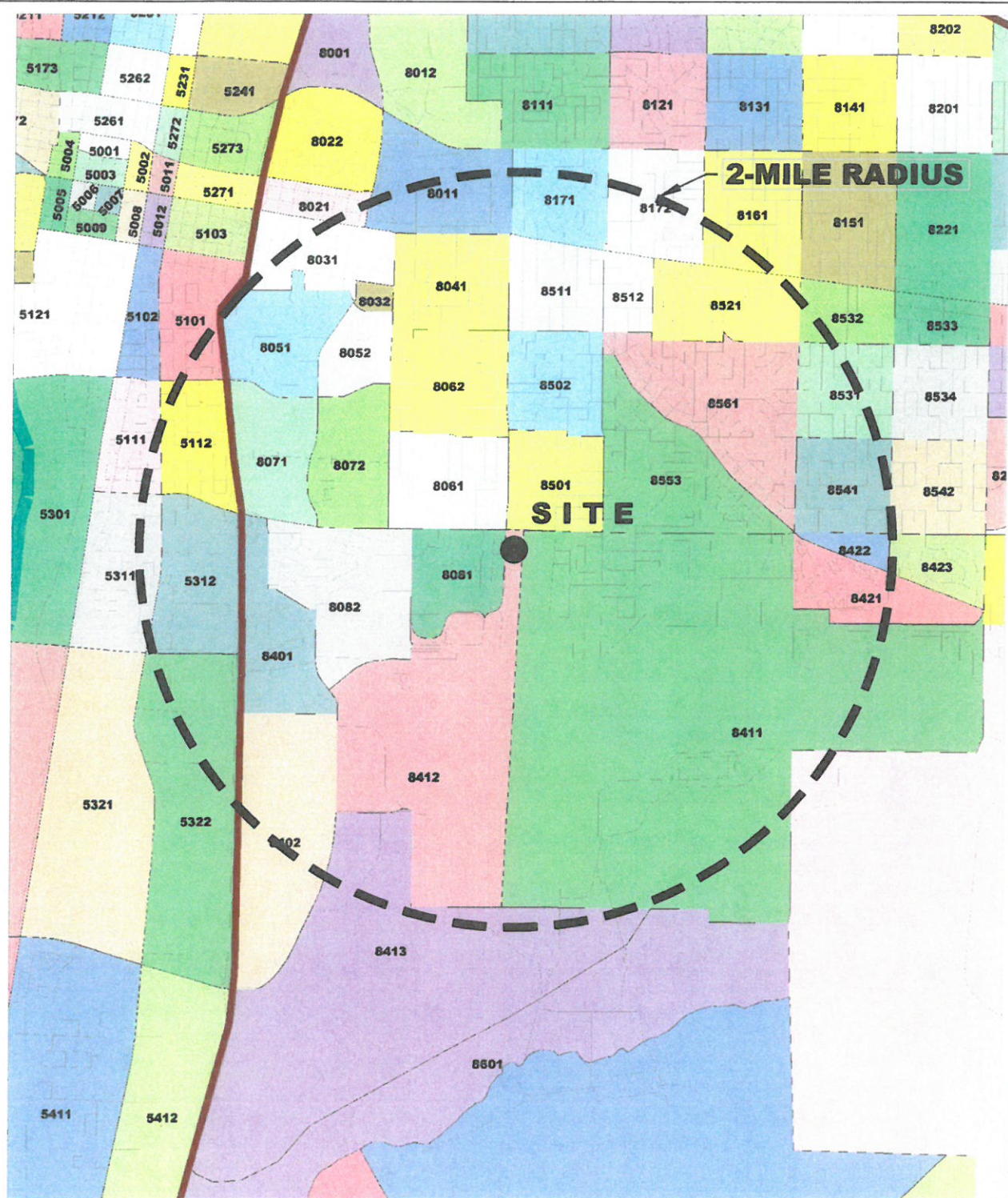
17% Enter, 83% Exit

Comments:

Tract "E"

3 Acres @ 0.25 FAR = 0.75 Acres (33,000 S.F.)

Based on ITE Trip Generation Manual - 9th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP
Sunport ACE (S. of Gibson between Columbia Dr & Hickam Ave)

Trip Distribution Table
Support ACE Project (S. of Gibson between Columbia Dr & Hickam Ave)
 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		Interpolated Population for the Year 2020	Population in Study	Percent Population	(GC2)			(GN)			(CN)			
		2015	2025				% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	
Boundary Specified on DASZ Map																
8041	50%	2724	2665	2,695	1,348	7.29%	50%	3.65%	674	50%	3.65%	674	0%	0.00%	0	
8052	85%	462	447	455	387	2.09%	100%	2.09%	387	0%	0.00%	0	0%	0.00%	0	
8061	100%	1188	1265	1,227	1,227	6.64%	25%	1.66%	307	75%	4.98%	920	0%	0.00%	0	
8062	100%	2681	2594	2,638	2,638	14.27%	50%	7.14%	1,319	50%	7.14%	1,319	0%	0.00%	0	
8071	55%	773	2580	1,677	922	4.99%	100%	4.99%	922	0%	0.00%	0	0%	0.00%	0	
8072	100%	1227	1397	1,312	1,312	7.10%	100%	7.10%	1,312	0%	0.00%	0	0%	0.00%	0	
8081	100%	39	38	39	39	0.21%	25%	0.05%	10	0%	0.00%	0	0%	0.00%	0	
8082	100%	1095	1055	1,075	1,075	5.82%	100%	5.82%	1,075	0%	0.00%	0	0%	0.00%	0	
8401	70%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8411	50%	501	496	499	250	1.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8412	70%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8501	100%	1847	1951	1,899	1,899	10.27%	0%	0.00%	0	75%	7.71%	1,424	25%	2.57%	475	
8502	100%	1186	1149	1,168	1,168	6.32%	0%	0.00%	0	50%	3.16%	584	50%	3.16%	584	
8511	60%	1184	1164	1,174	704	3.81%	0%	0.00%	0	50%	1.90%	352	50%	1.90%	352	
8512	40%	395	371	383	153	0.83%	0%	0.00%	0	0%	0.00%	0	100%	0.83%	153	
8421	5%	20	26	23	1	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8422	100%	484	593	539	539	2.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8521	60%	1287	1505	1,396	838	4.53%	0%	0.00%	0	0%	0.00%	0	50%	2.27%	419	
8541	5%	2952	2959	2,956	148	0.80%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8553	100%	2277	2269	2,273	2,273	12.30%	0%	0.00%	0	0%	0.00%	0	50%	6.15%	1,137	
8561	60%	2624	2579	2,602	1,561	8.45%	0%	0.00%	0	0%	0.00%	0	50%	4.22%	781	
					26,030	18,482	100.00%							5,274	28.53%	3,900
															32.49%	21,10%

Trip Distribution Table
Sunport ACE Project (S. of Gibson between Columbia Dr & Hickam Ave)
 Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

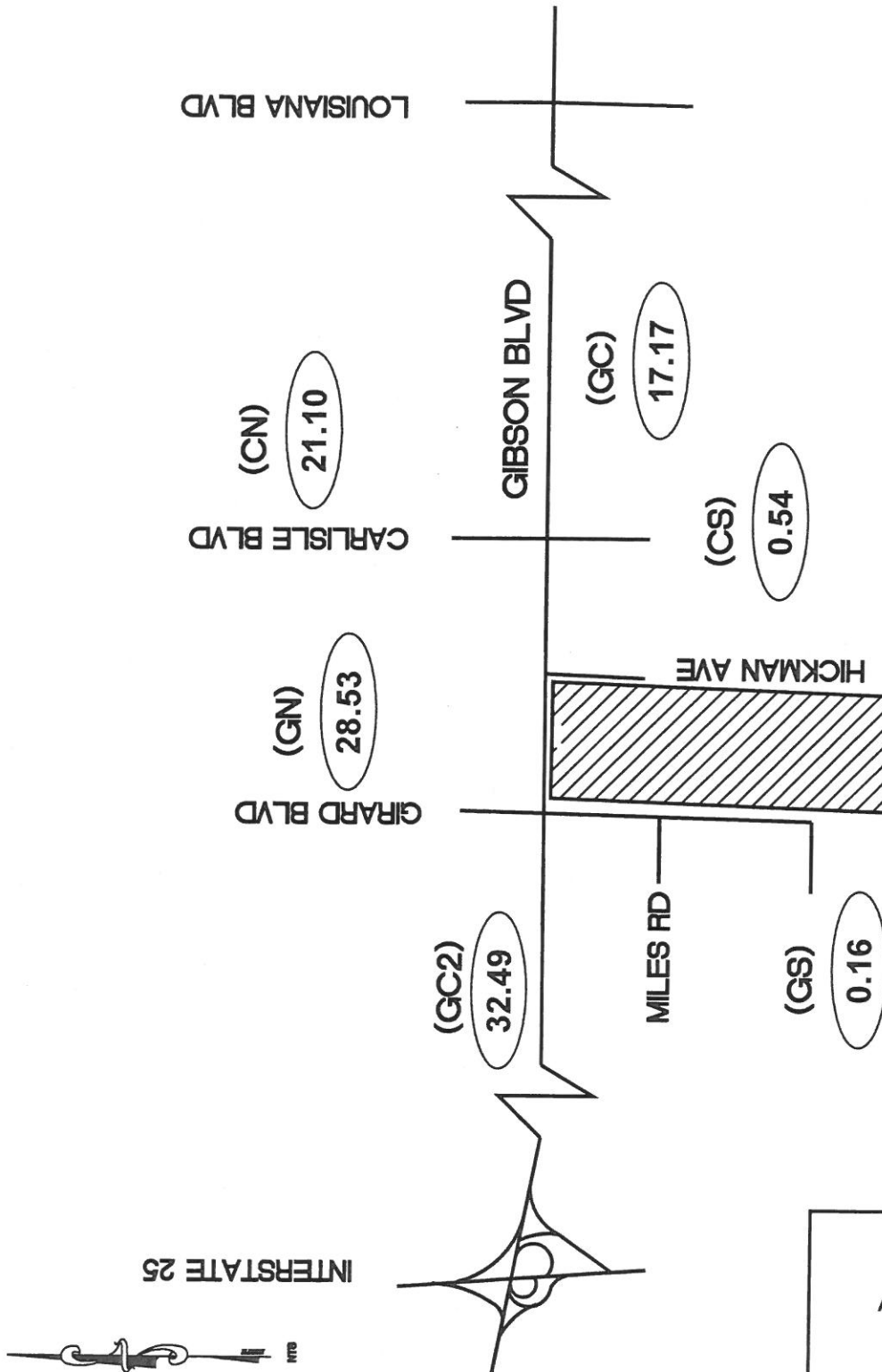
2015 and 2025 Data Taken from Mid-Region Council of Governments'
 2035 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2015 Population		2025 Population	Interpolated Population for the Year 2020	Population in Study	Percent Population	(CS)			(GS)			(GC)		
		2015	2025					% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map																
8041	50%	2724	2665	2695	1,348	7.29%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8052	85%	462	447	455	387	2.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8061	100%	1188	1265	1227	1,227	6.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8062	100%	2681	2594	2,638	2,638	14.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8071	55%	773	2580	1,677	922	4.99%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8072	100%	1227	1397	1,312	1,312	7.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8081	100%	39	38	39	39	0.21%	0%	0.00%	0	75%	0.16%	29	0%	0.00%	0	
8082	100%	1095	1055	1,075	1,075	5.82%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8401	70%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8411	50%	501	496	499	250	1.35%	40%	0.54%	100	0%	0.00%	0	60%	0.81%	150	
8412	70%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8501	100%	1847	1951	1,899	1,899	10.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8502	100%	1186	1149	1,168	1,168	6.32%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8511	60%	1184	1164	1,174	704	3.81%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8512	40%	395	371	383	153	0.83%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8421	5%	20	26	23	1	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8422	100%	484	593	539	539	2.92%	0%	0.00%	0	0%	0.00%	0	100%	0.01%	1	
8521	60%	1287	1505	1,396	838	4.53%	0%	0.00%	0	0%	0.00%	0	100%	2.92%	539	
8541	5%	2952	2959	2,956	148	0.80%	0%	0.00%	0	0%	0.00%	0	50%	2.27%	419	
8553	100%	2277	2269	2,273	2,273	12.30%	0%	0.00%	0	0%	0.00%	0	100%	0.80%	148	
8561	60%	2624	2579	2,602	1,561	8.45%	0%	0.00%	0	0%	0.00%	0	50%	6.15%	1,137	
							100	0.54%	29	0%	0.00%	0	50%	4.22%	781	
							26,030	100.00%	0.16%	29	0%	0.00%	0	50%	4.22%	781
															3,174	
															17.17%	

Sunport ACE Project

(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Distribution Map (%) - Commercial



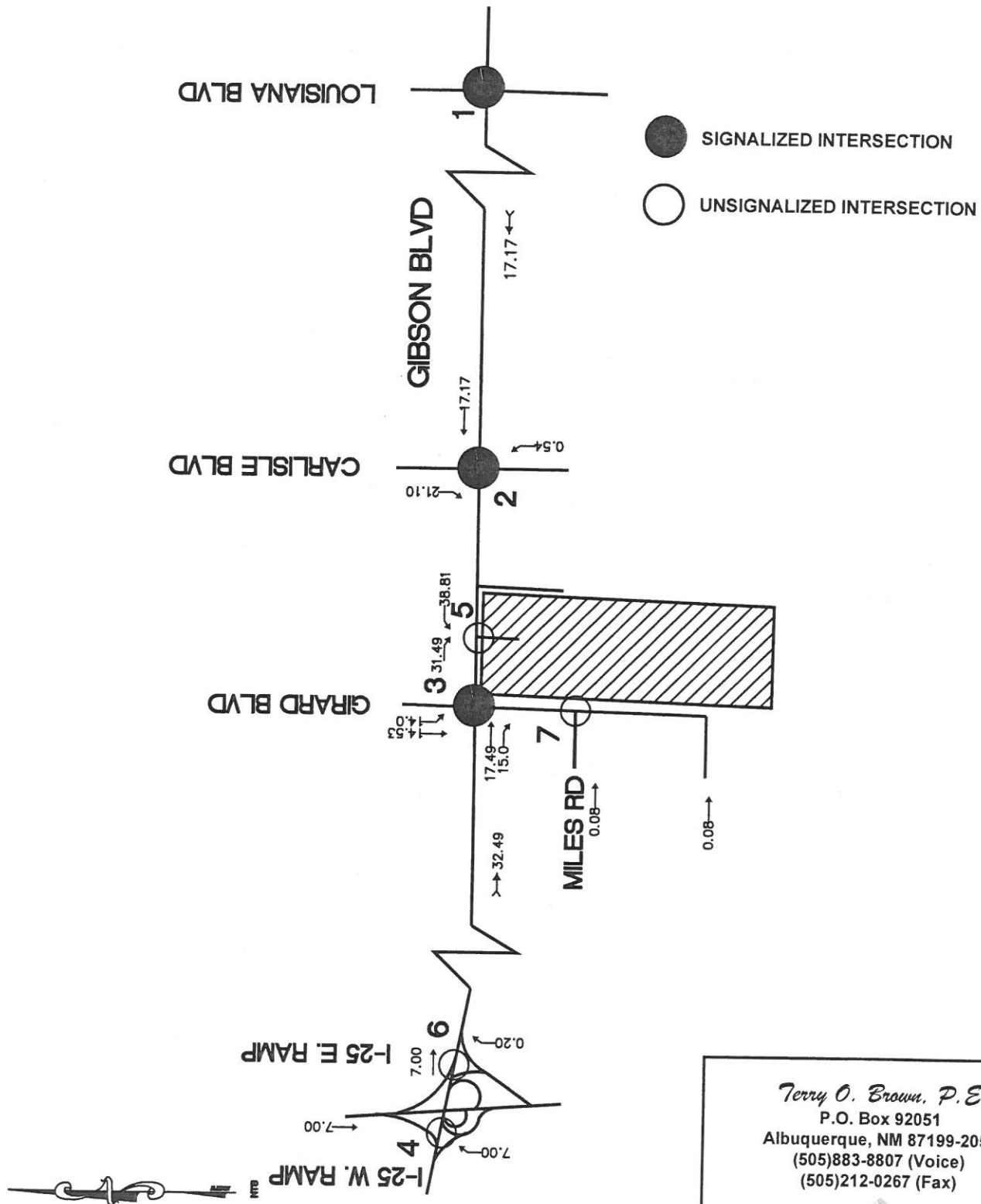
Terry O. Brown, P.E.
P.O. Box 92051
Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)

Sunport ACE Project

(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Assignments (% Entering) - Commercial

Case "Y" - Drive on Gibson

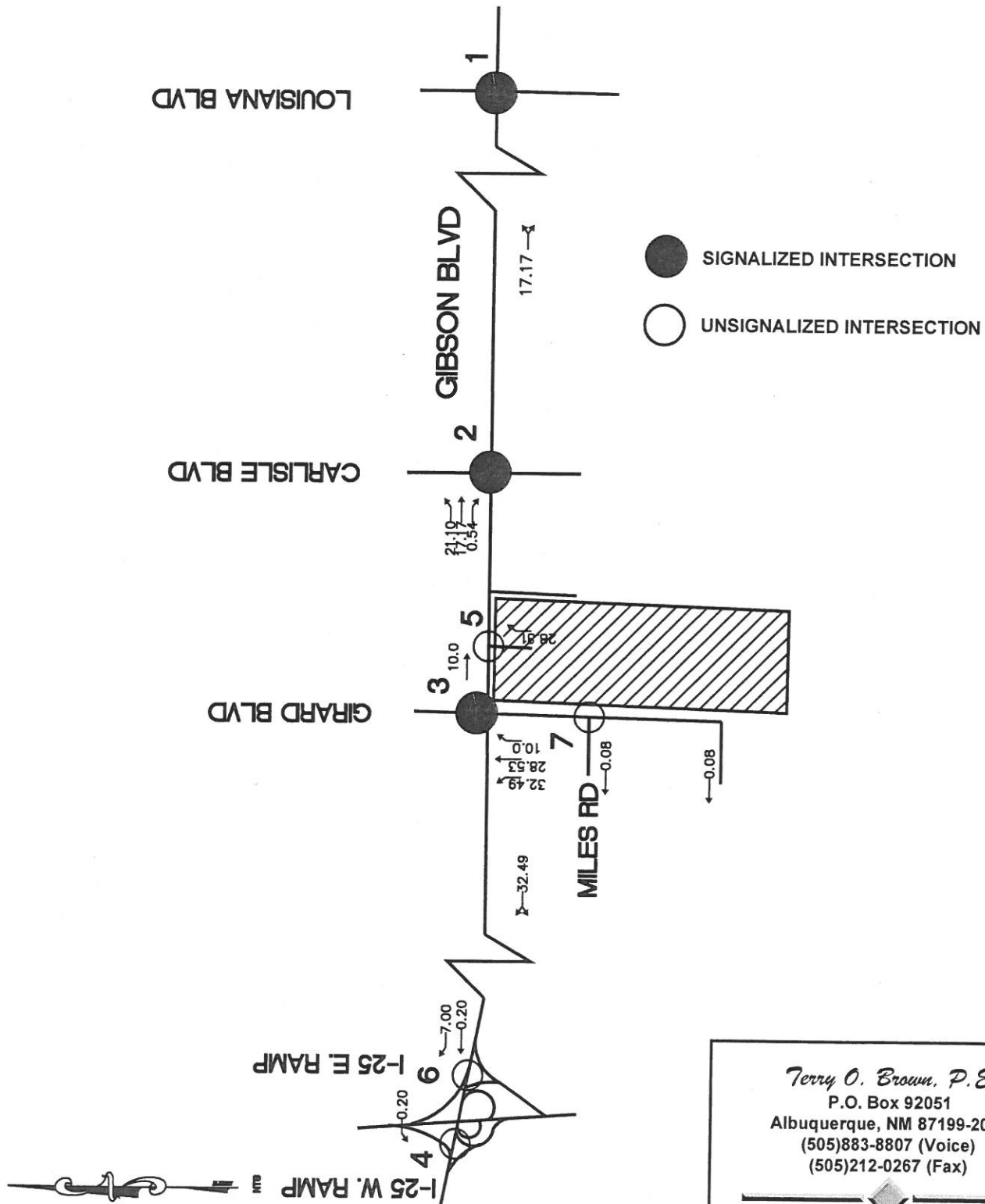


Sunport ACE Project

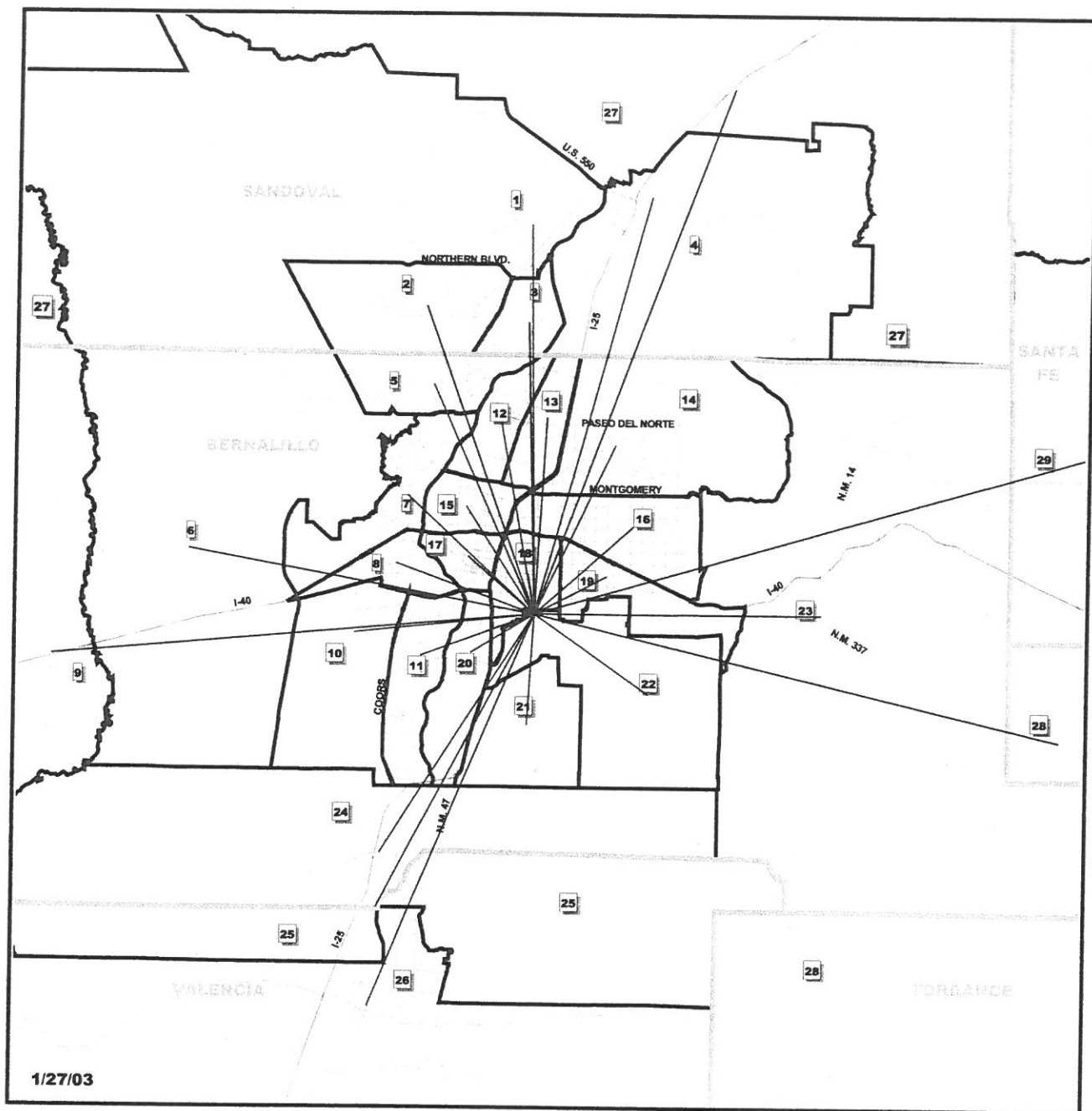
(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Assignments (% Exiting) - Commercial

Case "Y" - Drive on Gibson



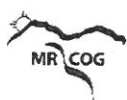
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Albuquerque, NM 87199-2051
(505)883-8807 (Voice)
(505)212-0267 (Fax)



22 Subarea Identification Number

Figure 6

Subareas of the MRCOG Region



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

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

**Sunport ACE Project
(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)
Trip Distribution Subarea Map**

Trip Distribution Table

Sunport ACE Project (S. of Gibson btwn Columbia Dr. & Hickman Ave)

Sub Area Population Data:

For determination of Trip Distribution for Proposed Office Development 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

Sub Area I.D.#	% Sub Area In Study	2015 Population	2025 Population	Interpolated Population for the Year 2020	Population in Study	Dist. (Mi.)	Population / Distance	(IN)			(GN)			(CN)		
								% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population
1	100%	58,191	127,178	92,685	92,685	16.7	5,550	100%	3.41%	5,550	0%	0.00%	0	0%	0.00%	0
2	100%	51,766	65,774	58,770	58,770	14.0	4,198	100%	2.58%	4,198	0%	0.00%	0	0%	0.00%	0
3	100%	8,277	10,139	9,208	9,208	12.5	737	100%	0.45%	737	0%	0.00%	0	0%	0.00%	0
4	100%	14,557	16,645	15,601	15,601	18.5	843	100%	0.52%	843	0%	0.00%	0	0%	0.00%	0
5	100%	62,713	67,834	65,274	65,274	10.8	6,044	100%	3.72%	6,044	0%	0.00%	0	0%	0.00%	0
6	100%	14,282	52,588	33,435	33,435	15.2	2,200	100%	1.35%	2,200	0%	0.00%	0	0%	0.00%	0
7	100%	60,860	79,163	70,012	70,012	7.5	9,335	100%	5.74%	9,335	0%	0.00%	0	0%	0.00%	0
8	100%	30,322	30,045	30,184	30,184	6.3	4,791	100%	2.95%	4,791	0%	0.00%	0	0%	0.00%	0
9	100%	1,878	2,156	2,017	2,017	20.8	97	100%	0.06%	97	0%	0.00%	0	0%	0.00%	0
10	100%	65,364	67,358	66,361	66,361	7.8	8,508	25%	5.23%	2,127	0%	0.00%	0	0%	0.00%	0
11	100%	33,469	34,155	33,812	33,812	5.2	6,502	25%	4.00%	1,626	0%	0.00%	0	0%	0.00%	0
12	100%	17,724	17,964	17,844	17,844	8.3	2,150	100%	1.32%	2,150	0%	0.00%	0	0%	0.00%	0
13	100%	10,624	9,340	9,982	9,982	8.4	1,188	100%	0.73%	1,188	0%	0.00%	0	0%	0.00%	0
14	100%	103,826	102,925	103,376	103,376	8.0	12,922	100%	7.95%	12,922	0%	0.00%	0	0%	0.00%	0
15	100%	26,850	27,053	26,952	26,952	5.5	4,900	100%	3.01%	4,900	0%	0.00%	0	0%	0.00%	0
16	100%	107,409	104,793	106,101	106,101	5.7	18,614	100%	4.58%	7,446	0%	0.00%	0	0%	0.00%	0
17	100%	23,810	25,804	24,807	24,807	3.8	6,528	60%	2.41%	3,917	10%	0.40%	653	10%	1.14%	1,861
18	100%	43,626	48,198	45,912	45,912	1.8	25,507	10%	15.69%	2,551	20%	3.14%	5,101	25%	3.92%	6,377
19	100%	65,561	65,783	65,672	65,672	3.5	18,763	0%	0.00%	0	10%	1.15%	1,876	15%	1.73%	2,815
20	100%	9,536	12,198	10,867	10,867	3.2	3,396	0%	2.09%	0	0%	0.00%	0	0%	0.00%	0
21	100%	4,225	72,808	38,517	38,517	4.8	8,024	0%	4.93%	0	0%	0.00%	0	0%	0.00%	0
22*	100%	3,874	4,214	4,044	4,044	6.0	674	0%	0.41%	0	0%	0.00%	0	0%	0.00%	0
23	100%	24,135	32,739	28,437	28,437	12.3	2,312	100%	1.42%	2,312	0%	0.00%	0	0%	0.00%	0
24	100%	2,815	3,209	3,012	3,012	12.2	247	0%	0.15%	0	0%	0.00%	0	0%	0.00%	0
25	100%	995	1,136	1,066	1,066	14.2	75	0%	0.05%	0	0%	0.00%	0	0%	0.00%	0
26	100%	86,303	132,754	109,529	109,529	18.3	5,985	0%	3.68%	0	0%	0.00%	0	0%	0.00%	0
27	100%	23,414	26,278	24,846	24,846	24.0	1,035	0%	0.64%	1,035	0%	0.00%	0	0%	0.00%	0
28	100%	20,001	24,230	22,116	22,116	23.2	953	100%	0.59%	953	0%	0.00%	0	0%	0.00%	0
29	100%	11,554	14,407	12,981	12,981	24.5	530	100%	0.33%	530	0%	0.00%	0	0%	0.00%	0
		987,961	1,278,668	1,133,415	1,133,415		162,609		47.63%	77,451		4.65%	7,630		6.80%	11,053
										47.63%			4,69%			6,80%

* - Subarea in which the site is located.

Trip Distribution Table

Support ACE Project (S. of Gibson btwn Columbia Dr & Hickman Ave)

Sub Area Population Data:

For determination of Trip Distribution for Proposed Office Development 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

Sub Area I.D.#	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year 2020	Population in Study	Dist. (Mi.)	Population / Distance	(LN)			(GE)			(GC2)		
								% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population	% Utilizing	% Population / Dist. Utilizing	Population
1	100%	58,191	127,178	92,685	92,685	16.7	5,550	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
2	100%	51,766	65,774	58,770	58,770	14.0	4,198	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
3	100%	8,277	10,139	9,208	9,208	12.5	737	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
4	100%	14,557	16,645	15,601	15,601	18.5	843	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5	100%	62,713	67,834	65,274	65,274	10.8	6,044	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6	100%	14,282	52,588	33,435	33,435	15.2	2,200	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7	100%	60,860	79,163	70,012	70,012	7.5	9,335	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8	100%	30,322	30,045	30,184	30,184	6.3	4,791	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
9	100%	1,878	2,156	2,017	2,017	20.8	97	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
10	100%	65,364	67,358	66,361	66,361	7.8	8,508	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
11	100%	33,489	34,155	33,812	33,812	5.2	6,502	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
12	100%	17,724	17,964	17,844	17,844	8.3	2,150	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
13	100%	10,624	9,340	9,982	9,982	8.4	1,188	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
14	100%	103,826	102,925	103,376	103,376	8.0	12,922	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
15	100%	26,850	27,053	26,952	26,952	5.5	4,900	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
16	100%	107,409	104,793	106,101	106,101	5.7	18,614	10%	1.14%	1,861	40%	4.58%	7,446	10%	0.40%	653
17	100%	23,810	25,804	24,807	24,807	3.8	6,528	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
18	100%	43,626	48,198	45,912	45,912	1.8	25,507	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
19	100%	65,561	65,783	65,672	65,672	3.5	18,763	35%	4.04%	6,567	35%	4.04%	6,567	10%	1.57%	2,551
20	100%	9,536	12,198	10,867	10,867	3.2	3,396	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
21	100%	4,225	72,808	38,517	38,517	4.8	8,024	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
22*	100%	3,874	4,214	4,044	4,044	6.0	674	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
23	100%	24,135	32,739	28,437	28,437	12.3	2,312	0%	0.00%	0	78%	0.32%	526	9%	0.04%	61
24	100%	2,815	3,209	3,012	3,012	12.2	247	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
25	100%	995	1,136	1,066	1,066	14.2	75	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
26	100%	86,303	132,754	109,529	109,529	18.3	5,985	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
27	100%	23,414	26,278	24,846	24,846	24.0	1,035	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
28	100%	20,001	24,230	22,116	22,116	23.2	953	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
29	100%	11,554	14,407	12,981	12,981	24.5	530	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
		987,961	1,278,868	1,133,415	1,133,415		162,609		5.18%	8,429		8.94%	14,539		2.01%	3,264
										5.18%			8.94%			2.01%

* - Subarea in which the site is located.

Trip Distribution Table

Support ACE Project (S. of Gibson btwn Columbia Dr & Hickman Ave)

Sub Area Population Data:

For determination of Trip Distribution for Proposed Office Development 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

Sub Area ID #	% Sub Area in Study	2015 Population	2025 Population	Interpolated Population for the Year 2020	Population in Study	Dist. (Mi.)	Population / Distance	(CS) Carlisle Blvd South			(GS) Girard Blvd South			(IS) Interstate 25 South		
								% Utilizing	% Population / Dist Utilizing	Population	% Utilizing	% Population / Dist Utilizing	Population	% Utilizing	% Population / Dist Utilizing	Population
1	100%	58,191	127,178	92,685	92,685	16.7	5,550	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
2	100%	51,766	65,774	58,770	58,770	14.0	4,198	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
3	100%	8,277	10,139	9,208	9,208	12.5	737	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
4	100%	14,557	16,645	15,601	15,601	18.5	843	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5	100%	62,713	67,834	65,274	65,274	10.8	6,044	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6	100%	14,282	52,588	33,435	33,435	15.2	2,200	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7	100%	60,860	79,163	70,012	70,012	7.5	9,335	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8	100%	30,322	30,045	30,184	30,184	6.3	4,791	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
9	100%	1,878	2,156	2,017	2,017	20.8	97	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
10	100%	65,364	67,358	66,361	66,361	7.8	8,508	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
11	100%	33,469	34,155	33,812	33,812	5.2	6,502	0%	0.00%	0	0%	0.00%	0	75%	3.92%	6,381
12	100%	17,724	17,964	17,844	17,844	8.3	2,150	0%	0.00%	0	0%	0.00%	0	0%	0.00%	4,877
13	100%	10,624	9,340	9,982	9,982	8.4	1,188	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
14	100%	103,826	102,925	103,376	103,376	8.0	12,922	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
15	100%	26,850	27,053	26,952	26,952	5.5	4,900	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
16	100%	107,409	104,793	106,101	106,101	5.7	18,614	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
17	100%	23,810	25,804	24,807	24,807	3.8	6,528	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
18	100%	43,626	48,198	45,912	45,912	1.8	25,507	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
19	100%	65,561	65,783	65,672	65,672	3.5	18,763	0%	0.00%	0	5%	0.78%	1,275	0%	0.00%	0
20	100%	9,536	12,198	10,867	10,867	3.2	3,396	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
21	100%	4,225	72,808	38,517	38,517	4.8	8,024	0%	0.00%	0	0%	0.00%	0	75%	1.57%	2,547
22*	100%	3,874	4,214	4,044	4,044	6.0	674	3%	0.01%	20	0%	0.00%	0	100%	4.93%	8,024
23	100%	24,135	32,739	28,437	28,437	12.3	2,312	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
24	100%	2,815	3,209	3,012	3,012	12.2	247	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
25	100%	995	1,136	1,066	1,066	14.2	75	0%	0.00%	0	0%	0.00%	0	100%	0.15%	247
26	100%	86,303	132,754	109,529	109,529	18.3	5,985	0%	0.00%	0	0%	0.00%	0	100%	0.05%	75
27	100%	23,414	26,278	24,846	24,846	24.0	1,035	0%	0.00%	0	0%	0.00%	0	100%	3.68%	5,985
28	100%	20,001	24,230	22,116	22,116	23.2	953	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
29	100%	11,554	14,407	12,981	12,981	24.5	530	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
		987,961	1,278,868	1,133,415	1,133,415	182,609			0.01%	20		0.78%	1,275		17.30%	28,136
										0.01%			0.78%			17.30%

* - Subarea in which the site is located.

Trip Distribution Table

Support ACE Project (S. of Gibson btwn Columbia Dr & Hickman Ave)

Sub Area Population Data:

For determination of Trip Distribution for Proposed Office Development 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

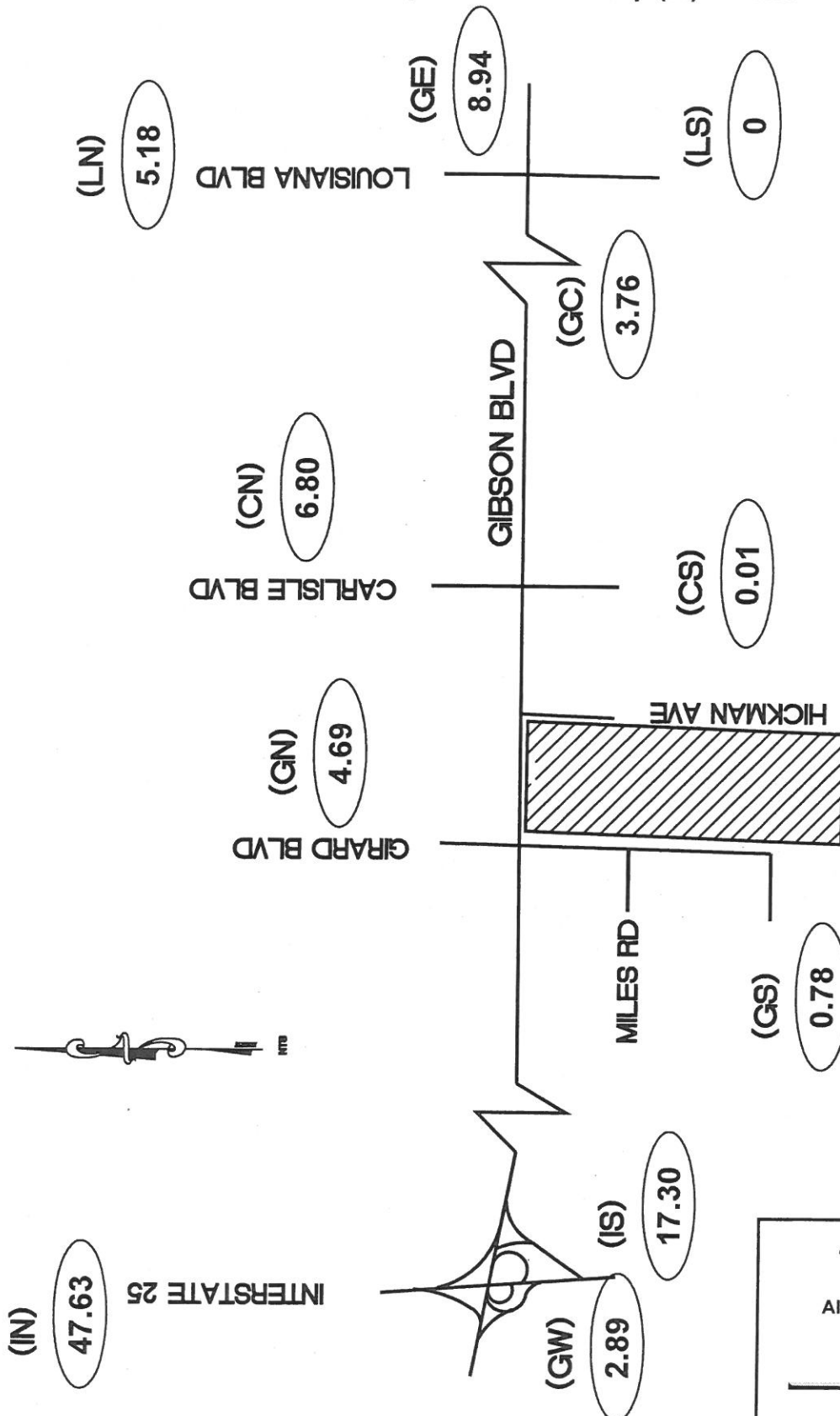
						(GW)			(GC)			(LS)					
						Gibson Blvd West			Gibson Blvd Central			Louisiana Blvd South					
Sub Area I.D.#	% Sub Area In Study	2015 Population	2025 Population	Interpolated Population for the Year	Population in Study	Dist. (Mi.)	Population / Distance	% Utilizing	% Population / Dist Utilizing	Population	% Utilizing	% Population / Dist Utilizing	Population	% Utilizing			
1	100%	58,191	127,178	92,685	92,685	16.7	5,550	0%	0.00%	0	0%	0.00%	0	0%			
2	100%	51,766	65,774	58,770	58,770	14.0	4,198	0%	0.00%	0	0%	0.00%	0	0%			
3	100%	8,277	10,139	9,208	9,208	12.5	737	0%	0.00%	0	0%	0.00%	0	0%			
4	100%	14,557	16,645	15,601	15,601	18.5	843	0%	0.00%	0	0%	0.00%	0	0%			
5	100%	62,713	67,834	65,274	65,274	10.8	6,044	0%	0.00%	0	0%	0.00%	0	0%			
6	100%	14,282	52,588	33,435	33,435	15.2	2,200	0%	0.00%	0	0%	0.00%	0	0%			
7	100%	60,860	79,163	70,012	70,012	7.5	9,335	0%	0.00%	0	0%	0.00%	0	0%			
8	100%	30,322	30,045	30,184	30,184	6.3	4,791	0%	0.00%	0	0%	0.00%	0	0%			
9	100%	1,878	2,156	2,017	2,017	20.8	97	0%	0.00%	0	0%	0.00%	0	0%			
10	100%	65,364	67,358	66,361	66,361	7.8	8,508	0%	0.00%	0	0%	0.00%	0	0%			
11	100%	33,469	34,155	33,812	33,812	5.2	6,502	0%	0.00%	0	0%	0.00%	0	0%			
12	100%	17,724	17,964	17,844	17,844	8.3	2,150	0%	0.00%	0	0%	0.00%	0	0%			
13	100%	10,624	9,340	9,982	9,982	8.4	1,188	0%	0.00%	0	0%	0.00%	0	0%			
14	100%	103,826	102,925	103,376	103,376	8.0	12,922	0%	0.00%	0	0%	0.00%	0	0%			
15	100%	26,850	27,053	26,952	26,952	5.5	4,900	0%	0.00%	0	0%	0.00%	0	0%			
16	100%	107,409	104,793	106,101	106,101	5.7	18,614	0%	0.00%	0	0%	0.00%	0	0%			
17	100%	23,810	25,804	24,807	24,807	3.8	6,528	20%	0.80%	1,306	0%	0.00%	0	0%			
18	100%	43,626	48,198	45,912	45,912	1.8	25,507	10%	1.57%	2,551	20%	3.14%	5,101	0%			
19	100%	65,561	65,783	65,672	65,672	3.5	18,763	0%	0.00%	0	5%	0.58%	938	0%			
20	100%	9,536	12,198	10,867	10,867	3.2	3,396	25%	0.52%	849	0%	0.00%	0	0%			
21	100%	4,225	72,808	38,517	38,517	4.8	8,024	0%	0.00%	0	0%	0.00%	0	0%			
22*	100%	3,874	4,214	4,044	4,044	6.0	674	0%	0.00%	0	10%	0.04%	67	0%			
23	100%	24,135	32,739	28,437	28,437	12.3	2,312	0%	0.00%	0	0%	0.00%	0	0%			
24	100%	2,815	3,209	3,012	3,012	12.2	247	0%	0.00%	0	0%	0.00%	0	0%			
25	100%	995	1,136	1,066	1,066	14.2	75	0%	0.00%	0	0%	0.00%	0	0%			
26	100%	86,303	132,754	109,529	109,529	18.3	5,985	0%	0.00%	0	0%	0.00%	0	0%			
27	100%	23,414	26,278	24,846	24,846	24.0	1,035	0%	0.00%	0	0%	0.00%	0	0%			
28	100%	20,001	24,230	22,116	22,116	23.2	953	0%	0.00%	0	0%	0.00%	0	0%			
29	100%	11,554	14,407	12,981	12,981	24.5	530	0%	0.00%	0	0%	0.00%	0	0%			
		987,981	1,278,868	1,133,415	1,133,415	162,609			2.89%	4,705	0%	3.76%	6,107	0%			
														2.89%	3.76%	0	0.00%
															Subarea in which the site it located.		

* - Subarea in which the site is located.

Sunport ACE Project

(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Distribution Map (%) - Office

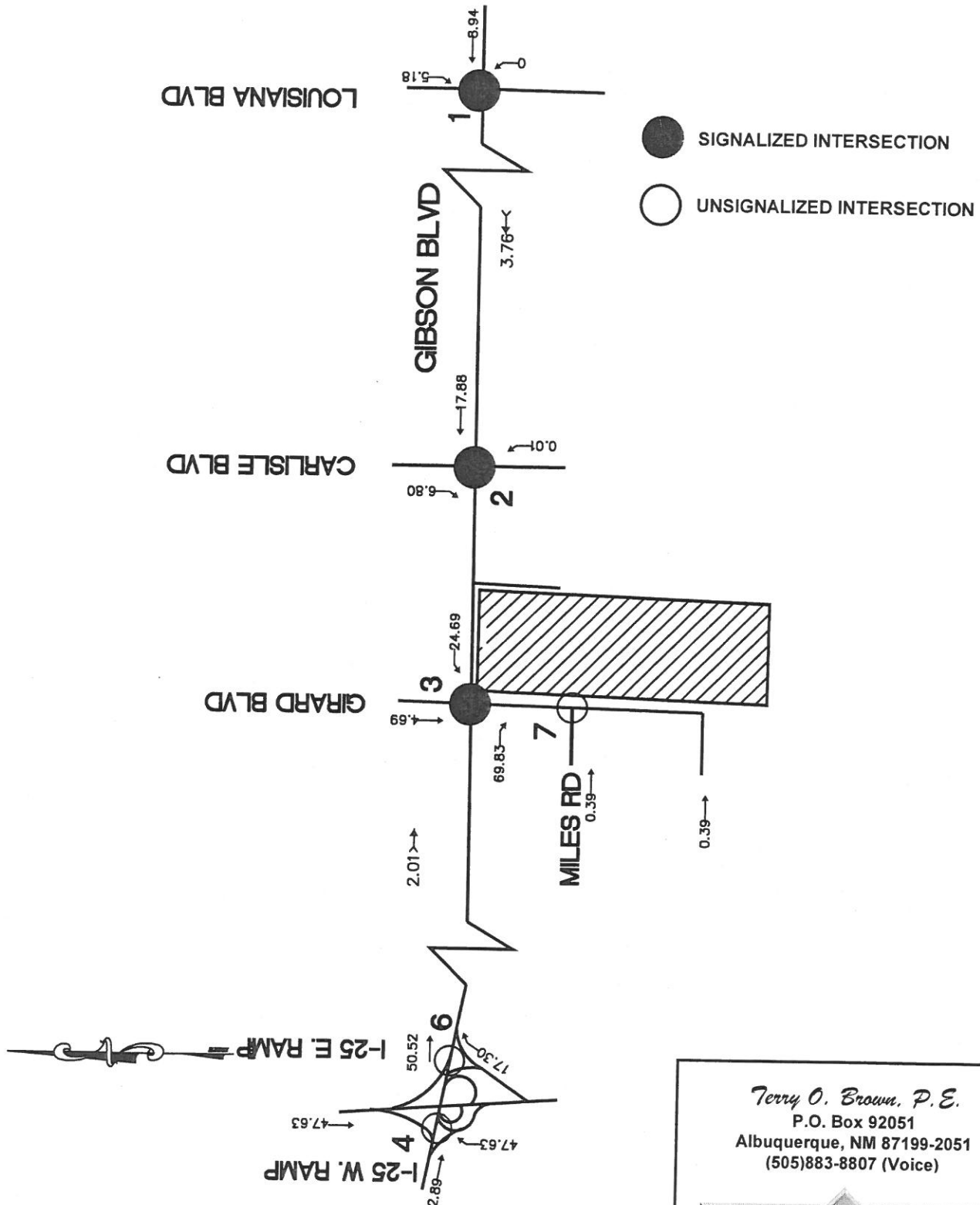


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(505)883-8807 (Voice)
(505)212-0267 (Fax)

Sunport ACE Project

(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Assignments (% Entering) - Office
Both Cases



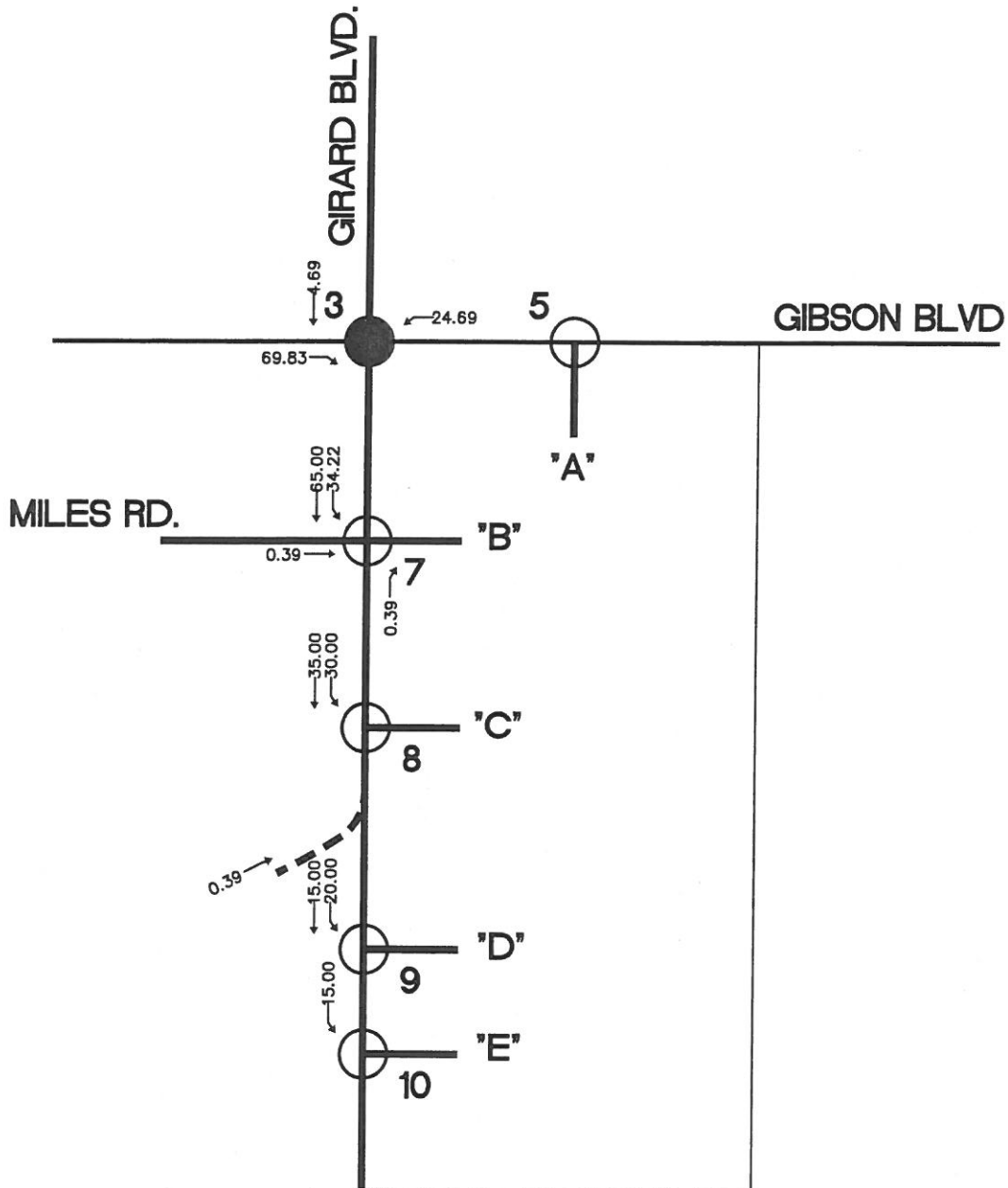
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Sunport ACE Project

(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Assignments (% Entering) - Office

Driveways - Case Y



Terry O. Brown, P.E.

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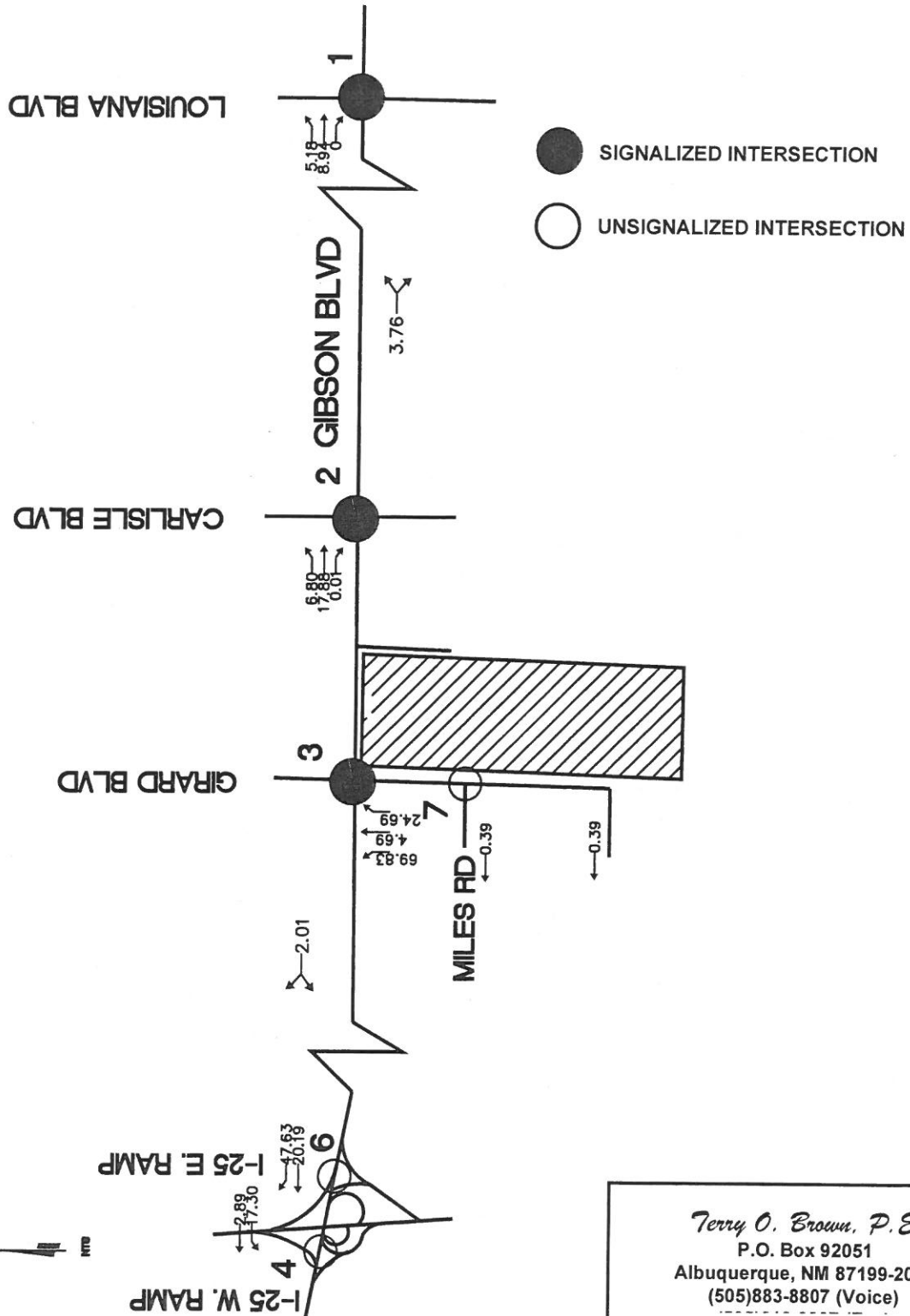
Albuquerque, NM 87199-2051

(505)883-8807 (Voice)

Sunport ACE Project

(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

Trip Assignments (% Exiting) - Office
Both Cases

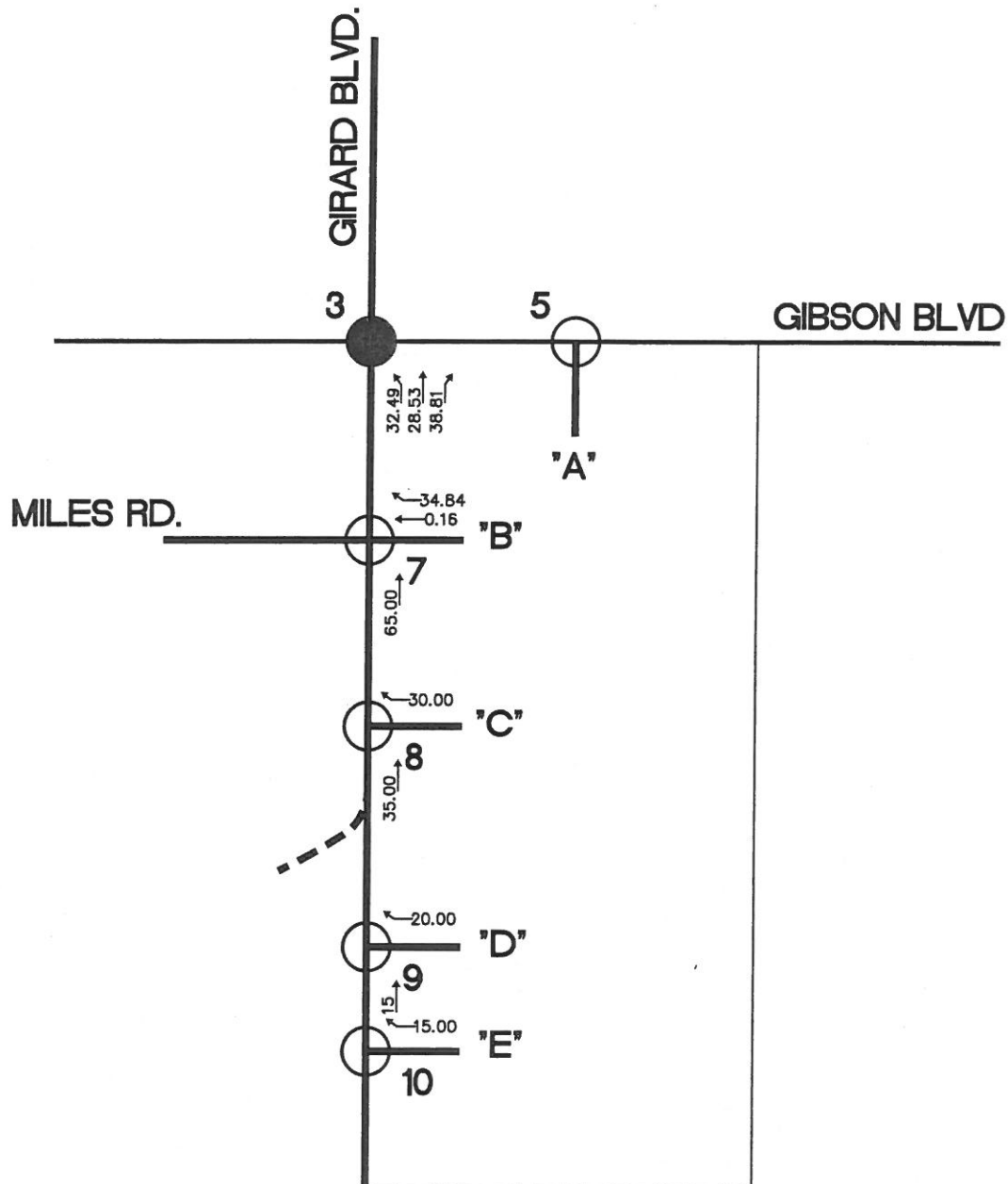


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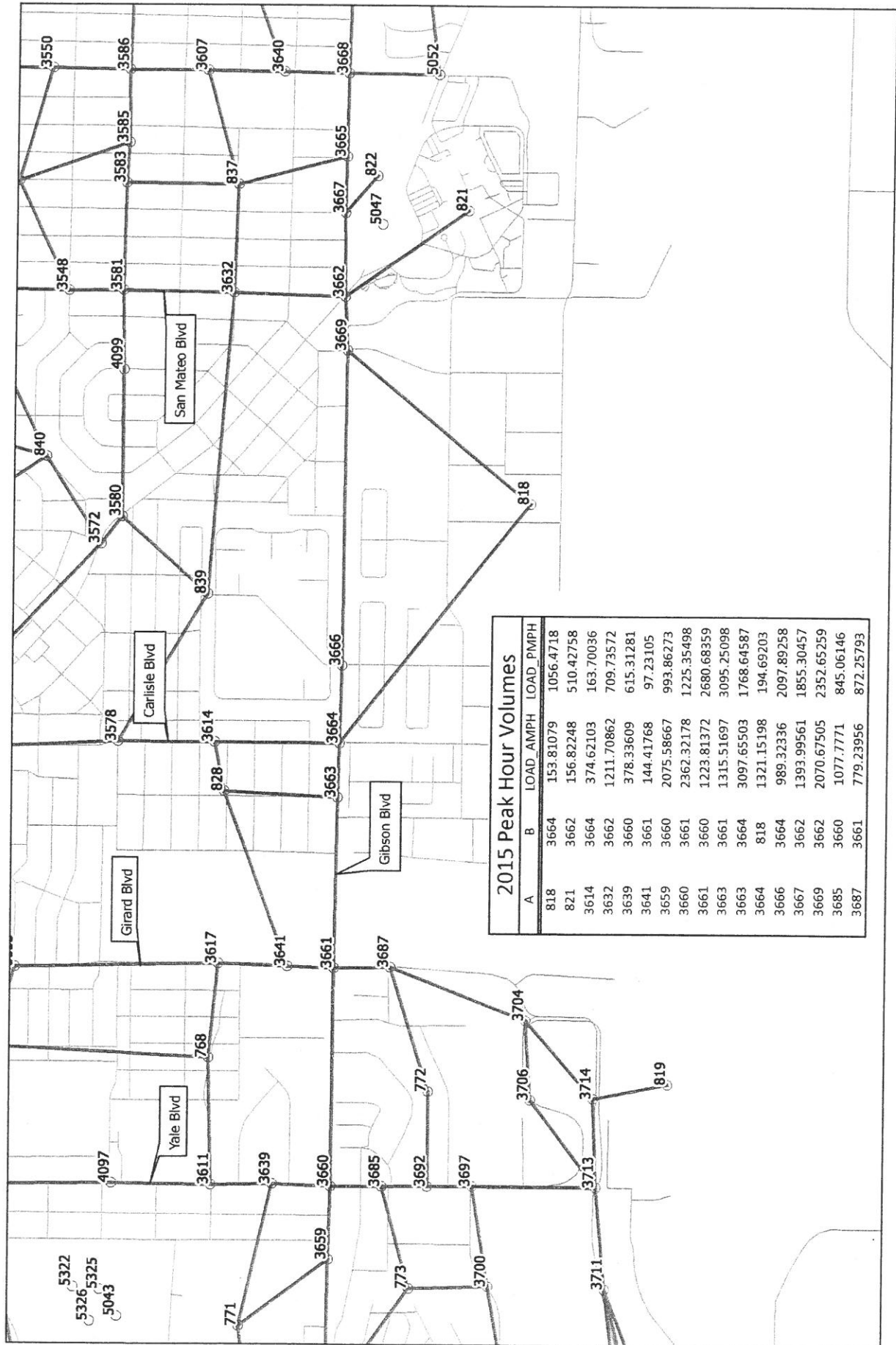
Sunport ACE Project

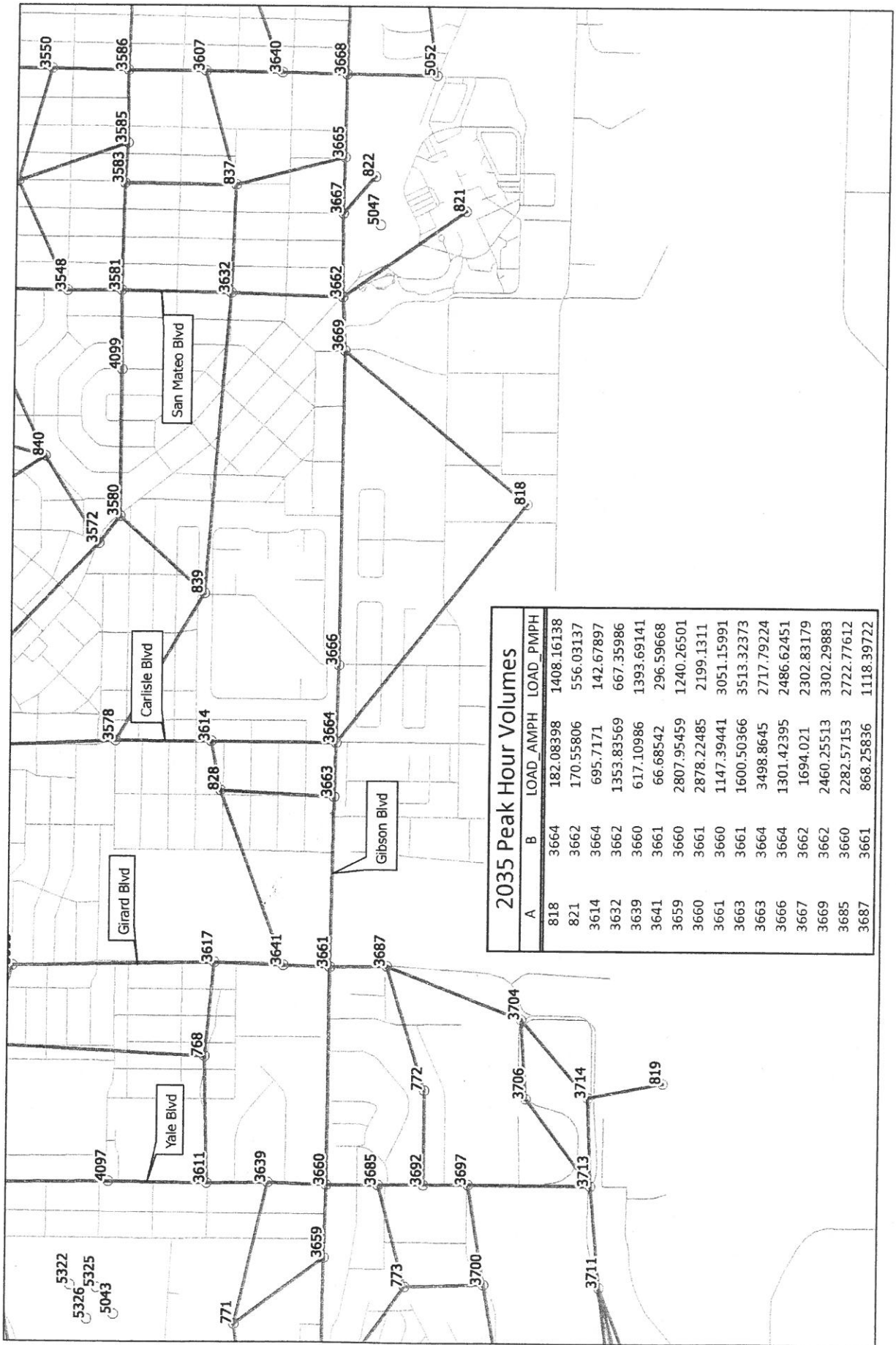
(S. of Gibson Blvd btwn Columbia Dr & Hickman Ave)

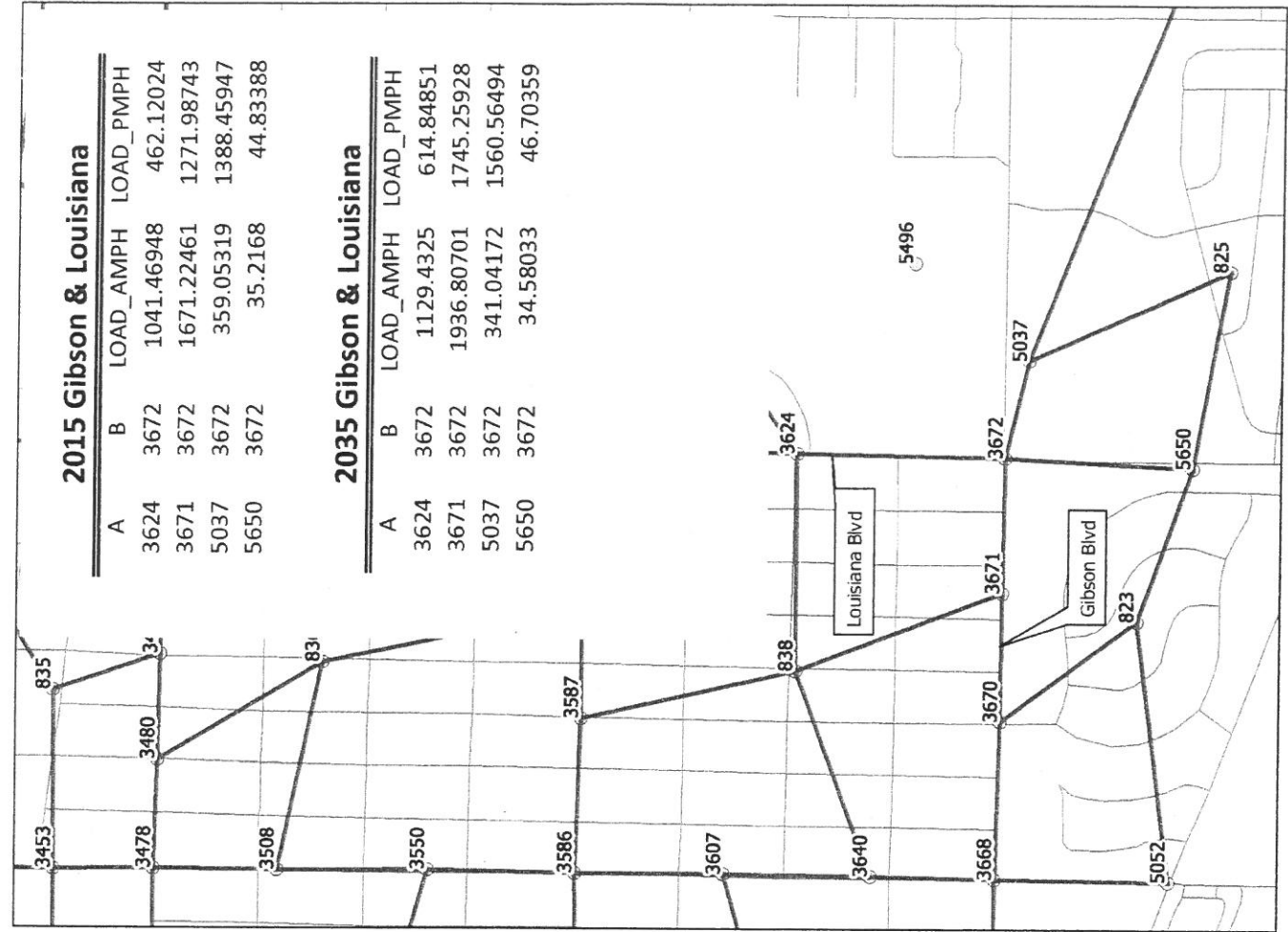
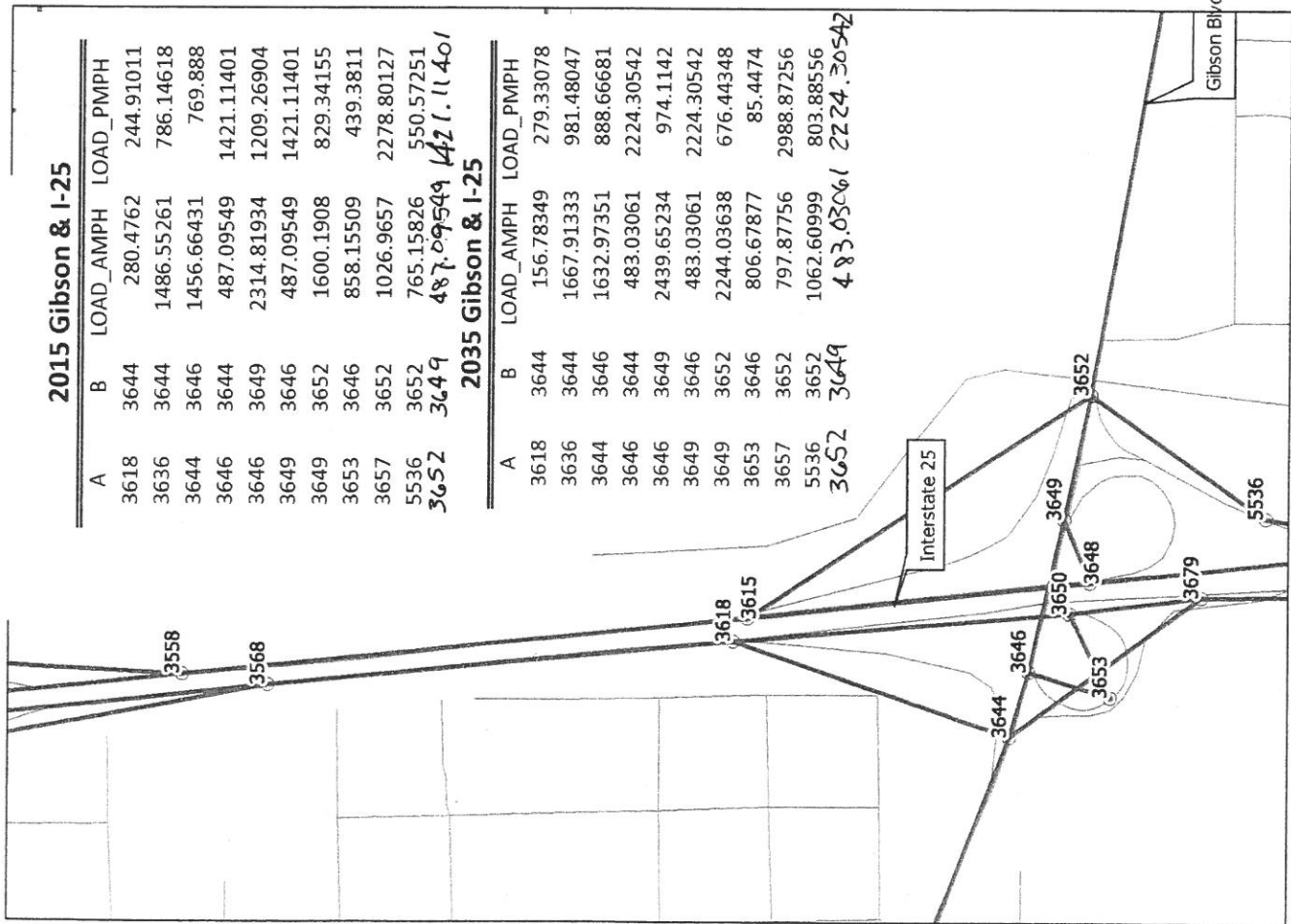
Trip Assignments (% Exiting) - Office
Driveways - Case Y



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Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2020) - 100% Development

Case "Y" - Drive on Gibson Blvd

INTERSECTION: **Summary**

Gibson Blvd / Louisiana Blvd

(1)	3.0% Truck Existing (2014) 2020 (NO BUILD - A.M.) 2020 (BUILD - A.M.)	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)			PHF
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
		186	506	5	10	178	35	2	4	12	297	40	449	
		280	763	8	12	205	40	3	5	15	334	45	505	
		287	775	8	12	257	40	3	5	15	334	45	535	
0.91			0.91			0.91			0.91					
Existing (2014) 2020 (NO BUILD - P.M.) 2020 (BUILD - P.M.)	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)			PHF	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	427	178	2	19	681	221	33	58	63	46	19	277		
	656	273	3	22	816	265	35	61	66	56	23	340		
	684	320	3	22	832	265	35	61	66	56	23	349		

Gibson Blvd / Carlisle Blvd

(2)	3.0% Truck Existing (2014) 2020 (NO BUILD - A.M.) 2020 (BUILD - A.M.)	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)			PHF
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
		82	1,425	294	110	968	43	29	4	4	94	77	105	
		104	1,809	373	115	1,013	45	62	8	8	135	110	150	
		163	1,874	374	115	1,164	45	63	8	8	135	110	248	
0.98			0.98			0.98			0.98			PHF		
Existing (2014) 2020 (NO BUILD - P.M.) 2020 (BUILD - P.M.)	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)			PHF	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	135	1,036	7	14	1,773	123	383	86	52	64	6	92		
	186	1,423	10	15	1,926	133	569	128	78	67	6	97		
	324	1,601	13	15	2,040	133	572	128	78	67	6	211		

Gibson Blvd / Girard Blvd

(3)

3.0% Truck

Existing (2014)

2020 (NO BUILD - A.M.)

2020 (BUILD - A.M.)

Eastbound (Gibson Blvd)				Westbound (Gibson Blvd)				Northbound (Girard Blvd)				Southbound (Girard Blvd)				PHF
Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		
67	1,745	16		125	925	43		8	9	76		69	34	62		
78	2,031	19		141	1,048	49		11	12	97		73	36	65		
78	2,079	466		284	1,048	49		183	85	155		112	103	65		
0.92				0.92				0.92				0.92				

Existing (2014)

2020 (NO BUILD - P.M.)

2020 (BUILD - P.M.)

Eastbound (Gibson Blvd)				Westbound (Gibson Blvd)				Northbound (Girard Blvd)				Southbound (Girard Blvd)				PHF
Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		
96	1,316	7		131	2,032	122		13	39	117		62	31	105		
111	1,523	8		152	2,344	141		16	50	150		71	35	120		
111	1,608	203		195	2,344	141		544	213	329		139	113	120		

Gibson Blvd / I-25 W. Ramp

(4)

3.0% Truck Existing (2014) 2020 (NO BUILD - A.M.) 2020 (BUILD - A.M.)	0.94			0.94			0.94			0.94			PHF
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	1,095	30	208	346	0	0	0	1,979	0	0	256	
	0	1,254	33	264	406	0	0	0	2,114	0	0	271	
	0	1,271	33	288	410	0	0	0	2,410	0	0	271	
	0.98			0.98			0.98			0.98			PHF
Existing (2014) 2020 (NO BUILD - P.M.) 2020 (BUILD - P.M.)	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	765	29	498	922	0	0	0	737	0	0	205	
	0	883	31	645	1,092	0	0	0	829	0	0	217	
	0	888	31	738	1,107	0	0	0	946	0	0	217	

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2020) - 100% Development

Case "Y" - Drive on Gibson Blvd

INTERSECTION: Summary

Gibson Blvd / Driveway "A"

(5)	0.92			0.92			0.92			0.92			PHF
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Driveway "A")			Southbound (Driveway "A")			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3.0% Truck													
Existing (2014)	0	0	0	0	0	0	0	0	0	0	0	0	0
2020 (NO BUILD - A.M.)	0	2,201	0	0	1,238	0	0	0	0	0	0	0	0
2020 (BUILD - A.M.)	0	2,259	87	107	1,381	0	0	0	68	0	0	0	0

	0.96			0.96			0.96			0.96			PHF
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Driveway "A")			Southbound (Driveway "A")			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2014)	0	0	0	0	0	0	0	0	0	0	0	0	
2020 (NO BUILD - P.M.)	0	1,744	0	0	2,637	0	0	0	0	0	0	0	
2020 (BUILD - P.M.)	0	1,923	152	188	2,680	0	0	0	139	0	0	0	

Gibson Blvd / I-25 E. Ramp

(6)	3.0% Truck	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2014)		0	2,757	288	0	534	626	21	0	437	0	0	0
2020 (NO BUILD - A.M.)		0	2,857	297	0	600	695	29	0	620	0	0	0
2020 (BUILD - A.M.)		0	2,876	297	0	921	777	29	0	722	0	0	0

	0.98			0.98			0.98			0.98			PHF
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2014)	0	1,251	247	0	1,401	1,203	13	0	331	0	0	0	0
2020 (NO BUILD - P.M.)	0	1,362	255	0	1,558	1,354	18	0	528	0	0	0	0
2020 (BUILD - P.M.)	0	1,396	255	0	1,754	1,641	18	0	559	0	0	0	0

Miles Rd / Girard Blvd

(7)	Eastbound (Miles Rd)			Westbound (Miles Rd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
3.0% Truck												
Existing (2014)	0	0	0	0	0	0	0	0	0	0	0	0
2020 (NO BUILD - A.M.)	60	0	0	0	0	0	0	60	0	0	95	100
2020 (BUILD - A.M.)	60	2	0	0	22	215	0	148	2	280	473	100

0.85														0.85														0.85														0.85														PHF																																																																																																																													
Eastbound (Miles Rd)														Westbound (Miles Rd)														Northbound (Girard Blvd)														Southbound (Girard Blvd)																																																																																																																																											
Left														Thru														Right														Left														Thru														Right														Left														Thru														Right																																																																					
Existing (2014)														0														0														0														0														0														0														0														0														0														0																																									
2020 (NO BUILD - P.M.)														108														5														5														0														0														0														5														108														5														0														190														5													
2020 (BUILD - P.M.)														108														6														5														0														85														528														5														453														6														203														303														5													

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2020) - 100% Development

Case "Y" - Drive on Gibson Blvd

INTERSECTION: **Summary**

Driveway "C" / Girard Blvd.

(8)

3.0% Truck

Existing (2014)

2020 (NO BUILD - A.M.)

2020 (BUILD - A.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Driveway "C")			Westbound (Driveway "C")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	120	0	0	196	0	0
0	0	0	0	0	41	0	168	0	174	399	0	0

Existing (2014)

2020 (NO BUILD - P.M.)

2020 (BUILD - P.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Driveway "C")			Westbound (Driveway "C")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	66	0	0	195	0	0
0	0	0	0	0	159	0	252	0	52	256	0	0

Driveway "D" / Girard Blvd.

(9)

3.0% Truck

Existing (2014)

2020 (NO BUILD - A.M.)

2020 (BUILD - A.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	60	0	0	60	0	0
0	0	0	0	0	27	0	80	0	116	147	0	0

Existing (2014)

2020 (NO BUILD - P.M.)

2020 (BUILD - P.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	60	0	0	60	0	0
0	0	0	0	0	106	0	140	0	35	86	0	0

Driveway "E" / Girard Blvd.

(10)

3.0% Truck

Existing (2014)

2020 (NO BUILD - A.M.)

2020 (BUILD - A.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	60	0	0	60	0	0
0	0	0	0	0	20	0	60	0	87	60	0	0

Existing (2014)

2020 (NO BUILD - P.M.)

2020 (BUILD - P.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	60	0	0	60	0	0
0	0	0	0	0	80	0	60	0	26	60	0	0

Sunport ACE Project (South of Gibson Blvd between Columbia Dr & Hickam Ave)

Projected Turning Movements Worksheet

Gibson Blvd / Louisiana Blvd

INTERSECTION :

E-W Street: **Gibson Blvd** (1)

NOTE: This intersection is beyond the 2 mile commercial radius and therefore there is no commercial traffic

N-S Street: **Louisiana Blvd**

Year of Existing Counts

2013

Implementation Year

2020

Growth Rates

9.25%

2.56%

4.81%

2.13%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
170	463	5	10	174	34	2	4	11	291	39	440
110	300	3	2	31	6	1	1	4	43	6	65
280	763	8	12	205	40	3	5	15	334	45	505
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	8.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.18%
5.18%	8.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7	12	0	0	52	0	0	0	0	0	0	30
287	775	8	12	257	40	3	5	15	334	45	535

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
389	162	2	18	658	214	33	57	62	44	18	266
267	111	1	4	158	51	2	4	4	12	5	74
656	273	3	22	816	265	35	61	66	56	23	340
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	8.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.18%
5.18%	8.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
28	47	0	0	16	0	0	0	0	0	0	9
684	320	3	22	832	265	35	61	66	56	23	349

Number of Commercial Trips Generated

Entering Exiting

275 236

A.M.

100% Commercial Development

484 483

P.M.

Number of Office Trips Generated

581 136

A.M.

100% Office Development

174 531

P.M.

2014 AM Peak Hr. Volumes

2014 PM Peak Hr. Volumes

Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
186	506	5	10	178	35	2	4	12	297	40	449
427	178	2	19	681	221	33	58	63	46	19	277

MRCOG Forecast Volumes Worksheet

Based on 2013 Traffic Count

2013 AM Link Volume	638	218	17	770
2013 PM Link Volume	553	890	152	328

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume	1672	359	36	1042
2015 PM Link Volume	1272	1389	45	463
2035 AM Link Volume	1937	341	35	1130
2035 PM Link Volume	1746	1561	47	615

Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2013-2035 AM Growth Rates

9.25%

2.56%

4.81%

2.13%

2013-2035 PM Growth Rates

9.81%

3.43%

-3.14%

3.98%

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

2015-2035 AM Growth Rates

0.79%

-0.25%

-0.14%

0.42%

2015-2035 PM Growth Rates

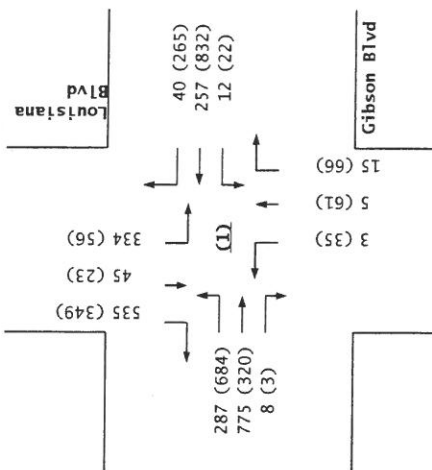
1.86%

0.62%

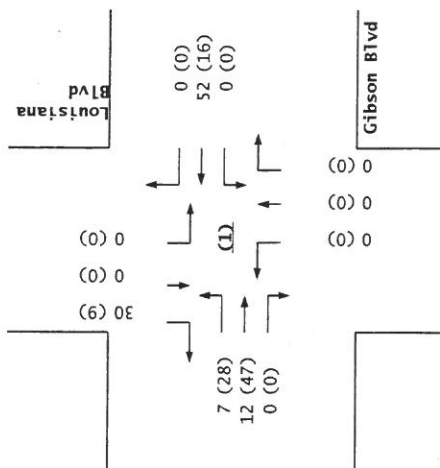
0.22%

1.64%

2020
BUILD

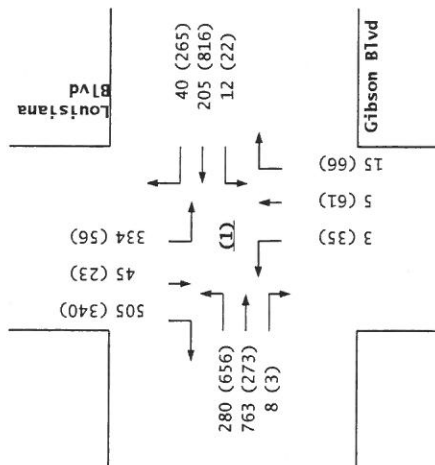


Trips



Gibson Blvd / Louisiana Blvd

2020
NO BUILD



Sunport ACE Project (South of Gibson Blvd between Columbia Dr & Hickam Ave)

Projected Turning Movements Worksheet

Gibson Blvd / Carlisle Blvd

INTERSECTION : E-W Street: Gibson Blvd (2)

N-S Street: Carlisle Blvd

Year of Existing Counts 2013

Implementation Year 2020

	4.70%			0.77%			23.98%			7.86%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	78	1,361	281	109	961	43	23	3	3	87	71	97
Background Traffic Growth	26	448	92	6	52	2	39	5	5	48	39	53
Subtotal (NO BUILD - A.M.)	104	1,809	373	115	1,013	45	62	8	8	135	110	150
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	17.17%	0.00%	0.54%	0.00%	0.00%	0.00%	0.00%	21.10%
Percent Commercial Trips Generated(Exiting)	21.10%	17.17%	0.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	17.88%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	6.80%
Percent Office Trips Generated(Exiting)	6.80%	17.88%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	59	65	1	0	151	0	1	0	0	0	0	98
Total AM Peak Hour BUILD Volumes	163	1,874	374	115	1,164	45	63	8	8	135	110	248

	6.63%			1.46%			8.83%			1.00%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	127	972	7	14	1,747	121	352	79	48	63	6	91
Background Traffic Growth	59	451	3	1	179	12	217	49	30	4	0	6
Subtotal (NO BUILD - P.M.)	186	1,423	10	15	1,926	133	569	128	78	67	6	97
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	17.17%	0.00%	0.54%	0.00%	0.00%	0.00%	0.00%	21.10%
Percent Commercial Trips Generated(Exiting)	21.10%	17.17%	0.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	17.88%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	6.80%
Percent Office Trips Generated(Exiting)	6.80%	17.88%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	138	178	3	0	114	0	3	0	0	0	0	114
Total PM Peak Hour BUILD Volumes	324	1,601	13	15	2,040	133	572	128	78	67	6	211

	Entering	Exiting	
Number of Commercial Trips Generated	275	236	A.M. 100% Commercial Development
	484	483	P.M.
Number of Office Trips Generated	581	136	A.M. 100% Office Development
	174	531	P.M.

	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)		
2014 AM Peak Hr. Volumes	82	1425	294	110	968	43	29	4	4	94	77	105
2014 PM Peak Hr. Volumes	135	1,036	7	14	1,773	123	383	86	52	64	6	92

MRCOG Forecast Volumes Worksheet

Based on 2013 Traffic Count

2013 AM Link Volume	1,720	1,113	29	255
2013 PM Link Volume	1,106	1,882	479	160

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume	3098	990	154	375
2015 PM Link Volume	1769	2098	1057	164
2035 AM Link Volume	3499	1302	182	696
2035 PM Link Volume	2716	2487	1409	143

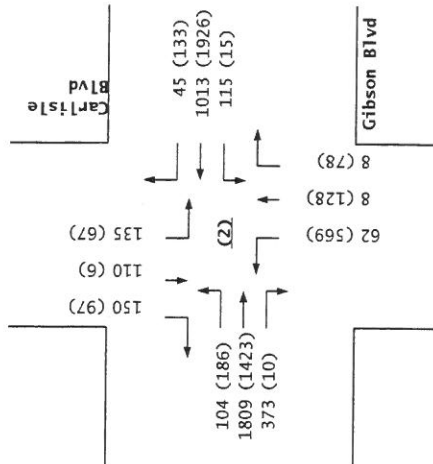
Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2013-2035 AM Growth Rates	4.70%	0.77%	23.98%	7.86%
2013-2035 PM Growth Rates	6.63%	1.46%	8.83%	-0.48%

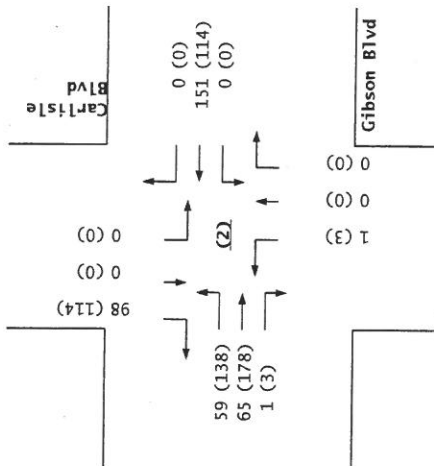
Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

2015-2035 AM Growth Rates	0.65%	1.58%	0.91%	4.28%
2015-2035 PM Growth Rates	2.68%	0.93%	1.67%	-0.64%

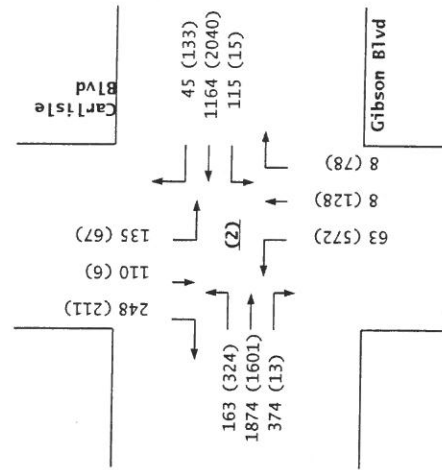
2020
NO BUILD



Trips



2020
BUILD



Gibson Blvd / Carlisle Blvd

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements Worksheet

Gibson Blvd / Girard Blvd

INTERSECTION: E-W Street: Gibson Blvd (3)

N-S Street: Girard Blvd

Year of Existing Counts 2013

Implementation Year 2020

Growth Rates

	2.81%			2.27%			5.00%			1.00%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	65	1,697	16	122	904	42	8	9	72	68	34	61
Background Traffic Growth	13	334	3	19	144	7	3	3	25	5	2	4
Subtotal (NO BUILD - A.M.)	78	2,031	19	141	1,048	49	11	12	97	73	36	65
Percent Commercial Trips Generated(Entering)	0.00%	17.49%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.00%	14.53%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.49%	28.53%	10.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	69.83%	24.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.69%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	69.83%	4.69%	24.69%	0.00%	0.00%	0.00%
Total Trips Generated	0	48	447	143	0	0	172	73	58	39	67	0
Total AM Peak Hour BUILD Volumes	78	2,079	466	284	1,048	49	183	85	155	112	103	65

	2.69%			2.63%			5.00%			2.41%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	93	1,282	7	128	1,980	119	12	37	111	61	30	103
Background Traffic Growth	18	241	1	24	364	22	4	13	39	10	5	17
Subtotal (NO BUILD - P.M.)	111	1,523	8	152	2,344	141	16	50	150	71	35	120
Percent Commercial Trips Generated(Entering)	0.00%	17.49%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.00%	14.53%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.49%	28.53%	10.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	69.83%	24.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.69%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	69.83%	4.69%	24.69%	0.00%	0.00%	0.00%
Total Trips Generated	0	85	195	43	0	0	528	163	179	68	78	0
Total PM Peak Hour BUILD Volumes	111	1,608	203	195	2,344	141	544	213	329	139	113	120

	Entering	Exiting	
Number of Commercial Trips Generated	275	236	A.M. 100% Commercial Development
	484	483	P.M.
Number of Office Trips Generated	581	136	A.M. 100% Office Development
	174	531	P.M.

	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
2014 AM Peak Hr. Volumes	67	1,745	16	125	925	43	8	9	76	69	34	62
2014 PM Peak Hr. Volumes	96	1,316	7	131	2,032	122	13	39	117	62	31	105

MRCOG Forecast Volumes Worksheet

Based on 2013 Traffic Count

2013 AM Link Volume	1,778	1,068	89	163
2013 PM Link Volume	1,382	2,227	160	194

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume	2363	1316	780	145
2015 PM Link Volume	1226	3096	873	98

2035 AM Link Volume	2879	1601	869	67
2035 PM Link Volume	2200	3514	1119	297

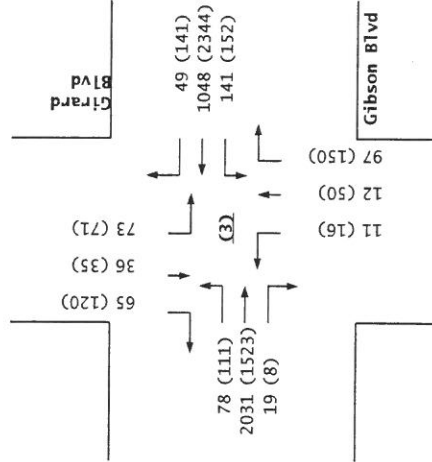
Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2013-2035 AM Growth Rates	2.81%	2.27%	39.84%	-2.68%
2013-2035 PM Growth Rates	2.69%	2.63%	27.24%	2.41%

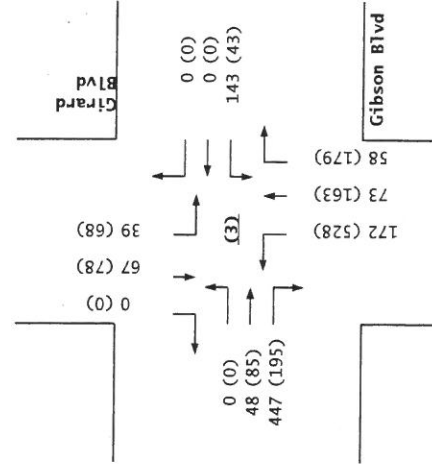
Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

2015-2035 AM Growth Rates	1.09%	1.08%	0.57%	-2.69%
2015-2035 PM Growth Rates	3.97%	0.68%	1.41%	10.15%

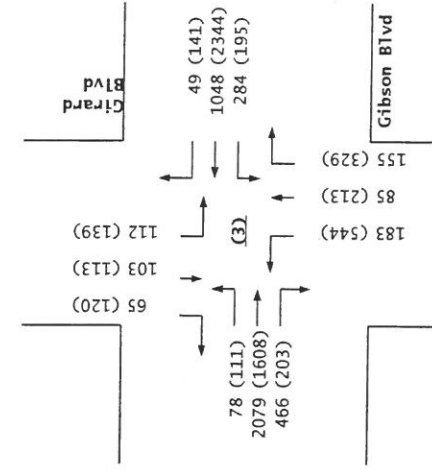
2020
NO BUILD



Trips



2020
BUILD



Gibson Blvd / Girard Blvd

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements Worksheet

Gibson Blvd / I-25 W. Ramp

INTERSECTION: E-W Street: Gibson Blvd (4)

N-S Street: I-25 W. Ramp

Year of Existing Counts 2013

Implementation Year 2020

Growth Rates

	2.20%			0.50%			1.00%			1.00%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	1,071	29	207	344	0	0	0	1,959	0	0	253
Background Traffic Growth	0	165	4	7	12	0	0	0	137	0	0	18
Subtotal	0	1,236	33	214	356	0	0	0	2,096	0	0	271
UNM Gibson CD - Community Retail	0	18	0	13	13	0	0	0	18	0	0	0
UNM Gibson CD - Fast Food / Market	0	0	0	37	37	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	1,254	33	264	406	0	0	0	2,114	0	0	271
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	2.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.63%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	17.30%	2.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	17	0	24	4	0	0	0	296	0	0	0
Total AM Peak Hour BUILD Volumes	0	1,271	33	288	410	0	0	0	2,410	0	0	271

	1.00%			1.00%			0.43%			1.00%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	757	29	493	913	0	0	0	734	0	0	203
Background Traffic Growth	0	53	2	35	64	0	0	0	22	0	0	14
Subtotal	0	810	31	528	977	0	0	0	756	0	0	217
UNM Gibson CD - Community Retail	0	40	0	42	41	0	0	0	40	0	0	0
UNM Gibson CD - Fast Food / Market	0	0	0	37	36	0	0	0	0	0	0	0
UNM Gibson CD - Destination Retail	0	33	0	38	38	0	0	0	33	0	0	0
Subtotal (NO BUILD - P.M.)	0	883	31	645	1,092	0	0	0	829	0	0	217
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	2.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	47.63%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	17.30%	2.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	5	0	93	15	0	0	0	117	0	0	0
Total PM Peak Hour BUILD Volumes	0	888	31	738	1,107	0	0	0	946	0	0	217

	Entering	Exiting	
Number of Commercial Trips Generated	275	236	A.M. 100% Commercial Development
	484	483	P.M.
Number of Office Trips Generated	581	136	A.M. 100% Office Development
	174	531	P.M.

	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
2014 AM Peak Hr. Volumes	0	1095	30	208	346	0	0	0	1,979	0	0	256
2014 PM Peak Hr. Volumes	0	765	29	498	922	0	0	0	737	0	0	205

MRCOG Forecast Volumes Worksheet

Based on 2013 Traffic Count

2013 AM Link Volume	1,100	551	1,959	253
2013 PM Link Volume	786	1,406	734	203

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume	1457	487	766	281
2015 PM Link Volume	770	1422	551	245

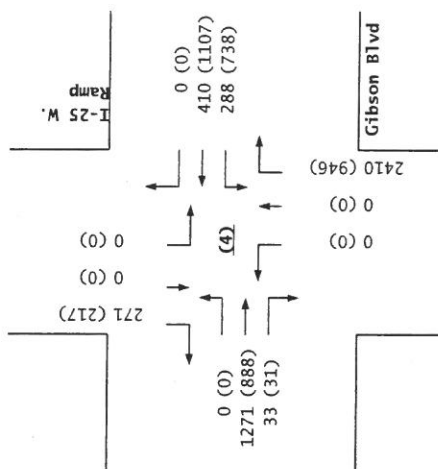
2035 AM Link Volume	1633	483	1063	157
2035 PM Link Volume	889	2225	804	280

Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2013-2035 AM Growth Rates	2.20%	-0.56%	-2.08%	-1.72%
2013-2035 PM Growth Rates	0.60%	2.65%	0.43%	1.72%

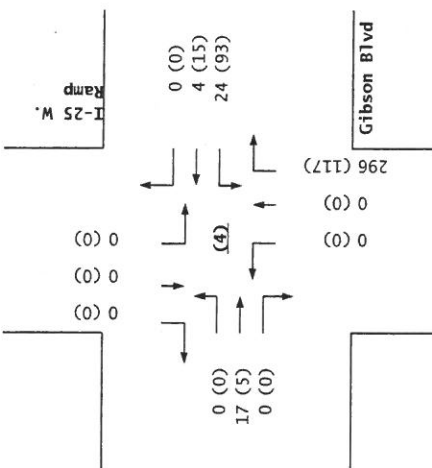
Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

2015-2035 AM Growth Rates	0.60%	-0.04%	1.94%	-2.21%
2015-2035 PM Growth Rates	0.77%	2.82%	2.30%	0.71%

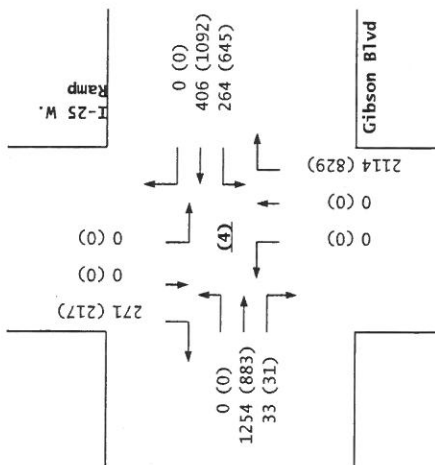


Gibson Blvd / I-25 W. Ramp

Trips



2020
NO BUILD



Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)
Projected Turning Movements Worksheet
Gibson Blvd / Driveway "A"

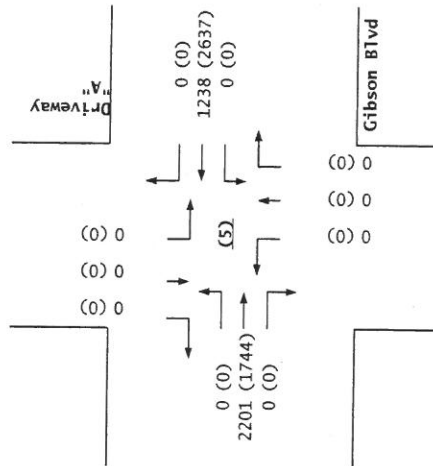
INTERSECTION : E-W Street: Gibson Blvd (5)
 N-S Street: Driveway "A"
 Year of Existing Counts 2013
 Implementation Year 2020

	2.27%			2.27%			2.27%			2.27%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes												
Background Traffic Growth												
Subtotal (NO BUILD - A.M.)	0	2,201	0	0	1,238	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	31.49%	38.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.81%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	24.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	24.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	58	87	107	143	0	0	0	68	0	0	0
Total AM Peak Hour BUILD Volumes	0	2,259	87	107	1,381	0	0	0	68	0	0	0

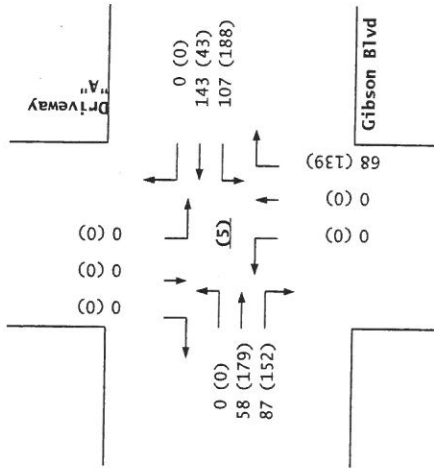
	2.63%			2.63%			2.63%			2.63%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes												
Background Traffic Growth												
Subtotal (NO BUILD - P.M.)	0	1,744	0	0	2,637	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	31.49%	38.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.81%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	24.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	24.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	179	152	188	43	0	0	0	139	0	0	0
Total PM Peak Hour BUILD Volumes	0	1,923	152	188	2,680	0	0	0	139	0	0	0

	Entering	Exiting	
Number of Commercial Trips Generated	275	236	A.M. 100% Commercial Development
	484	483	P.M.
Number of Office Trips Generated	581	136	A.M. 100% Office Development
	174	531	P.M.

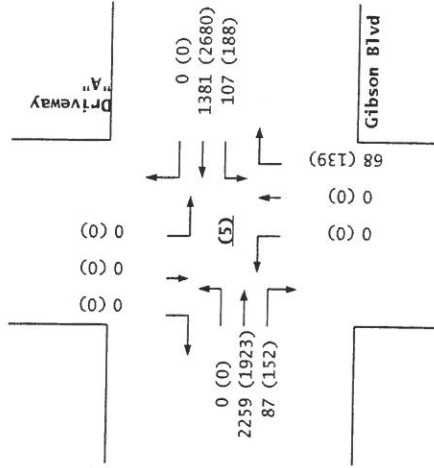
2020
NO BUILD



Trips



2020
BUILD



Gibson Blvd / Driveway "A"

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements Worksheet

Gibson Blvd / I-25 E. Ramp

INTERSECTION:

E-W Street: Gibson Blvd

(6)

N-S Street: I-25 E. Ramp

Year of Existing Counts 2013

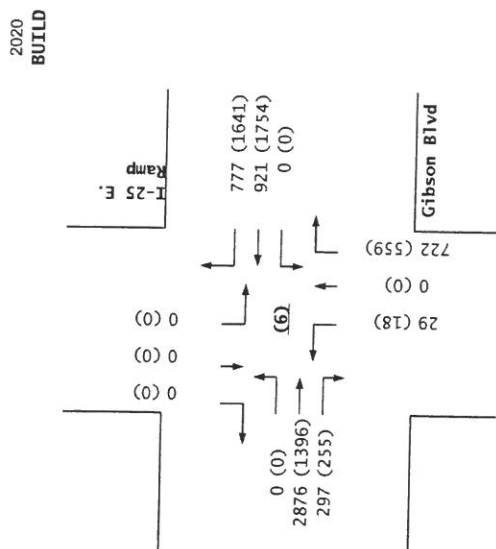
Implementation Year 2020

Growth Rates

	0.50%			0.50%			6.69%			1.00%		
	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	2,743	287	0	531	623	20	0	410	0	0	0
Background Traffic Growth	0	96	10	0	19	22	9	0	192	0	0	0
Subtotal	0	2,839	297	0	550	645	29	0	602	0	0	0
UNM Gibson CD - Community Retail	0	18	0	0	13	13	0	0	18	0	0	0
UNM Gibson CD - Fast Food / Market	0	0	0	0	37	37	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	2,857	297	0	600	695	29	0	620	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.20%	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	50.52%	0.00%	0.00%	0.00%	17.30%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	20.19%	47.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	19	0	0	321	82	0	0	102	0	0	0
Total AM Peak Hour BUILD Volumes	0	2,876	297	0	921	777	29	0	722	0	0	0

	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	1,245	246	0	1,394	1,197	12	0	310	0	0	0
Background Traffic Growth	0	44	9	0	49	42	6	0	145	0	0	0
Subtotal	0	1,289	255	0	1,443	1,239	18	0	455	0	0	0
UNM Gibson CD - Community Retail	0	40	0	0	41	41	0	0	40	0	0	0
UNM Gibson CD - Fast Food / Market	0	0	0	0	36	36	0	0	0	0	0	0
UNM Gibson CD - Destination Retail	0	33	0	0	38	38	0	0	33	0	0	0
Subtotal (NO BUILD - P.M.)	0	1,362	255	0	1,558	1,354	18	0	528	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.20%	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	50.52%	0.00%	0.00%	0.00%	17.30%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	20.19%	47.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	34	0	0	196	287	0	0	31	0	0	0
Total PM Peak Hour BUILD Volumes	0	1,396	255	0	1,754	1,641	18	0	559	0	0	0

	Entering	Exiting		
Number of Commercial Trips Generated	275	236	A.M.	100% Commercial Development
	484	483	P.M.	
Number of Office Trips Generated	581	136	A.M.	100% Office Development
	174	531	P.M.	



Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)
Projected Turning Movements Worksheet
Miles Rd / Girard Blvd

INTERSECTION:

E-W Street: Miles Rd (Driveway "B") (7)

N-S Street: Girard Blvd

Year of Existing Counts

2013

Implementation Year

2020

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

1.00%			1.00%			5.00%			1.00%		
Eastbound (Miles Rd)			Westbound (Miles Rd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
60	0	0	0	0	0	0	60	0	0	95	100
0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	29.53%	0.00%	0.00%
0.00%	0.00%	0.00%	0.08%	0.08%	71.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.39%	34.22%	65.00%	0.00%
0.00%	0.00%	0.00%	0.00%	16.00%	34.84%	0.00%	65.00%	0.00%	0.00%	0.00%	0.00%
0	2	0	0	22	215	0	88	2	280	378	0
60	2	0	0	22	215	0	148	2	280	473	100

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

1.00%			1.00%			5.00%			2.41%		
Eastbound (Miles Rd)			Westbound (Miles Rd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
108	5	5	0	0	0	5	108	5	0	190	5
0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	29.53%	0.00%	0.00%
0.00%	0.00%	0.00%	0.08%	0.08%	71.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.39%	34.22%	65.00%	0.00%
0.00%	0.00%	0.00%	0.00%	16.00%	34.84%	0.00%	65.00%	0.00%	0.00%	0.00%	0.00%
0	1	0	0	85	528	0	345	1	203	113	0
108	6	5	0	85	528	5	453	6	203	303	5

Number of Commercial Trips Generated

Entering Exiting

275 236 A.M.

100% Commercial Development

Number of Office Trips Generated

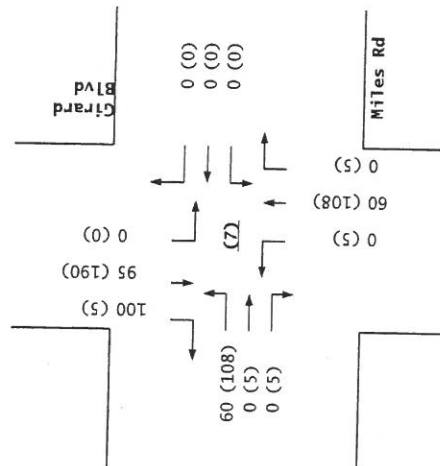
484 483 P.M.

581 136 A.M.

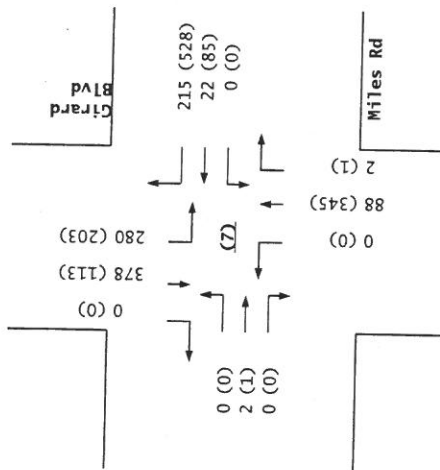
174 531 P.M.

100% Office Development

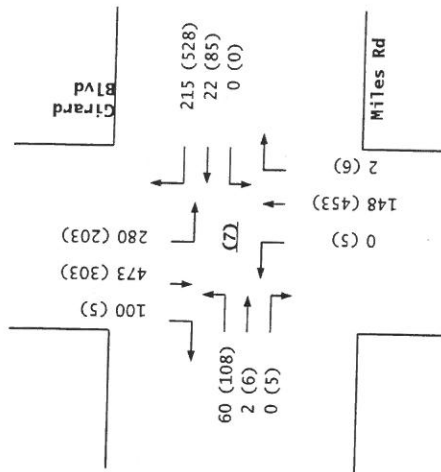
2020
NO BUILD



Trips



2020
BUILD



Miles Rd / Girard Blvd

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)
Projected Turning Movements Worksheet
Driveway "C" / Girard Blvd.

INTERSECTION: E-W Street: Driveway "C" (8)
 N-S Street: Girard Blvd.
 Year of Existing Counts: 2013
 Implementation Year: 2020

Growth Rates

1.00%			1.00%			5.00%			1.00%		
Eastbound (Driveway "C")			Westbound (Driveway "C")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes											
Background Traffic Growth											
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	120	0	0	196	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	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%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	0	35.00%	0.00%	0	35.00%	0.00%
Total AM Peak Hour BUILD Volumes	0	0	0	0	41	0	48	0	174	203	0

Growth Rates

1.00%			1.00%			5.00%			1.00%		
Eastbound (Driveway "C")			Westbound (Driveway "C")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes											
Background Traffic Growth											
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	66	0	0	195	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	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%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Office Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	159	0	186	0	52	61	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	159	0	252	0	52	256	0

	Entering	Exiting	
Number of Residential Trips Generated	0	0	A.M. 100% Residential Development
Number of Commercial Trips Generated	275	236	P.M. 100% Commercial Development
Number of Office Trips Generated	484	483	P.M. 100% Office Development
	581	136	A.M. 100% Office Development
	174	531	P.M.

	Eastbound (Driveway "C")	Westbound (Driveway "C")	Northbound (Girard Blvd.)	Southbound (Girard Blvd.)
2014 AM Peak Hr. Volumes	0	0	0	0
2014 PM Peak Hr. Volumes	0	0	0	0

MRCOG Forecast Volumes Worksheet

Based on 2013 Traffic Count

	Eastbound (Driveway "C")	Westbound (Driveway "C")	Northbound (Girard Blvd.)	Southbound (Girard Blvd.)
2013 AM Link Volume	0	0	0	0
2013 PM Link Volume	0	0	0	0

Based on MRCOG Model (2035 Data Set)

	Eastbound (Driveway "C")	Westbound (Driveway "C")	Northbound (Girard Blvd.)	Southbound (Girard Blvd.)
2015 AM Link Volume	370	327	1248	1049
2015 PM Link Volume	313	1024	1058	1246
2035 AM Link Volume	1458	848	1609	777
2035 PM Link Volume	923	1753	1389	1534

Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2013-2035 AM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2013-2035 PM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

	14.84%	7.97%	1.45%	-1.30%
2015-2035 AM Growth Rates	14.84%	7.97%	1.45%	-1.30%
2015-2035 PM Growth Rates	9.74%	3.56%	1.56%	1.16%

Pass-by Trip Calculations:

AM Pass-by Trips

	Eastbound (Driveway "C")	Westbound (Driveway "C")	Northbound (Girard Blvd.)	Southbound (Girard Blvd.)
Percent Entering	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0
Net AM Passby Trips	0	0	0	0

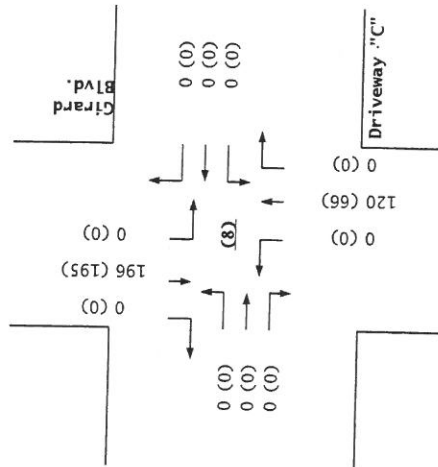
PM Pass-by Trips

	Eastbound (Driveway "C")	Westbound (Driveway "C")	Northbound (Girard Blvd.)	Southbound (Girard Blvd.)
Percent Entering	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0
Net PM Passby Trips	0	0	0	0

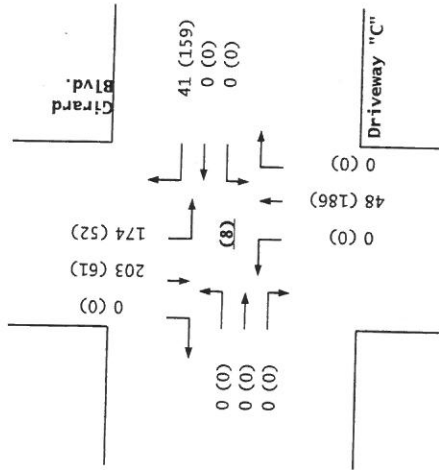
Pass-by Trips

	Entering	Exiting
0 AM	0	0
0 PM	0	0

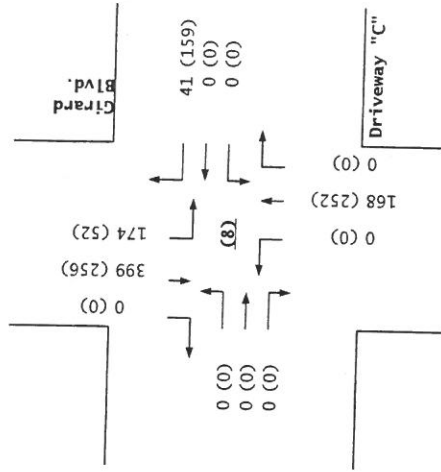
2020
NO BUILD



Trips



2020
BUILD



Driveway "C" / Girard Blvd.

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements Worksheet

Driveway "D" / Girard Blvd.

INTERSECTION: E-W Street: Driveway "D" (9)

N-S Street: Girard Blvd.

Year of Existing Counts 2013

Implementation Year 2020

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

1.00%			1.00%			1.00%			1.00%		
Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	60	0	0	60	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	15.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	27	0	20	0	116	87	0
0	0	0	0	0	27	0	80	0	116	147	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	60	0	0	60	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	15.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	106	0	80	0	35	26	0
0	0	0	0	0	106	0	140	0	35	86	0

Number of Commercial Trips Generated	Entering 275	Exiting 236	A.M.	100% Commercial Development
Number of Office Trips Generated	484	483	P.M.	
	581	136	A.M.	100% Office Development
	174	531	P.M.	

2014 AM Peak Hr. Volumes
2014 PM Peak Hr. Volumes

Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

MRCOG Forecast Volumes Worksheet

Based on 2013 Traffic Count

2013 AM Link Volume	0	0	0	0
2013 PM Link Volume	0	0	0	0

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume	370	327	1248	1049
2015 PM Link Volume	313	1024	1058	1246
2035 AM Link Volume	1468	848	1609	777
2035 PM Link Volume	923	1753	1389	1534

Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2013-2035 AM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2013-2035 PM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

2015-2035 AM Growth Rates	14.84%	7.97%	1.45%	-1.30%
2015-2035 PM Growth Rates	9.74%	3.56%	1.56%	1.16%

Pass-by Trip Calculations:

AM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net AM Passby Trips

Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

PM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

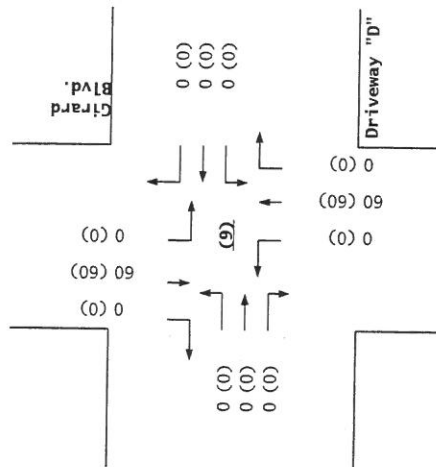
Volume Exiting

Net PM Passby Trips

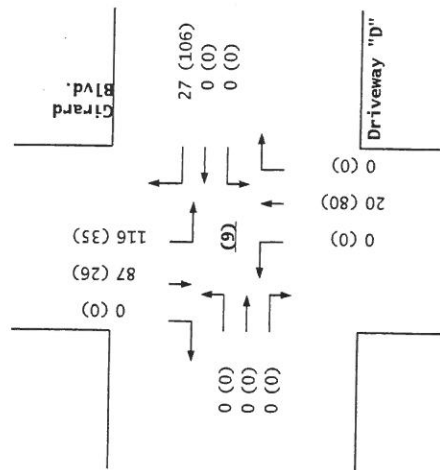
Eastbound (Driveway "D")			Westbound (Driveway "D")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

Entering	Exiting
0	0 AM
0	0 PM

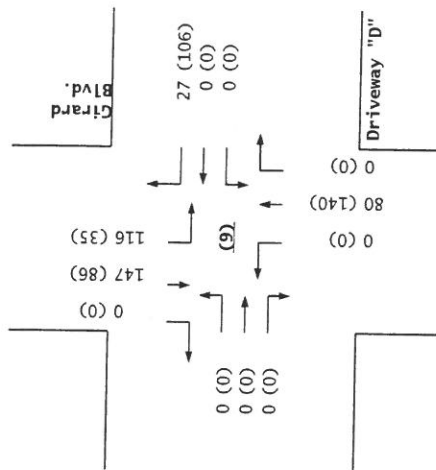
2020
NO BUILD



Trips



2020
BUILD



Driveway "D" / Girard Blvd.

Sunport ACE Project (Gibson Blvd. East of Girard Blvd.)

Projected Turning Movements Worksheet

Driveway "E" / Girard Blvd.

INTERSECTION: E-W Street: Driveway "E" (10)

N-S Street: Girard Blvd.

Year of Existing Counts 2011

Implementation Year 2020

1.00%			1.00%			1.00%			1.00%		
Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	60	0	0	60	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	20	0	0	0	87	0	0
0	0	0	0	0	20	0	60	0	87	60	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Percent Office Trips Generated(Entering)

Percent Office Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	60	0	0	60	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	80	0	0	0	26	0	0
0	0	0	0	0	80	0	60	0	26	60	0

Number of Residential Trips Generated

Number of Commercial Trips Generated

Number of Office Trips Generated

Entering	Exiting	
0	0	A.M.
0	0	P.M.
275	236	A.M.
484	483	P.M.
581	136	A.M.
174	531	P.M.

100% Commercial Development

100% Office Development

2014 AM Peak Hr. Volumes

2014 PM Peak Hr. Volumes

Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

MRCOG Forecast Volumes Worksheet

Based on 2011 Traffic Count

2011 AM Link Volume

2011 PM Link Volume

Based on MRCOG Model (2035 Data Set)

2015 AM Link Volume

2015 PM Link Volume

2035 AM Link Volume

2035 PM Link Volume

0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
370	327	1248	1049								
313	1024	1058	1246								
1468	848	1609	777								
923	1753	1389	1534								

Growth Rate to Apply to Existing Counts to Match 2035 Forecasts

2011-2035 AM Growth Rates

2011-2035 PM Growth Rates

#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Growth Rate to Apply to 2015 Model Volumes to Match 2025 Forecasts

2015-2035 AM Growth Rates

2015-2035 PM Growth Rates

14.84%	7.97%	1.45%	-1.30%
9.74%	3.56%	1.56%	1.16%

Pass-by Trip Calculations:

AM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net AM Passby Trips

Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

PM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

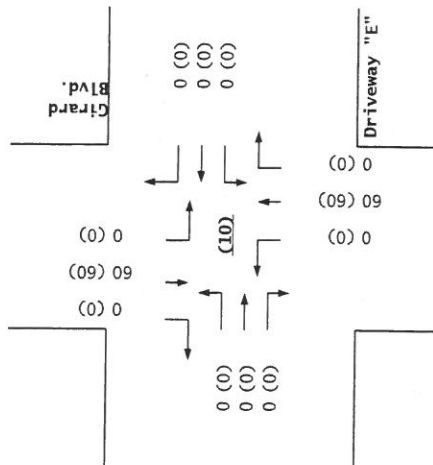
Net PM Passby Trips

Eastbound (Driveway "E")			Westbound (Driveway "E")			Northbound (Girard Blvd.)			Southbound (Girard Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

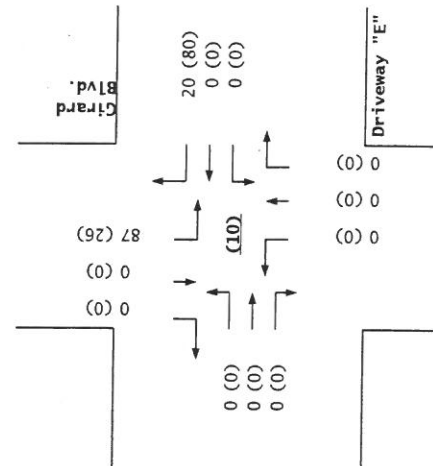
Entering	Exiting
0	0 AM
0	0 PM

Pass-by Trips

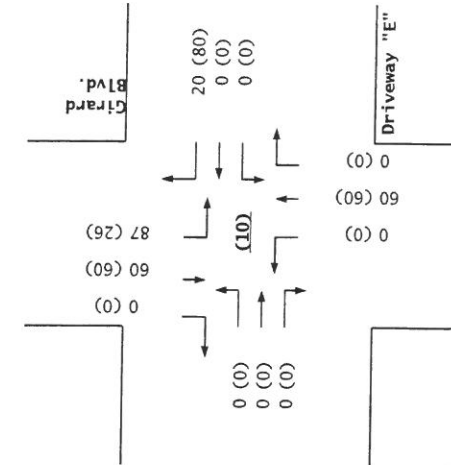
2020
NO BUILD



Trips



2020
BUILD



Driveway "E" / Girard Blvd.

Timings
1: Louisiana Blvd & Gibson Blvd

Area Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Area Configurations	↑↑	↑↑	↑↑	↑↑↑	↑↑↑	↑↑	↑	↑	↑	↑	↑	↑
Volume (vph)	280	763	8	12	205	40	3	5	15	334	45	505
Turn Type	pm+pt	NA	pl+ov	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pl+ov
Protected Phases	7	4	4, 5	8	8	8	2	2	2	1	6	6, 7
Permitted Phases	4											
Detector Phase	7	4	4, 5	8	8	8	2	2	2	1	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	
Minimum Split (s)	10.0	21.0		21.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	
total Split (s)	27.0	49.0		22.0	22.0	22.0	10.0	39.0	39.0	12.0	41.0	
total Split (%)	27.0%	49.0%		22.0%	22.0%	22.0%	10.0%	39.0%	39.0%	12.0%	41.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	C-Min
Effect Green (s)	35.1	35.1	45.8	9.6	9.6	9.6	44.5	38.9	38.9	54.1	44.2	69.8
Actuated g/C Ratio	0.35	0.35	0.46	0.10	0.10	0.10	0.44	0.39	0.39	0.54	0.44	0.70
v/c Ratio	0.63	0.65	0.01	0.18	0.45	0.16	0.00	0.01	0.02	0.25	0.06	0.44
Control Delay	16.2	15.7	1.1	46.5	45.4	1.2	14.7	25.2	0.1	13.2	19.4	2.8
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	16.2	15.7	1.1	46.5	45.4	1.2	14.7	25.2	0.1	13.2	19.4	2.8
LOS	B	B	A	D	D	A	B	C	A	B	B	A
approach Delay												
approach LOS	B			D				A				A
Intersection Summary												
actuated Cycle Length: 100												
offset: 97 (97%), Referenced to phase 2 NBTL and 6 SBTL, Start of Green												
actuated Cycle: 65												
control Type: Actuated-Coordinated												
maximum v/c Ratio: 0.65												
Intersection Signal Delay: 15.0												
Intersection Capacity Utilization 54.0%												
saturation Period (min) 15												

Intersection LOS: B

ICU Level of Service A



Existing Geometry - Both Cases

HCM 2010 Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Movement	↙	↑	↘	↙	↑	↘	↙	↑	↘	↙	↑
Lane Configurations	↙	↑	↘	↙	↑	↘	↙	↑	↘	↙	↑
Volume (veh/h)	280	763	8	12	205	40	3	5	15	334	45
Number	7	4	14	3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0
Peak-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
Parking Bus, Adj	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/hln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Sat Flow Rate, veh/h	295	803	8	13	216	0	3	5	16	352	47
Adj No. of Lanes	1	2	1	1	3	1	1	1	1	2	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	525	1355	721	200	720	224	476	545	463	1329	594
Arrive On Green	0.17	0.39	0.39	0.14	0.14	0.00	0.07	0.30	0.30	0.10	0.32
Adj Sat Flow, veh/h	1757	3505	1568	663	5036	1568	1757	1845	1568	3408	1845
Grp Volume(v), veh/h	295	803	8	13	216	0	3	5	16	352	47
Grp Sat Flow(s),veh/hln	1757	1752	1568	663	1679	1568	1757	1845	1568	1704	1845
Servel. s	9.1	12.5	0.2	1.2	2.6	0.0	0.1	0.1	0.5	4.8	1.2
Cycle Q Clear(g, c), s	9.1	12.5	0.2	1.2	2.6	0.0	0.1	0.1	0.5	4.8	1.2
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	525	1355	721	200	720	224	476	545	463	1329	594
V/C Ratio(X)	0.56	0.59	0.01	0.07	0.30	0.00	0.01	0.01	0.03	0.26	0.08
Initial Cap(c, a), veh/h	788	2248	1120	269	1248	388	476	914	777	1338	968
CM 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(i)	0.67	0.67	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	16.7	0.1	25.7	26.3	0.0	13.7	17.1	17.2	14.0	16.2
Nonuniform Delay (d2), s/veh	0.6	0.3	0.0	0.1	0.2	0.0	0.0	0.0	0.1	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
Initial Q Delay(40%),s/veh	4.4	6.1	0.1	0.2	1.2	0.0	0.0	0.1	0.2	2.2	0.7
BackOfQ(50%) veh/h	18.6	17.0	10.1	25.8	26.6	0.0	13.7	17.1	17.4	14.1	16.5
nSip Delay (d),s/veh	B	B	B	C	C	C	B	B	B	B	B
nSip LOS	B	B	B	C	C	C	B	B	B	B	B
approach Vol, veh/h	1106			229			24			931	
approach Delay, s/veh	17.4			26.5			16.8			16.7	
approach LOS	B			C			B			B	
lane	1	2	3	4	5	6	7	8			
assigned Phs	1	2		4	5	6	7	8			
Its Duration (G+Y+Rc), s	11.8	56.6		31.5	10.0	58.5	16.7	14.8			
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	7.0	34.0		44.0	5.0	36.0	22.0	17.0			
Max Q Clear Time (g, c+1), s	6.8	2.5		14.5	2.1	19.9	11.1	4.6			
Green Ext Time (p, c), s	0.0	2.5		7.5	0.0	2.2	0.6	5.2			
Intersection Summary											
CM 2010 Ctrl Delay	18.0										
CM 2010 LOS	B										

2020 AM Peak NO BUILD Conditions

D:\AT08\PROJECTS_2013\SumPort_ACEISynchro\2020\ANX-BothCases.syn

Timings

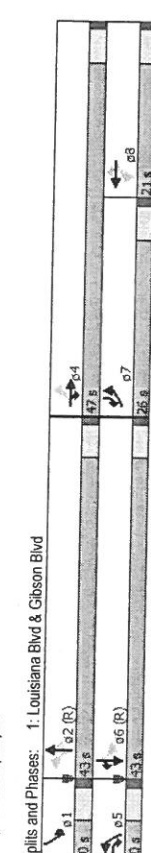
1: Louisiana Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/26/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Volume (vph)	287	775	8	12	257	40	3	5	15	334	45	535
Turn Type	pm+pt	NA	pt+ov	Perm	pm+pt	NA	Perm	pm+pt	NA	pt+ov	Perm	pm+pt
Protected Phases	7	4	4.5	8	8	8	2	2	2	1	6	6.7
Detectable Phase	4											
Deflector Phase	7	4	4.5	8	8	8	2	2	2	1	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	21.0	21.0	21.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	26.0	47.0		21.0	21.0	21.0	10.0	43.0	43.0	10.0	43.0	43.0
Total Split (%)	26.0%	47.0%		21.0%	21.0%	21.0%	10.0%	43.0%	43.0%	10.0%	43.0%	43.0%
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	Lag	Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?												

Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Eff Green (s)	36.9	36.9	47.5	10.7	10.7	10.7	44.1	38.4	38.4	51.8	42.5	68.7
Actuated g/C Ratio	0.37	0.37	0.48	0.11	0.11	0.11	0.44	0.38	0.38	0.52	0.42	0.69
v/c Ratio	0.63	0.63	0.01	0.18	0.50	0.15	0.00	0.01	0.02	0.26	0.06	0.48
Control Delay	21.6	21.2	5.8	45.6	45.2	1.1	15.0	23.4	0.1	14.3	20.6	4.1
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	21.6	21.2	5.8	45.6	45.2	1.1	15.0	23.4	0.1	14.3	20.6	4.1
LOS	C	C	A	D	D	A	B	C	A	B	C	A
Approach Delay	21.2			39.6								
Approach LOS	C			D								

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 10 (10%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 18.5	
Intersection Capacity Utilization 54.8%	
Analysis Period (min) 15	



2020 AM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\ATOBEP\PROJECTS_2013\SunPort_ACESynchro2020ABX-CaseY.syn

HCM 2010 Signalized Intersection Summary

1: Louisiana Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/26/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Volume (veh/h)	287	775	8	12	257	40	3	5	15	334	45	535
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	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	1.00
Parking Bus, Adj	1.00	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	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Flow Rate, veh/h	302	816	8	13	271	0	3	5	16	352	47	563
Adj No. of Lanes	1	2	1	1	3	1	1	1	1	2	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	0.95
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	508	1355	715	195	731	228	477	620	527	1326	620	796
Arrive On Green	0.17	0.39	0.39	0.15	0.15	0.00	0.07	0.34	0.34	0.07	0.34	0.34
Sat Flow, veh/h	1757	3505	1568	655	5036	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	302	816	8	13	271	0	3	5	16	352	47	563
Grp Sat Flow(s), veh/h	1757	1752	1568	655	1679	1568	1757	1845	1568	1704	1845	1568
Cycle Q Clear(g, c), s	9.8	13.4	0.2	1.2	3.5	0.0	0.1	0.1	0.5	4.9	1.3	19.9
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	1.00
Lane Grp Cap(c), veh/h	508	1355	715	195	731	228	477	620	527	1326	620	796
v/c Ratio(X)	0.60	0.60	0.01	0.07	0.37	0.00	0.01	0.01	0.03	0.27	0.08	0.71
Avail Cap(c, a), veh/h	717	2042	1022	245	1118	348	477	973	827	1326	973	1096
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)	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	17.7	10.7	26.9	27.8	0.0	12.8	15.9	16.1	14.2	16.3	13.6
Incr Delay (d2), s/veh	0.7	0.3	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.2	5.2
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 BackOfQ(50%), veh/h	4.8	6.5	0.1	0.2	1.7	0.0	0.0	0.1	0.2	2.3	0.7	9.7
LnGrp Delay(d), s/veh	19.7	18.0	10.7	27.0	28.1	0.0	12.8	16.0	16.2	14.3	16.5	18.9
LnGrp LOS	B	B	B	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h	1126			284			24			962		
Approach Delay, s/veh	18.4			28.1			15.7			17.1		
Approach LOS	B			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	57.1		32.9	10.0	57.1	17.4	15.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	38.0		42.0	5.0	38.0	21.0	16.0				
Max Q Clear Time (g, c+1), s	6.9	2.5		15.4	2.1	21.9	11.8	5.5				
Green Ext Time (p, c), s	0.0	2.7		7.8	0.0	2.3	0.6	5.0				
Intersection Summary												
HCM 2010 Ctrl Delay	19.0											
HCM 2010 LOS	B											

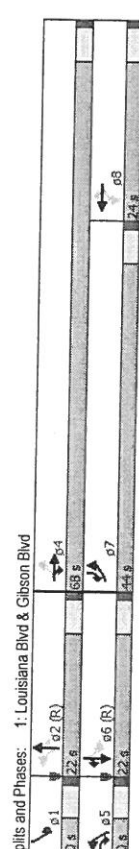
2020 AM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\ATOBEP\PROJECTS_2013\SunPort_ACESynchro2020ABX-CaseY.syn

Timings
1: Louisiana Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
656	273	3	22	816	265	35	61	66	56	23	340
pm-pt	NA	pt-ov	Perm	NA	Perm	pm-pt	NA	Perm	pm-pt	NA	pt-ov
7	4	4.5	8	8	8	2	2	2	2	6	6.7
4	4	4.5	8	8	8	2	2	2	2	6	6.7
7	4	4.5	8	8	8	2	2	2	2	6	6.7
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
44.0	68.0	24.0	24.0	24.0	24.0	22.0	22.0	22.0	22.0	22.0	22.0
44.0%	68.0%	24.0%	24.0%	24.0%	24.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
67.0	67.0	77.1	19.5	19.5	19.5	18.0	12.9	12.9	18.0	12.9	60.4
0.67	0.67	0.77	0.20	0.20	0.20	0.18	0.13	0.13	0.18	0.13	0.60
0.88	0.13	0.00	0.12	0.92	0.54	0.14	0.28	0.23	0.12	0.11	0.37
34.6	6.5	0.0	35.4	54.6	8.4	30.5	41.3	2.5	29.7	37.8	6.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34.6	6.5	0.0	35.4	54.6	8.4	30.5	41.3	2.5	29.7	37.8	6.0
LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
C	A	A	D	D	A	C	D	A	C	D	A
26.3	C	C	43.2	D	D	23.1	C	C	10.9	B	B



2020 PM Peak NO BUILD Conditions
Existing Geometry - Both Cases
D:\TOBE\PROJECTS_2013\SunPort_ACE\Synchro2020PNX-BothCases.syn

HCM 2010 Signalized Intersection Summary
1: Louisiana Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
656	273	3	22	816	265	35	61	66	56	23	340
pm-pt	NA	pt-ov	Perm	NA	Perm	pm-pt	NA	Perm	pm-pt	NA	pt-ov
7	4	4.5	8	8	8	2	2	2	2	6	6.7
4	4	4.5	8	8	8	2	2	2	2	6	6.7
7	4	4.5	8	8	8	2	2	2	2	6	6.7
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
44.0	68.0	24.0	24.0	24.0	24.0	22.0	22.0	22.0	22.0	22.0	22.0
44.0%	68.0%	24.0%	24.0%	24.0%	24.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
67.0	67.0	77.1	19.5	19.5	19.5	18.0	12.9	12.9	18.0	12.9	60.4
0.67	0.67	0.77	0.20	0.20	0.20	0.18	0.13	0.13	0.18	0.13	0.60
0.88	0.13	0.00	0.12	0.92	0.54	0.14	0.28	0.23	0.12	0.11	0.37
34.6	6.5	0.0	35.4	54.6	8.4	30.5	41.3	2.5	29.7	37.8	6.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34.6	6.5	0.0	35.4	54.6	8.4	30.5	41.3	2.5	29.7	37.8	6.0
LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
C	A	A	D	D	A	C	D	A	C	D	A
26.3	C	C	43.2	D	D	23.1	C	C	10.9	B	B

2020 PM Peak NO BUILD Conditions
Existing Geometry - Both Cases
D:\TOBE\PROJECTS_2013\SunPort_ACE\Synchro2020PNX-BothCases.syn

Timings

1: Louisiana Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	684	320	3	22	832	265	35	61	66	56	23	349
Volume (vph)	684	320	3	22	832	265	35	61	66	56	23	349
Turn Type	pm-pt	NA	pt-ov	Perm	NA	pm-pt	NA	Perm	pm-pt	NA	pt-ov	NA
Protected Phases	7	4	4.5	8	8	8	5	2	2	1	6	6.7
Permitted Phases	4	4	4.5	8	8	8	5	2	2	1	6	6.7
Detector Phase	7	4	4.5	8	8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	43.0	69.0	69.0	26.0	26.0	26.0	10.0	21.0	21.0	21.0	21.0	21.0
Total Split (%)	43.0%	69.0%	69.0%	26.0%	26.0%	26.0%	10.0%	21.0%	21.0%	21.0%	21.0%	21.0%
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	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Elct Green (s)	67.2	67.2	77.3	21.0	21.0	21.0	17.8	12.7	12.7	17.8	12.7	59.0
Actuated g/c Ratio	0.67	0.67	0.77	0.21	0.21	0.21	0.18	0.13	0.13	0.18	0.13	0.59
v/c Ratio	0.94	0.15	0.00	0.11	0.87	0.52	0.15	0.29	0.23	0.12	0.11	0.39
Control Delay	44.9	6.5	0.0	33.8	48.2	7.8	30.5	41.4	2.5	29.7	37.8	7.2
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	44.9	6.5	0.0	33.8	48.2	7.8	30.5	41.4	2.5	29.7	37.8	7.2
LOS	D	A	A	C	D	A	C	D	A	C	D	A
Approach Delay	32.6						23.1					11.8
Approach LOS	C						C					B

Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 0 (0%) Referenced to Phase 2 NBTL and 6 SBTL, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.94												
Intersection Signal Delay: 31.1												
Intersection Capacity Utilization 75.1%												
Analysis Period (min) 15												



2020 PM Peak BUILD Conditions

Existing Geometry - Case 'Y' (Driveway on Gibson)
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HCM 2010 Signalized Intersection Summary
1: Louisiana Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	684	320	3	22	832	265	35	61	66	56	23	349
Volume (veh/h)	684	320	3	22	832	265	35	61	66	56	23	349
Number	7	4	4.5	8	8	8	5	2	12	1	6	16
Initial Q (Qb), veh	0	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	1.00
Parking Bus, Adj	1.00	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/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Flow Rate, veh/h	752	352	3	24	914	0	38	67	73	62	25	384
Adj No. of Lanes	1	2	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	761	2238	1080	281	1041	324	304	296	252	624	296	850
Arrive On Green	0.38	0.64	0.64	0.21	0.21	0.00	0.00	0.16	0.16	0.05	0.16	0.16
Sat Flow, veh/h	1757	3505	1568	1012	5036	1568	1757	1845	1568	3408	1845	1568
Grp Volume(v), veh/h	752	352	3	24	914	0	38	67	73	62	25	384
Grp Sat Flow(s), veh/h/ln	1757	1752	1568	1012	1679	1568	1757	1845	1568	1704	1845	1568
Q Serve(g, s)	37.1	4.0	0.1	1.9	17.5	0.0	1.7	3.2	4.1	1.5	1.1	14.8
Cycle Q Clear(g, c), s	37.1	4.0	0.1	1.9	17.5	0.0	1.7	3.2	4.1	1.5	1.1	14.8
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	1.00
Lane Grp Cap(c), veh/h	761	2238	1080	281	1041	324	304	296	252	624	296	850
V/C Ratio(X)	0.99	0.16	0.00	0.09	0.88	0.00	0.12	0.23	0.29	0.10	0.08	0.45
Avail Cap(c, a), veh/h	761	2253	1086	286	1062	331	304	296	252	624	296	850
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)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	7.2	4.8	32.1	38.3	0.0	31.7	36.4	36.8	31.6	35.6	13.8
Incr Delay (d2), s/veh	25.0	0.0	0.0	0.1	8.5	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
%ile BackOfQ(50%), veh/ln	25.5	1.9	0.0	0.5	8.9	0.0	0.8	1.7	2.0	0.7	0.6	6.8
LnGrp Delay(d), s/veh	48.5	7.3	4.8	32.2	46.7	0.0	31.9	38.2	39.7	31.7	36.1	15.5
LnGrp LOS	D	A	A	C	D	C	C	D	D	C	D	B
Approach Vol, veh/h	1107			938			178			471		
Approach Delay, s/veh	35.3			46.4			37.4			18.8		
Approach LOS	D			D			D			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	21.4		68.6	10.0	21.4	43.0	25.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	16.0		64.0	5.0	16.0	38.0	21.0				
Max Q Clear Time (g, c+1), s	3.5	6.1		6.0	3.7	16.8	39.1	19.5				
Green Ext Time (p, c), s	0.0	1.6		10.8	0.0	0.0	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	36.4											
HCM 2010 LOS	D											

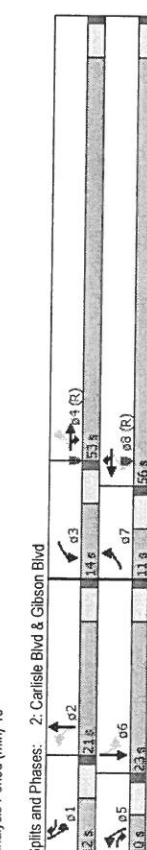
2020 PM Peak BUILD Conditions

Existing Geometry - Case 'Y' (Driveway on Gibson)
D:\ATOBEP\PROJECTS_2013\SunPort_ACE\Synchro2020PBX-CaseY.syn

Timings
2: Carlisle Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/26/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	104	1809	373	115	1013	45	62	8	135	110
Volume (vph)	7	4	45	3	8	81	5	2	1	6
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	45	3	8	81	5	2	1	6
Permitted Phases	7	4	45	3	8	81	5	2	1	6
Detector Phase	4	4	45	3	8	81	5	2	1	6
Switch Phase	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	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	11.0	53.0	14.0	56.0	10.0	21.0	10.0	21.0	12.0	23.0
Total Split (%)	11.0%	53.0%	14.0%	56.0%	10.0%	21.0%	10.0%	21.0%	12.0%	23.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min
Recall Mode	63.9	56.4	66.5	66.4	57.6	69.7	12.8	7.7	16.9	9.7
Act Eff Green (s)	0.64	0.56	0.66	0.66	0.58	0.70	0.13	0.08	0.17	0.10
Actuated g/C Ratio	0.31	0.69	0.34	0.54	0.38	0.04	0.41	0.07	0.63	0.61
v/c Ratio	2.8	4.7	0.7	19.6	14.8	1.6	41.2	28.9	48.3	24.0
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	2.8	4.7	0.7	19.6	14.8	1.6	41.2	28.9	48.3	24.0
Total Delay	A	A	A	A	A	A	D	C	D	C
LOS	A	A	A	A	A	A	D	C	D	C
Approach Delay	4.0	A	14.7	B	B	38.6	D	C	32.3	C
Approach LOS	A	A	B	B	B	D	C	C	D	C
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100										
Offset: 44 (44%), Referenced to phase 4EBTL and 8WBTL, Start of Green										
Natural Cycle: 75										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.69										
Intersection Signal Delay: 10.7										
Intersection Capacity Utilization 70.0%										
Analysis Period (min) 15										



2020 AM Peak NO BUILD Conditions
Existing Geometry - Both Cases
D:\ATOBEP\PROJECTS_2013\SunPort_ACE\Synchro2020\ANX-BothCases.syn

HCM 2010 Signalized Intersection Summary
2: Carlisle Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/26/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (veh/h)	104	1809	373	115	1013	45	62	8	8	135	110	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	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	1.00
Parking Bus, Adj	1.00	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/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	190.0	184.5	184.5	190.0
Adj Flow Rate, veh/h	112	1945	401	124	1089	48	67	9	9	145	118	161
Adj No. of Lanes	1	3	1	1	3	1	1	1	2	0	1	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	375	2649	914	216	2649	949	218	197	170	366	233	209
Arrive On Green	0.06	0.53	0.53	0.06	0.53	0.53	0.06	0.11	0.11	0.08	0.13	0.13
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	1757	1787	1539	1757	1752	1568
Grp Volume(v), veh/h	112	1945	401	124	1089	48	67	9	9	145	118	161
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1757	1679	1568	1757	1752	1573	1757	1752	1568
Q Served, s	2.5	26.2	12.6	2.8	11.5	1.1	2.9	0.4	0.5	6.4	5.5	8.7
Cycle Q Clear(g, c), s	2.5	26.2	12.6	2.8	11.5	1.1	2.9	0.4	0.5	6.4	5.5	8.7
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	1.00
Lane Grp Cap(c), veh/h	375	2649	914	216	2649	949	218	193	174	366	233	209
V/C Ratio(X)	0.30	0.73	0.44	0.57	0.41	0.05	0.31	0.05	0.05	0.40	0.51	0.77
Avail Cap(c, a), veh/h	395	2747	944	296	2919	1033	218	319	286	366	358	321
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)	0.58	0.58	0.58	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.2	16.1	10.3	17.6	12.6	7.1	32.0	35.0	35.0	31.5	35.5	36.9
Incr Delay (d2), s/veh	0.3	1.1	0.9	2.2	0.4	0.1	0.8	0.1	0.1	0.7	1.7	6.0
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	4.0
%ile BackOfQ(50%),veh/h	1.2	12.3	5.7	1.7	5.4	0.5	1.4	0.2	0.2	3.2	2.8	4.1
LnGrp Delay(d),s/veh	9.4	17.2	11.2	19.8	13.0	7.2	32.8	35.1	35.2	32.2	37.2	42.9
LnGrp LOS	A	B	B	B	B	A	C	D	D	C	D	D
Approach Vol, veh/h	2458		1261		13.5		85					424
Approach Delay, s/veh	15.9		13.5		13.5		33.3					37.6
Approach LOS	B		B		B		C					D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	14.7	10.0	63.3	10.0	16.7	10.0	63.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (G _{max}), s	7.0	16.0	9.0	48.0	5.0	18.0	6.0	51.0				
Max Q Clear Time (g, c+1), s	8.4	2.5	4.8	28.2	4.9	10.7	4.5	13.5				
Green Ext Time (p, c), s	0.0	1.4	0.1	18.0	0.0	1.0	0.0	32.0				
Intersection Summary												
HCM 2010 Ctrl Delay	17.7											
HCM 2010 LOS	B											

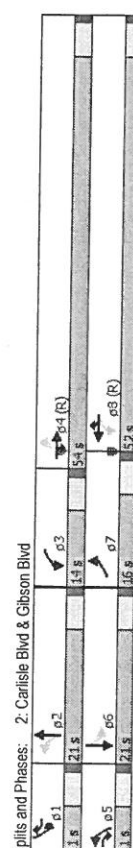
2020 AM Peak NO BUILD Conditions

Existing Geometry - Both Cases
D:\ATOBEP\PROJECTS_2013\SunPort_ACE\Synchro2020\ANX-BothCases.syn

Timings

2: Carlisle Blvd & Gibson Blvd Terry O. Brown, P.E.
3/26/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	163	1874	374	115	1164	45	63	8	135	110
Volume (vph)	7	4	45	3	8	81	5	2	1	6
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	45	3	8	81	5	2	1	6
Permitted Phases	7	4	45	3	8	81	5	2	1	6
Detector Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Switch Phase	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Initial (s)	16.0	54.0	14.0	52.0	11.0	21.0	11.0	21.0	11.0	21.0
Total Split (%)	16.0%	54.0%	14.0%	52.0%	11.0%	21.0%	11.0%	21.0%	11.0%	21.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimizer?	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min	Min	C-Min
Recall Mode	63.9	54.9	65.9	62.1	54.0	65.4	16.6	10.7	17.4	11.1
Act Effect Green (s)	0.64	0.55	0.65	0.62	0.54	0.65	0.17	0.11	0.17	0.11
Actuated g/C Ratio	0.54	0.73	0.35	0.58	0.46	0.05	0.38	0.05	0.57	0.69
v/c Ratio	15.5	8.0	0.6	28.9	15.0	0.5	36.9	26.0	42.8	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	15.5	8.0	0.6	28.9	15.0	0.5	36.9	26.0	42.8	23.1
LOS	B	A	A	C	B	A	D	C	D	C
Approach Delay	7.4	A	15.7	B	34.6	C	28.5	C		
Approach LOS	A									
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100										
Offset: 44 (44%), Referenced to phase 4/EBTL and 8/WBTL, Start of Green										
Natural Cycle: 80										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.73										
Intersection Signal Delay: 12.9										
Intersection Capacity Utilization 74.5%										
Analysis Period (min) 15										



2020 AM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\ATOB\PROJECTS_2013\SunPort_ACE\Synchro2020ABX-CaseY.syn

2: Carlisle Blvd & Gibson Blvd
Terry O. Brown, P.E.
3/26/2014 - Synchro 8

2: Carlisle Blvd & Gibson Blvd
Terry O. Brown, P.E.
3/26/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	163	1874	374	115	1164	45	63	8	135	110	248
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1	16
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
Parking Bus, Adj	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/s	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Flow Rate, veh/h	175	2015	402	124	1252	48	68	9	145	118	267
Peak No. of Lanes	1	3	1	1	3	1	1	2	0	1	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	338	2566	882	201	2491	875	169	284	245	400	297
Cap. veh/h	0.07	0.51	0.06	0.06	0.49	0.49	0.05	0.16	0.16	0.06	0.17
Arrive On Green	1757	5036	1558	1757	5036	1558	1757	1757	1539	1757	1558
Sat Flow, veh/h	1757	5036	1558	1757	5036	1558	1757	1757	1539	1757	1558
Gp Volume(v), veh/h	1757	1679	1558	1757	1679	1558	1757	1757	1539	1757	1558
Gp Sat Flow(s), veh/h	4.5	30.9	14.2	3.2	15.8	1.3	3.0	0.4	0.5	6.0	5.7
Q Serve(g, s)	4.5	30.9	14.2	3.2	15.8	1.3	3.0	0.4	0.5	6.0	5.7
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
Prop In Lane	338	2566	882	201	2491	875	169	284	245	400	297
Lane Gp Cap(c), veh/h	0.52	0.79	0.46	0.62	0.50	0.05	0.40	0.03	0.04	0.36	0.40
V/C Ratio(X)	418	2613	897	269	2506	880	188	297	267	400	297
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
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(I)	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	12.2	18.9	12.1	20.0	16.0	9.5	31.7	33.6	33.6	31.2	34.9
Incr Delay (d2), s/veh	1.2	2.5	1.7	2.7	0.6	0.1	1.5	0.0	0.1	0.6	0.9
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%), s/veh	2.3	14.8	6.5	1.7	7.4	0.6	1.5	0.2	0.2	0.4	2.8
LnGrp Delay(d), s/veh	13.4	21.4	13.8	22.7	16.7	9.6	33.2	33.6	33.7	31.7	35.8
LnGrp LOS	B	C	B	C	B	A	C	C	C	C	D
Approach Vol, veh/h	2592	197	1424	170	170	170	170	170	170	170	170
Approach Delay, s/veh	19.7	B	17.0	B	B	B	B	B	B	B	B
Approach LOS	B										
Timer	1	2	3	4	5	6	7	8			
Assigned Phs	1	2	3	4	5	6	7	8			
Pls Duration (G+Y+Rc), s	11.0	20.0	10.3	58.7	10.0	21.0	11.7	57.3			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	6.0	16.0	9.0	49.0	6.0	16.0	11.0	47.0			
Max Q Clear Time (g, c+H1), s	8.0	2.5	5.2	32.9	5.0	18.0	6.5	17.8			
Green Ext Time (p, c), s	0.0	2.1	0.1	15.2	0.0	0.0	0.2	26.6			
Intersection Summary											
HCM 2010 Ctrl Delay	24.3	C									
HCM 2010 LOS	C										

2020 AM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\ATOB\PROJECTS_2013\SunPort_ACE\Synchro2020ABX-CaseY.syn

2: Carlisle Blvd & Gibson Blvd

Plots and Phases: 2: Carlisle Blvd & Gibson Blvd

A - 65

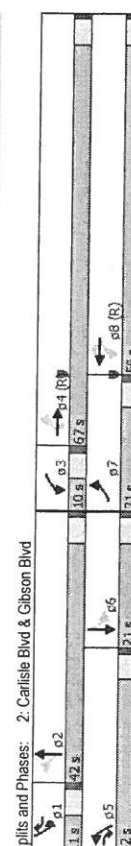
HCM 2010 Signalized Intersection Summary
2: Carlisle Blvd & Gibson Blvd

2020 PM Peak NO BUILD Conditions

Timings
2: Carlisle Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←	←
Volume (vph)	324	1601	13	15	2040	133	572	128	67	6
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	1	5	2	1	6
Permitted Phases	4	4	4	8	8	2	2	6	6	6
Detector Phase	7	4	5	3	8	1	5	2	1	6
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
Minimum Split (s)	10.0	21.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	21.0
Total Split (s)	21.0	67.0	32.0	10.0	56.0	11.0	32.0	42.0	11.0	21.0
Total Split (%)	16.2%	51.5%	24.6%	7.7%	43.1%	8.5%	24.6%	32.3%	8.5%	16.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	Min	C-Min	Min	Min	C-Min	Min	Min	C-Min	Min	C-Min
Act Eff Green (s)	79.5	68.5	100.5	57.0	51.0	62.0	40.5	29.5	14.5	8.5
Actuated g/C Ratio	0.61	0.53	0.77	0.44	0.39	0.46	0.31	0.23	0.11	0.07
v/c Ratio	0.89	0.62	0.01	0.09	1.05	0.17	1.39	0.26	0.44	0.86dr
Control Delay	63.0	23.3	0.0	13.7	74.7	3.1	222.7	25.5	43.4	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	23.3	0.0	13.7	74.7	3.1	222.7	25.5	43.4	27.4
LOS	E	C	A	B	E	A	F	C	D	C
Approach Delay										
Approach LOS										
Intersection Summary										
Cycle Length: 130										
Actuated Cycle Length: 130										
Offset: 0 (0%) Referenced to phase 4 EBT1 and 8 WBT1, Start of Green										
Natural Cycle: 130										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 1.39										
Intersection Signal Delay: 67.9										
Intersection Capacity Utilization 112.7%										
Analysis Period (min) 15										
dr Deflector Right Lane. Record with 1 though lane as a right lane.										



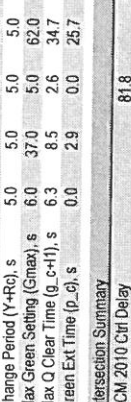
2020 PM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\ATOBEP\PROJECTS_2013\SunPort_ACE\Synchro\2020PBX-CaseY.syn

2: Carlisle Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←	←
Volume (veh/h)	324	1601	13	15	2040	133	572	128	67	6
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	1	5	2	1	6
Permitted Phases	4	4	4	8	8	2	2	6	6	6
Detector Phase	7	4	5	3	8	1	5	2	1	6
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
Minimum Split (s)	10.0	21.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	21.0
Total Split (s)	21.0	67.0	32.0	10.0	56.0	11.0	32.0	42.0	11.0	21.0
Total Split (%)	16.2%	51.5%	24.6%	7.7%	43.1%	8.5%	24.6%	32.3%	8.5%	16.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	Min	C-Min	Min	Min	C-Min	Min	Min	C-Min	Min	C-Min
Act Eff Green (s)	79.5	68.5	100.5	57.0	51.0	62.0	40.5	29.5	14.5	8.5
Actuated g/C Ratio	0.61	0.53	0.77	0.44	0.39	0.46	0.31	0.23	0.11	0.07
v/c Ratio	0.89	0.62	0.01	0.09	1.05	0.17	1.39	0.26	0.44	0.86dr
Control Delay	63.0	23.3	0.0	13.7	74.7	3.1	222.7	25.5	43.4	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	23.3	0.0	13.7	74.7	3.1	222.7	25.5	43.4	27.4
LOS	E	C	A	B	E	A	F	C	D	C
Approach Delay										
Approach LOS										
Intersection Summary										
Cycle Length: 130										
Actuated Cycle Length: 130										
Offset: 0 (0%) Referenced to phase 4 EBT1 and 8 WBT1, Start of Green										
Natural Cycle: 130										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 1.39										
Intersection Signal Delay: 67.9										
Intersection Capacity Utilization 112.7%										
Analysis Period (min) 15										
dr Deflector Right Lane. Record with 1 though lane as a right lane.										



2020 PM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\ATOBEP\PROJECTS_2013\SunPort_ACE\Synchro\2020PBX-CaseY.syn

Timings

3: Girard Blvd & Gibson Blvd Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	78	2031	19	141	1048	49	11	12	73	36	65
Volume (vph)	78	2031	19	141	1048	49	11	12	73	36	65
Turn Type	pm-pt	NA	pm-ov	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	pm-ov
Protected Phases	7	4	5	3	8	8	5	2	1	6	7
Permitted Phases	4	4	4	8	8	8	2	2	6	6	6
Detector Phase	7	4	5	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	11.0	56.0	10.0	13.0	58.0	58.0	10.0	21.0	10.0	21.0	11.0
Total Split (%)	11.0%	56.0%	10.0%	13.0%	58.0%	58.0%	10.0%	21.0%	10.0%	21.0%	11.0%
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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimizer?											
Recall Mode	Min	C-Min	None	Min	C-Min	C-Min	None	Min	None	Min	Min
Act Eff Green (s)	66.1	59.1	69.2	72.9	62.6	62.6	11.5	7.5	12.6	9.5	21.4
Actuated g/C Ratio	0.66	0.59	0.69	0.73	0.63	0.63	0.12	0.08	0.13	0.10	0.21
v/c Ratio	0.24	0.76	0.02	0.61	0.37	0.05	0.07	0.37	0.47	0.23	0.18
Control Delay	6.6	18.9	0.1	18.4	10.0	2.0	34.1	14.3	45.4	45.3	8.2
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	6.6	18.9	0.1	18.4	10.0	2.0	34.1	14.3	45.4	45.3	8.2
LOS	A	B	A	B	A	A	C	B	D	D	A
Approach Delay	18.2			10.6				16.1		31.5	
Approach LOS	B			B				B		C	
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length: 100											
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.76											
Intersection Signal Delay: 16.2											
Intersection Capacity Utilization 70.3%											
Analysis Period (min) 15											
Spills and Phases: 3: Girard Blvd & Gibson Blvd											

2020 AM Peak NO BUILD Conditions

D:\ATOBEP\PROJECTS_2013\SurPort_ACEISynchro\2020\ANX-BothCases.syn
Existing Geometry - Both Cases

HCM 2010 Signalized Intersection Summary 3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (veh/h)	78	2031	19	141	1048	49	11	12	97	73	36	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	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	1.00
Parking Bus Adj	1.00	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/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	190.0	184.5	184.5	184.5
Adj Flow Rate, veh/h	87	2257	21	157	1164	54	12	13	108	81	40	72
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	399	2833	905	222	2856	889	229	169	152	214	252	303
Arrive On Green	0.06	0.56	0.56	0.08	0.75	0.75	0.01	0.10	0.10	0.05	0.14	0.14
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	1757	1752	1568	1757	1845	1568
Grp Volume(V), veh/h	87	2257	21	157	1164	54	12	13	108	81	40	72
Grp Sat Flow(s), veh/h/ln	1757	1679	1568	1757	1679	1568	1757	1752	1568	1757	1845	1568
Q Serv(g, s)	1.8	31.6	0.5	3.3	7.3	0.8	0.5	0.6	5.9	3.6	1.7	3.4
Cycle Q Clear(g, c), s	1.8	31.6	0.5	3.3	7.3	0.8	0.5	0.6	5.9	3.6	1.7	3.4
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	1.00
Lane Grp Cap(c), veh/h	399	2833	905	222	2856	889	229	169	152	214	252	303
V/C Ratio(X)	0.22	0.80	0.02	0.71	0.41	0.06	0.05	0.08	0.71	0.38	0.16	0.24
Avail Cap(c, a), veh/h	419	2892	923	273	3006	936	302	316	283	217	332	371
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(f)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.1	15.4	8.1	18.6	5.6	4.8	35.3	36.5	38.9	33.3	33.8	30.3
Incr Delay (d2), s/veh	0.3	2.4	0.0	5.9	0.4	0.1	0.1	0.2	6.1	1.1	0.3	0.4
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 BackOfQ(50%),veh/ln	0.9	15.1	0.2	2.5	3.4	0.4	0.3	0.3	2.8	1.8	0.9	1.5
LnGrp Delay(d),s/veh	7.4	17.8	8.1	24.5	6.0	4.9	35.4	36.7	45.0	34.4	34.1	30.7
LnGrp LOS	A	B	A	C	A	A	D	D	D	C	C	C
Approach Vol, veh/h	2365			1375			133			193		
Approach Delay, s/veh	17.4			8.1			43.3			32.9		
Approach LOS	B			A			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	13.6	10.4	66.2	6.3	17.2	10.0	66.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	16.0	8.0	51.0	5.0	16.0	6.0	53.0				
Max Q Clear Time (g_c+1), s	5.6	7.9	5.3	33.6	2.5	5.4	3.8	9.3				
Green Ext Time (p_c), s	0.0	0.6	0.1	16.4	0.0	0.8	0.0	38.0				
Intersection Summary												
HCM 2010 Ctrl Delay	15.8											
HCM 2010 LOS	B											

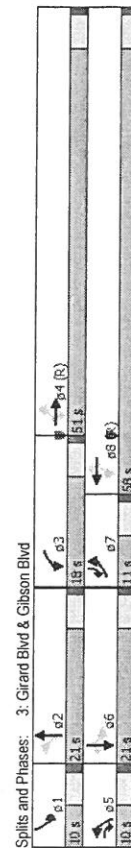
2020 AM Peak NO BUILD Conditions

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Existing Geometry - Both Cases

Timings
3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	78	2079	466	284	1048	49	183	85	112	103	65
Volume (vph)	78	2079	466	284	1048	49	183	85	112	103	65
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	5	2	1	6	7	6
Permitted Phases	4	4	4	8	8	8	2	2	1	6	7
Detector Phase	7	4	5	3	8	8	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	11.0	51.0	10.0	18.0	58.0	58.0	21.0	10.0	21.0	11.0	11.0
Total Split (%)	11.0%	51.0%	10.0%	18.0%	58.0%	58.0%	21.0%	10.0%	21.0%	11.0%	11.0%
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	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	Min	C-Min	None	Min	C-Min	None	Min	C-Min	None	Min	C-Min
Act Eff Green (s)	52.7	46.0	56.0	56.9	56.9	16.5	11.5	16.5	11.5	23.1	23.1
Actuated g/c Ratio	0.53	0.46	0.56	0.68	0.57	0.57	0.16	0.12	0.16	0.12	0.23
v/c Ratio	0.28	1.00	0.51	0.83	0.41	0.06	0.93	0.67	0.77	0.54	0.16
Control Delay	9.5	45.7	6.5	36.3	13.1	1.4	82.7	27.7	64.9	50.6	1.2
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	9.5	45.7	6.5	36.3	13.1	1.4	82.7	27.7	64.9	50.6	1.2
LOS	A	D	A	D	B	A	F	C	E	D	A
Approach Delay											
Approach LOS											
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length: 100											
Offset: 5 (5%), Referenced to phase 4 ERTL and 8 WBTTL Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 1.00											
Intersection Signal Delay: 33.3											
Intersection Capacity Utilization 88.3%											
Analysis Period (min) 15											



HCM 2010 Signalized Intersection Summary
3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

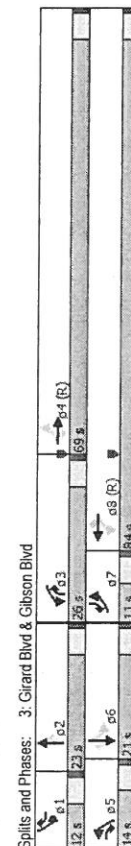
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	78	2079	466	284	1048	49	183	85	223	112	103	65
Volume (veh/h)	78	2079	466	284	1048	49	183	85	223	112	103	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	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	1900	1845	1845	1845
Adj Flow Rate, veh/h	87	2310	518	316	1164	54	203	94	248	124	114	72
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	361	2317	800	301	2719	847	283	280	251	162	295	329
Arrive On Green	0.05	0.46	0.17	0.72	0.72	0.72	0.05	0.16	0.16	0.05	0.16	0.16
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	1757	1752	1568	1757	1845	1568
Grp Sat Flow(s), veh/h	87	2310	518	316	1164	54	203	94	248	124	114	72
Grp Sat Flow(s), veh/h	1757	1679	1568	1757	1679	1568	1757	1752	1568	1757	1845	1568
Q Servg, s	2.6	45.8	24.2	13.0	9.4	1.0	5.0	4.8	15.8	5.0	5.5	3.8
Cycle Q Clear(g, c), s	2.6	45.8	24.2	13.0	9.4	1.0	5.0	4.8	15.8	5.0	5.5	3.8
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	1.00
Lane Grp Cap(c), veh/h	361	2317	800	301	2719	847	283	280	251	162	295	329
V/C Ratio(X)	0.24	1.00	0.65	1.05	0.43	0.06	0.72	0.34	0.99	0.77	0.39	0.22
Avail Cap(c, a), veh/h	379	2317	800	301	2719	847	283	280	251	162	295	329
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	12.6	26.9	17.9	30.4	7.8	6.6	37.3	41.9	36.9	37.6	32.7	32.7
Incr Delay (d2), s/veh	0.3	18.0	4.0	66.0	0.5	0.1	8.3	0.7	53.5	19.3	0.8	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
%ile BackOfQ(50%), veh/h	1.2	24.8	11.3	13.7	4.3	0.5	3.8	2.4	10.5	1.9	2.9	1.7
LnGrp Delay(d), s/veh	13.0	45.0	22.0	96.4	8.3	6.8	47.2	38.0	95.4	56.2	38.4	33.0
LnGrp LOS	B	D	C	F	A	A	D	D	F	E	D	C
Approach Vol, veh/h	2915			1534			545				310	
Approach Delay, s/veh	39.9			26.4			67.5				44.3	
Approach LOS	D			C			E				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	21.0	18.0	51.0	10.0	21.0	10.0	59.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	16.0	13.0	46.0	5.0	16.0	6.0	53.0				
Max Q Clear Time (g, c+1), s	7.0	17.8	15.0	47.8	7.0	17.8	4.6	11.4				
Green Ext Time (p, c), s	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				39.1								
HCM 2010 LOS				D								

2020 AM Peak BUILD Conditions
Existing Geometry - Case "Y" (Driveway on Gibson)
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Timings
3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	78	2079	466	284	1048	49	183	85	223	112	103	65
Volume (vph)	78	2079	466	284	1048	49	183	85	223	112	103	65
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	8	2	6	6	6	6	6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.0	69.0	14.0	26.0	84.0	12.0	14.0	23.0	26.0	12.0	21.0	11.0
Total Split (%)	8.5%	53.1%	10.8%	20.0%	64.6%	9.2%	10.8%	17.7%	20.0%	9.2%	16.2%	8.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead/Lag Optimize?												
Recall Mode	Min	C-Min	None	Min	C-Min	None	Min	C-Min	None	Min	C-Min	None
Act Effect Green (s)	72.6	66.0	80.3	92.9	81.3	93.6	9.3	14.8	41.7	20.1	12.8	24.4
Actuated g/C Ratio	0.56	0.51	0.62	0.71	0.63	0.72	0.07	0.11	0.32	0.15	0.10	0.19
v/c Ratio	0.29	0.90	0.49	0.90	0.37	0.05	0.84	0.24	0.46	0.55	0.63	0.19
Control Delay	10.6	35.6	9.2	49.3	9.3	1.5	87.4	52.9	28.8	54.9	71.1	4.4
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	10.6	35.6	9.2	49.3	9.3	1.5	87.4	52.9	28.8	54.9	71.1	4.4
LOS	B	D	A	D	A	A	F	D	C	D	E	A
Approach Delay												
Approach LOS												
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 129 (99%), Referenced to phase 4 EBT, and 8 WBT, Start of Green												
Natural Cycle: 100												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.90												
Intersection Signal Delay: 30.1												
Intersection Capacity Utilization 81.3%												
Analysis Period (min) 15												



3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	78	2079	466	284	1048	49	183	85	223	112	103	65
Volume (veh/h)	78	2079	466	284	1048	49	183	85	223	112	103	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (veh)	0	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	1.00
Adj Sat Flow, veh/h	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Flow Rate, veh/h	87	2310	518	316	1164	54	203	94	248	124	114	72
Adj No. of Lanes	1	3	1	1	3	1	2	1	2	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	349	2488	864	339	3083	1045	237	488	466	269	228	257
Arrive On Green	0.04	0.49	0.16	0.61	0.61	0.61	0.07	0.14	0.14	0.05	0.12	0.12
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	3408	3505	1568	1757	1845	1568
Gp Volume (v), veh/h	87	2310	518	316	1164	54	203	94	248	124	114	72
Gp Sat Flow (v), veh/h	1757	1679	1568	1757	1679	1568	1704	1752	1568	1757	1845	1568
Q Serve (g, s)	3.1	55.4	27.8	18.3	15.1	1.5	7.6	3.1	17.1	7.0	7.5	5.2
Cycle Q Clear (g, c), s	3.1	55.4	27.8	18.3	15.1	1.5	7.6	3.1	17.1	7.0	7.5	5.2
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	1.00
Lane Grp Cap (c), veh/h	349	2488	864	339	3083	1045	237	488	466	269	228	257
V/C Ratio (X)	0.25	0.93	0.59	0.93	0.38	0.05	0.86	0.19	0.53	0.46	0.50	0.28
Avail Cap (c, a), veh/h	361	2493	885	347	3083	1045	237	488	466	269	228	257
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	14.8	30.6	18.4	43.3	12.7	7.5	59.5	49.2	37.9	47.2	52.9	47.4
Incr Delay (d2), s/veh	0.4	7.6	2.8	31.0	0.4	0.1	25.1	0.2	1.2	1.2	1.7	0.6
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 BackOfQ (50%), veh/h	1.6	27.4	12.7	14.1	7.0	0.7	4.4	1.5	7.5	0.7	3.9	2.3
LnGrp Delay (d), s/veh	15.1	38.2	21.2	74.3	13.0	7.6	84.6	49.4	39.1	48.4	54.6	48.0
LnGrp LOS	B	D	C	E	B	A	F	D	D	D	D	D
Approach Vol, veh/h	2915				1534			545				310
Approach Delay, s/veh	34.5				25.4			57.8				50.6
Approach LOS	C				C			E				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R), s	12.0	23.0	25.4	69.6	14.0	21.0	10.2	84.8				
Change Period (Y+R), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	18.0	21.0	64.0	9.0	16.0	6.0	79.0				
Max Q Clear Time (g, c+1), s	9.0	19.1	20.3	57.4	9.6	9.5	5.1	17.1				
Green Ext Time (g, c), s	0.0	0.0	0.1	6.5	0.0	1.3	0.0	54.8				
Intersection Summary												
HCM 2010 Ctrl Delay								35.2				
HCM 2010 LOS								D				

2020 AM Peak BUILD Conditions Mitigated
D:\ATOB\PROJECTS_2013\SunPort_ACE\Synchro\2020ABX-CaseY_Mitigated.syn
Mitigated Geometry - Case 'Y' (Driveway on Gibson)

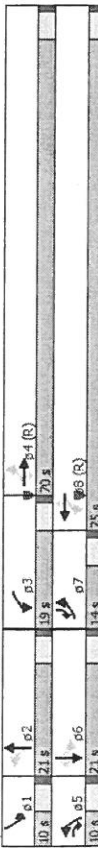
Timings

3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	111	1523	8	152	2344	141	16	50	71	35	120
Volume (vph)	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov
Turn Type	7	4	5	3	8	8	5	2	1	6	7
Protected Phases	4	4	4	8	8	8	2	2	1	6	6
Permitted Phases	7	4	5	3	8	8	5	2	1	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
Switch Phase	10.0	21.0	10.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0	10.0
Minimum Initial (s)	14.0	70.0	10.0	19.0	75.0	75.0	10.0	21.0	10.0	21.0	14.0
Minimum Split (s)	11.7%	58.3%	8.3%	15.8%	62.5%	62.5%	8.3%	17.5%	8.3%	17.5%	11.7%
Total Split (%)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	C-Min	None	Min	C-Min	None	Min	C-Min	None	Min	C-Min
Recall Mode	87.4	78.2	88.3	90.5	79.8	79.8	12.1	8.1	13.2	10.1	24.2
Act Ert Green (s)	0.73	0.65	0.74	0.75	0.66	0.66	0.10	0.07	0.11	0.08	0.20
Actuated g/C Ratio	0.62	0.50	0.01	0.58	0.76	0.14	0.11	0.60	0.62	0.25	0.35
Control Delay	35.9	12.7	0.0	17.5	17.1	3.7	44.1	22.6	67.1	55.2	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS	D	B	A	B	A	B	A	D	C	E	C
Approach Delay	14.2	24.2	16.4	24.2	16.4	24.2	16.4	24.2	16.4	24.2	16.4
Approach LOS	B	B	B	B	B	B	B	B	B	B	B
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 0 (0%) Referenced to phase 4 EBT and 8 WBT, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.76											
Intersection Signal Delay: 17.2											
Intersection Capacity Utilization 78.5%											
Analysis Period (min) 15											

Splits and Phases: 3: Girard Blvd & Gibson Blvd



HCM 2010 Signalized Intersection Summary
3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	111	1523	8	152	2344	141	16	50	71	35	120
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1	6
Initial Q (Qp), 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
Parking Bus, Adj	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/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Flow Rate, veh/h	121	1655	9	165	2548	153	17	54	163	77	130
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	165	3033	973	281	3086	961	242	214	191	164	273
Arrive On Green	0.04	0.60	0.60	0.06	0.61	0.61	0.02	0.12	0.12	0.04	0.15
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	1757	1752	1568	1757	1568
Grp Volume (v), veh/h	121	1655	9	165	2548	153	17	54	163	77	130
Grp Sat Flow (s), veh/h/ln	1757	1679	1568	1757	1679	1568	1757	1752	1568	1757	1568
Q Serve (g, s)	3.0	22.1	0.2	4.0	44.9	4.7	1.0	3.2	11.5	4.3	2.0
Cycle Q Clear (g, c), s	3.0	22.1	0.2	4.0	44.9	4.7	1.0	3.2	11.5	4.3	2.0
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	165	3033	973	281	3086	961	242	214	191	164	273
V/C Ratio (X)	0.73	0.55	0.01	0.59	0.83	0.16	0.07	0.25	0.85	0.47	0.14
Avail Cap (c, a), veh/h	226	3033	973	401	3111	969	287	247	221	164	273
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 (f)	1.00	1.00	1.00	0.13	0.13	0.13	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	13.4	8.2	12.2	17.2	9.4	42.3	45.1	48.7	41.8	42.0
Incr Delay (d2), s/veh	7.7	0.7	0.0	0.3	0.4	0.0	0.1	0.6	23.6	2.1	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
%ile BackOfQ (50%) veh/h	2.6	10.3	0.1	2.2	20.6	2.0	0.5	1.6	8.2	2.2	1.1
LnGrp Delay (d), s/veh	33.5	14.1	8.2	12.5	17.5	9.5	42.4	45.7	72.3	43.9	42.2
LnGrp LOS	C	B	A	B	B	A	D	E	D	D	D
Approach Vol, veh/h	1785	15.4	15.4	1785	15.4	15.4	1785	15.4	15.4	15.4	15.4
Approach Delay, s/veh	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
Approach LOS	B	B	B	B	B	B	B	B	B	B	B
Timer	1	2	3	4	5	6	7	8			
Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s	10.0	18.8	11.3	79.9	7.1	21.7	10.0	81.1			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	5.0	16.0	14.0	65.0	5.0	16.0	9.0	70.0			
Max Q Clear Time (g, c+1), s	6.3	13.5	6.0	24.1	3.0	10.3	5.0	46.9			
Green Ext Time (p, c), s	0.0	0.3	0.2	39.3	0.0	0.9	0.1	22.5			
Intersection Summary											
HCM 2010 Ctrl Delay	19.7										
HCM 2010 LOS	B										

2020 PM Peak NO BUILD Conditions

Existing Geometry - Both Cases
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2020 PM Peak NO BUILD Conditions

Existing Geometry - Both Cases
D:\ATOBEP\PROJECTS_2013\SunPort_ACE\Synchro\2020PNX-BothCases.syn

Timings

3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	111	1608	203	195	2344	141	544	213	139	113	120
Volume (vph)	7	4	5	3	8	8	2	2	1	6	7
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	perm	pm+pt	NA	pm+ov	NA	pm+ov
Protected Phases	4	4	4	4	4	8	8	2	6	6	6
Permitted Phases	7	4	5	3	8	8	5	2	1	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
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	10.0	21.0	21.0	10.0	21.0	10.0	21.0	10.0	10.0
Minimum Split (s)	10.0	54.0	29.0	16.0	60.0	60.0	29.0	33.0	17.0	21.0	10.0
Total Split (%)	8.3%	45.0%	24.2%	13.3%	50.0%	50.0%	24.2%	27.5%	14.2%	17.5%	8.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	C-Min	None	Min	C-Min	None	Min	None	Min	None	Min
Recall Mode	57.6	50.1	79.1	68.0	55.7	55.7	41.8	25.7	24.0	12.8	25.3
Act Eff Green (s)	0.48	0.42	0.55	0.57	0.46	0.46	0.35	0.21	0.20	0.11	0.21
Actuated g/C Ratio	0.71	0.83	0.20	0.84	1.09	1.30	0.72	0.63	0.62	0.29	0.29
Control Delay	45.0	35.8	1.8	54.1	61.1	61.1	183.1	37.1	41.1	64.9	5.3
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	45.0	35.8	1.8	54.1	61.1	61.1	183.1	37.1	41.1	64.9	5.3
LOS	D	D	A	D	E	A	F	D	D	E	A
Approach Delay	32.7				57.5			110.9			
Approach LOS	C				E			F			D
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 118 (98%), Referenced to phase 4 EBT, Start of Green											
Natural Cycle: 130											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 1.30											
Intersection Signal Delay: 57.8											
Intersection Capacity Utilization 104.2%											
Analysis Period (min) 15											
Splits and Phases: 3: Girard Blvd & Gibson Blvd											
	17.5 s	33 s	16 s	16 s	54 s	54 s	16 s	16 s	54 s	54 s	16 s
	17.5 s	33 s	16 s	16 s	54 s	54 s	16 s	16 s	54 s	54 s	16 s
	17.5 s	33 s	16 s	16 s	54 s	54 s	16 s	16 s	54 s	54 s	16 s

2020 PM Peak BUILD Conditions

Existing Geometry - Case "Y" (Driveway on Gibson)
D:\AT08\PROJECTS_2013\SunPort_ACE\Synchro2020PBX-CaseY.syn

HCM 2010 Signalized Intersection Summary
3: Girard Blvd & Gibson Blvd

Terry O. Brown, P.E.
3/27/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBR
Lane Configurations	111	1608	203	195	2344	141	544	213	139	113
Volume (veh/h)	7	4	14	3	8	18	5	2	12	1
Number	0	0	0	0	0	0	0	0	0	0
Initial Q (Qb), veh	100	100	100	100	100	100	100	100	100	100
Ped-Bike Adj (A _p , pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	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/ln	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Flow Rate, veh/h	121	1748	221	212	2548	153	591	232	346	151
Adj No. of Lanes	1	3	1	1	3	1	1	2	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	135	2114	976	236	2336	727	483	412	368	235
Arrive On Green	0.04	0.42	0.17	0.93	0.93	0.20	0.23	0.23	0.09	0.12
Sat Flow, veh/h	1757	5036	1568	1757	5036	1568	1757	1752	1588	1757
Gip Volume (v), veh/h	121	1748	221	212	2548	153	591	232	346	151
Gip Sat Flow (s), veh/h/ln	1757	1679	1568	1757	1679	1568	1757	1752	1588	1757
Q Serve (g, s)	4.7	36.6	7.4	8.2	55.0	1.0	24.0	13.8	25.7	8.8
Cycle Q Clear (g, s)	4.7	36.6	7.4	8.2	55.0	1.0	24.0	13.8	25.7	8.8
Prop in Lane	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	135	2114	976	236	2336	727	483	412	368	235
V/C Ratio (X)	0.90	0.83	0.23	0.90	1.09	0.21	1.22	0.56	0.94	0.64
Avail Cap (c, a), veh/h	135	2114	976	248	2336	727	483	414	370	253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Delay (d), s/veh	28.9	30.6	9.8	23.5	4.3	2.3	37.8	40.0	44.5	40.9
Inc Delay (d2), s/veh	48.1	3.9	0.5	30.8	48.7	0.7	17.6	1.7	31.6	4.9
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
% BackOfQ (50%), veh/h	4.1	17.6	3.3	5.9	30.3	0.5	19.9	6.9	14.4	4.6
LnGrp Delay (d), s/veh	77.0	34.4	10.4	54.3	53.0	3.0	155.4	41.8	76.1	45.8
LnGrp LOS	E	C	B	D	F	A	F	D	E	D
Approach Vol, veh/h	2090			2913			1169		404	
Approach Delay, s/veh	34.4			50.5			109.4		47.6	
Approach LOS	C			D			F		D	
Timer	1	2	3	4	5	6	7	8		
Assigned Pths	1	2	3	4	5	6	7	8		
Pth Duration (G+Y+Rc), s	15.7	32.9	15.2	56.2	29.0	19.6	10.0	61.4		
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s	12.0	28.0	11.0	49.0	24.0	16.0	5.0	55.0		
Max Q Clear Time (g_c+1), s	10.8	27.7	10.2	38.6	26.0	11.0	6.7	57.0		
Green Ext Time (p_c), s	0.0	0.2	0.1	10.3	0.0	2.1	0.0	0.0		
Intersection Summary										
HCM 2010 Ctrl Delay										
HCM 2010 LOS										

2020 PM Peak BUILD Conditions

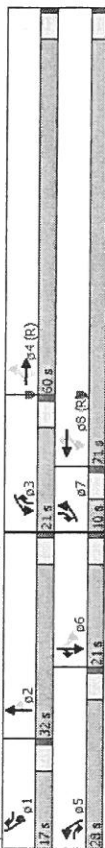
Existing Geometry - Case "Y" (Driveway on Gibson)
D:\AT08\PROJECTS_2013\SunPort_ACE\Synchro2020PBX-CaseY.syn

Timings

3: Girard Blvd & Gibson Blvd Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	111	1608	203	195	2344	141	544	213	329	139	113	120
Volume (vph)	7	4	5	3	8	1	5	2	3	1	6	6.7
Turn Type	pm-pt	NA	pm-ov	pm-pt	NA	pm-ov	pm-pt	NA	pm-ov	pm-pt	NA	pt-ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	6.7
Permitted Phases	4	4	4	8	8	8	1	5	2	3	1	6
Detector Phase	7	4	5	3	8	1	5	2	3	1	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	5.0
Minimum Initial (s)	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0	10.0	10.0	21.0	21.0
Minimum Split (s)	10.0	60.0	28.0	21.0	71.0	17.0	28.0	32.0	21.0	17.0	21.0	21.0
Total Split (s)	7.7%	46.2%	21.5%	16.2%	54.6%	13.1%	21.5%	24.6%	16.2%	13.1%	16.2%	16.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	Min	C-Min	Min	Min	C-Min	Min	Min	Min	Min	C-Min	Min	Min
Act/Ert Green (s)	66.7	59.1	87.1	77.3	66.1	82.6	23.0	24.9	44.4	24.7	13.3	25.9
Actuated g/C Ratio	0.51	0.45	0.67	0.59	0.51	0.64	0.18	0.19	0.34	0.19	0.10	0.20
v/c Ratio	0.77	0.76	0.20	0.84	0.99	0.15	0.98	0.35	0.62	0.56	0.65	0.31
Control Delay	56.8	33.1	2.5	62.1	27.6	0.3	86.0	46.7	33.4	42.7	72.0	7.3
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	56.8	33.1	2.5	62.1	27.6	0.3	86.0	46.7	33.4	42.7	72.0	7.3
LOS	E	C	A	E	C	A	F	D	C	D	E	A
Approach Delay	31.2											
Approach LOS	C											
Intersection Summary												
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 0.0% (Referenced to phase 4:EBTL and 8:WRTL Start of Green)												
Natural Cycle: 120												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.99												
Intersection Signal Delay: 36.3												
Intersection Capacity Utilization 89.6%												
Analysis Period (min) 15												

Spillback and Phases: 3: Girard Blvd & Gibson Blvd



HCM 2010 Signalized Intersection Summary

3: Girard Blvd & Gibson Blvd Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	111	1608	203	195	2344	141	544	213	329	139	113	120
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	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
Adj Sat Flow, veh/h/ln	121	1748	221	212	2548	153	591	232	358	151	123	130
Adj Flow Rate, veh/h	1	3	1	1	3	3	3	3	3	3	3	3
Adj No. of Lanes	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Peak Hour Factor	3	3	3	3	3	3	3	3	3	3	3	3
Percent Heavy Veh. %	0.04	0.46	0.46	0.16	1.00	1.00	0.18	0.21	0.21	0.09	0.12	0.12
Arrive On Green	1757	5036	1568	1757	5036	1568	3408	3505	1568	1757	1845	1568
Sat Flow, veh/h	121	1748	221	212	2548	153	591	232	358	151	123	130
Grp Volume(v), veh/h	1757	1679	1568	1757	1679	1568	1704	1752	1568	1757	1845	1568
Grp Sat Flow(s), veh/h/ln	4.7	36.7	7.6	8.2	0.0	0.0	22.0	7.1	26.7	9.5	8.0	9.7
Q Serve(g_s), s	4.7	36.7	7.6	8.2	0.0	0.0	22.0	7.1	26.7	9.5	8.0	9.7
Cycle Q Clear(g_c), s	100	100	100	100	100	100	100	100	100	100	100	100
Prop in Lane	154	2316	1003	239	2531	930	613	740	460	314	225	252
Lane Grp Cap(c), veh/h	0.79	0.75	0.22	0.89	1.01	0.16	0.96	0.31	0.78	0.48	0.55	0.52
VC Ratio(x)	154	2316	1003	315	2601	952	613	740	460	320	231	258
Avail Cap(c_a), veh/h	100	100	100	100	100	100	100	100	100	100	100	100
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), sveh	26.5	28.5	9.6	24.2	0.0	0.0	52.0	42.6	41.4	43.4	52.8	49.1
Incr Delay (d2), sveh	22.9	2.3	0.5	20.7	19.5	0.4	27.4	0.2	8.3	1.1	2.6	1.7
Initial Q Delay(d3), sveh	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 BackOfQ(50%) veh/h	3.2	17.5	3.4	5.3	4.6	0.1	12.7	3.5	12.6	4.7	4.3	4.3
LnGrp Delay(d), sveh	49.5	30.9	10.2	44.9	19.5	0.4	79.4	42.8	49.7	44.5	55.4	50.7
LnGrp LOS	D	C	B	D	F	A	E	D	D	D	D	E
Approach Vol, veh/h	2090			2913			1181					404
Approach Delay, sveh	29.8			20.3			63.2					49.8
Approach LOS	C			C			E					D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.5	32.0	15.5	66.0	28.0	20.5	10.0	71.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	27.0	16.0	55.0	23.0	16.0	5.0	66.0				
Max Q Clear Time (g_c+11), s	11.5	28.7	10.2	38.7	24.0	11.7	6.7	2.0				
Green Ext Time (p_c), s	0.0	0.0	0.3	16.1	0.0	1.6	0.0	61.0				
Intersection Summary												
HCM 2010 Ctrl Delay												
HCM 2010 LOS												

2020 PM Peak BUILD Conditions Mitigated

Mitigated Geometry - Case "Y" (Driveway on Gibson)
D:\ATOB\PROJECTS_2013\SunPort_ACE\Synchro2020PBX-CaseY_Mitigated.syn

Intersection									
Int Delay, s/veh	2.8								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	1254	33	264	406	0	0	0	2114
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free
Storage Length	-	-	1000	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	1334	35	281	432	0	0	0	2249
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	432	0	-	1334	0	0	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	4.16	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	-	-	-
Pot Cap-1 Maneuver	1117	-	0	508	-	-	0	0	0
Stage 1	-	-	0	-	-	-	0	0	0
Stage 2	-	-	0	-	-	-	0	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1117	-	-	508	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB		
HCM Control Delay, s	0			8.1			0		
HCM LOS							A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	-	1117	-	508	-	-	-		
HCM Lane V/C Ratio	-	-	-	0.553	-	-	-		
HCM Control Delay (s)	0	0	-	20.5	-	-	0		
HCM Lane LOS	A	A	-	C	-	-	A		
HCM 95th %tile Q(veh)	-	0	-	3.3	-	-	-		

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	271
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	Free
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	94	94	94
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	288

Major/Minor	Minor2		
Conflicting Flow All	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	0
Stage 1	0	0	0
Stage 2	0	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	1271	33	288	410	0	0	0	2410
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free
Storage Length	-	-	1000	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	1352	35	306	436	0	0	0	2564

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	436	0	-	1352	0	0	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	4.16	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	-	-	-
Pot Cap-1 Maneuver	1113	-	0	500	-	-	0	0	0
Stage 1	-	-	0	-	-	-	0	0	0
Stage 2	-	-	0	-	-	-	0	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1113	-	-	500	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1113	-	500	-	-	-
HCM Lane V/C Ratio	-	-	-	0.613	-	-	-
HCM Control Delay (s)	0	0	-	22.9	-	-	0
HCM Lane LOS	A	A	-	C	-	-	A
HCM 95th %tile Q(veh)	-	0	-	4.1	-	-	-

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	271
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	Free
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	94	94	94
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	288

Major/Minor

Minor2

Conflicting Flow All	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	0
Stage 1	0	0	0
Stage 2	0	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

SB

HCM Control Delay, s	0
HCM LOS	A

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	8.6								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	883	31	645	1092	0	0	0	829
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free
Storage Length	-	-	1000	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	901	32	658	1114	0	0	0	846
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1114	0	-	901	0	0	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	4.16	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	-	-	-
Pot Cap-1 Maneuver	617	-	0	744	-	-	0	0	0
Stage 1	-	-	0	-	-	-	0	0	0
Stage 2	-	-	0	-	-	-	0	0	0
Platoon blocked, %	-	-	-	-	-	-	0	0	0
Mov Cap-1 Maneuver	617	-	-	744	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB		
HCM Control Delay, s	0			12.9			0		
HCM LOS							A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	-	617	-	744	-	-	-		
HCM Lane V/C Ratio	-	-	-	0.885	-	-	-		
HCM Control Delay (s)	0	0	-	34.9	-	-	0		
HCM Lane LOS	A	A	-	D	-	-	A		
HCM 95th %tile Q(veh)	-	0	-	11.2	-	-	-		

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	217
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	Free
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	98	98	98
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	221

Major/Minor

Minor2

Conflicting Flow All	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	0
Stage 1	0	0	0
Stage 2	0	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

SB

HCM Control Delay, s	0
HCM LOS	A

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	16.5								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	888	31	738	1107	0	0	0	946
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free
Storage Length	-	-	1000	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	906	32	753	1130	0	0	0	965
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1130	0	-	906	0	0	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	4.16	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	-	-	-
Pot Cap-1 Maneuver	608	-	0	~ 740	-	-	0	0	0
Stage 1	-	-	0	-	-	-	0	0	0
Stage 2	-	-	0	-	-	-	0	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	608	-	-	~ 740	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB		
HCM Control Delay, s	0			24.5			0		
HCM LOS							A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	-	608	-	~ 740	-	-	-		
HCM Lane V/C Ratio	-	-	-	1.018	-	-	-		
HCM Control Delay (s)	0	0	-	61.2	-	-	0		
HCM Lane LOS	A	A	-	F	-	-	A		
HCM 95th %tile Q(veh)	-	0	-	17.6	-	-	-		
Notes									
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon									

Intersection			
Int Delay, s/veh			
Movement	SBL	SBT	SBR
Vol, veh/h	0	0	217
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	Free
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	98	98	98
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	221
Major/Minor	Minor2		
Conflicting Flow All	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	0
Stage 1	0	0	0
Stage 2	0	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Approach	SB		
HCM Control Delay, s	0		
HCM LOS	A		
Minor Lane/Major Mvmt			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑	↑
Volume (vph)	2259	87	107	1381	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325	550	0	0	0	0
Storage Lanes	1	1	0	0	0	1
Taper Length (ft)	25	25	0.91	1.00	1.00	1.00
Lane Util. Factor	0.91	1.00	0.91	1.00	1.00	0.885
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (prot)	5036	1568	1752	5036	0	1596
Flt Permitted	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (perm)	5036	1568	1752	5036	0	1596
Link Speed (mph)	45	45	45	45	30	30
Link Distance (ft)	689	689	1989	943	30.1	21.4
Travel Time (s)	10.4	10.4	30.1	21.4	0.92	0.92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2455	95	116	1501	0	74
Shared Lane Traffic (%)	2455	95	116	1501	0	74
Lane Group Flow (vph)	No	No	No	No	No	No
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Right
Median Width (ft)	12	12	0	0	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	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	9	15	15	15	15	9
Turning Speed (mph)	Free	Free	Free	Free	Free	Free
Sign Control	Free	Free	Free	Free	Free	Free
Intersection Summary	Other					
Area Type:	Unsignalized					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.2%					
Analysis Period (min)	15					
	ICU Level of Service B					

Intersection	EBT	EBR	WBL	WBT	NBL	NBR
Int Delay, s/veh	2259	87	107	1381	0	68
Movement	Free	Free	Free	Free	Stop	Stop
Vol, veh/h	2259	87	107	1381	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	325	550	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	2455	95	116	1501	0	74
Major/Minor	Major1	Major2	Major2	Major2	Minor1	Minor1
Conflicting Flow All	0	0	2455	0	3288	1228
Stage 1	-	-	-	-	2455	-
Stage 2	-	-	-	-	833	-
Critical Hdwy	-	-	5.36	-	5.76	7.16
Critical Hdwy Stg 1	-	-	-	-	6.66	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	3.13	-	3.83	3.93
Pot Cap-1 Maneuver	-	-	*494	-	*114	*393
Stage 1	-	-	-	-	*404	-
Stage 2	-	-	-	-	*628	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	*494	-	*87	*393
Mov Cap-2 Maneuver	-	-	-	-	*87	-
Stage 1	-	-	-	-	*404	-
Stage 2	-	-	-	-	*481	-
Approach	EB	WB	WB	WB	NB	NB
HCM Control Delay, s	0	1	1	1	16.3	16.3
HCM LOS	C	B	B	B	C	C
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	393	-	-	*494	-	-
HCM Lane V/C Ratio	0.188	-	-	0.235	-	-
HCM Control Delay (s)	16.3	-	-	14.5	-	-
HCM Lane LOS	C	-	-	B	-	-
HCM 95th %ile Q(veh)	0.7	-	-	0.9	-	-
Notes	-					
-: Volume exceeds capacity	\$: Delay exceeds 300s					
	*: Computation Not Defined					
	*: All major volume in platoon					

Lanes, Volumes, Timings
5: "A" & Gibson Blvd

Terry O. Brown, P.E.
4/15/2014 - Synchro 8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↑	↑↑↑	↑	↑
Volume (vph)	1923	152	188	2680	0	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325	550	0	0	0	0
Storage Lanes	1	1	1	0	0	1
Taper Length (ft)	25	25	25	25	25	25
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Flt. Protected	0.850					0.855
Flt. Permitted						
Satd. Flow (prot)	5036	1568	1752	5036	0	1596
Satd. Flow (perm)	5036	1568	1752	5036	0	1596
Link Speed (mph)	45			45	30	
Link Distance (ft)	689			1989	943	
Travel Time (s)	10.4			30.1	21.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2003	158	196	2792	0	145
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2003	158	196	2792	0	145
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	15	9	9
Sign Control	Free	Free	Free	Free	Stop	Stop
Intersection Summary						
Area Type	Other					
Control Type	Unsignalized					
Intersection Capacity Utilization	55.1%					
Analysis Period (min)	15					
	ICU Level of Service B					

HCM 2010 TWSC
5: "A" & Gibson Blvd

Terry O. Brown, P.E.
4/15/2014 - Synchro 8

Intersection	0.9									
Int Delay, s/veh										
Movement	Vol, veh/h	EBT	EBR	WBL	WBT	NBL	NBR	Vol, veh/h	EBT	EBR
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	Storage Length	-	325	-	550	-	None	-	325	-
Veh in Median Storage, #	Grade, %	0	-	-	-	-	0	0	-	-
Peak Hour Factor	Heavy Vehicles, %	96	96	96	96	96	96	96	96	96
Mvmt Flow		2003	158	196	2792	0	145	2003	158	196
Major/Minor	Major1	Major2	Minor1	Minor2	Minor3	Minor4	Minor5	Major1	Major2	Minor1
Conflicting Flow All	0	0	0	0	0	0	0	0	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-
Approach	EB	WB	WB	WB	WB	WB	WB	EB	WB	WB
HCM Control Delay, s	0	0	0	0	0	0	0	0	0	0
HCM LOS										
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	NBL	NBR	NBLn1	EBT	EBR
Capacity (veh/h)	473	-	-	-	-	-	-	473	-	-
HCM Lane V/C Ratio	0.306	-	-	-	-	-	-	0.306	-	-
HCM Control Delay (s)	15.9	-	-	-	-	-	-	15.9	-	-
HCM Lane LOS	C	-	-	-	-	-	-	C	-	-
HCM 95th %ile Q(veh)	1.3	-	-	-	-	-	-	1.3	-	-
Notes										
-: Volume exceeds capacity	\$. Delay exceeds 300s									
-: Computation Not Defined	*: All major volume in platoon									

2020 PM Peak BUILD Conditions Mitigated

Mitigated Geometry - Case "Y" (Driveway on Gibson)
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2020 PM Peak BUILD Conditions Mitigated

Mitigated Geometry - Case "Y" (Driveway on Gibson)
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Intersection

Int Delay, s/veh 16.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	2857	0	0	0	0	29	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	3039	0	0	0	0	31	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	0	0	-	3039	0	0	3039	3039	-
Stage 1	-	-	-	-	-	-	3039	3039	-
Stage 2	-	-	-	-	-	-	0	0	-
Critical Hdwy	4.16	-	-	4.16	-	-	6.86	6.56	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.86	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	-
Pot Cap-1 Maneuver	-	-	0	107	-	0	~ 10	12	0
Stage 1	-	-	0	-	-	0	~ 23	29	0
Stage 2	-	-	0	-	-	0	-	-	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	107	-	-	~ 10	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 10	0	-
Stage 1	-	-	-	-	-	-	~ 23	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	\$ 1682.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT
Capacity (veh/h)	10	-	-	-	107	-
HCM Lane V/C Ratio	3.085	-	-	-	-	-
HCM Control Delay (s)	\$ 1682.6	0	0	-	0	-
HCM Lane LOS	F	A	A	-	A	-
HCM 95th %tile Q(veh)	4.9	-	-	-	0	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	94	94	94
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	0

Major/Minor

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy

Critical Hdwy Stg 1

Critical Hdwy Stg 2

Follow-up Hdwy

Pot Cap-1 Maneuver

Stage 1

Stage 2

Platoon blocked, %

Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Approach

HCM Control Delay, s

HCM LOS

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	19								

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	2876	0	0	0	0	29	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	3060	0	0	0	0	31	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	0	0	-	3060	0	0	3060	3060	-
Stage 1	-	-	-	-	-	-	3060	3060	-
Stage 2	-	-	-	-	-	-	0	0	-
Critical Hdwy	4.16	-	-	4.16	-	-	6.86	6.56	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.86	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	-
Pot Cap-1 Maneuver	-	-	0	105	-	0	~ 9	12	0
Stage 1	-	-	0	-	-	0	~ 22	28	0
Stage 2	-	-	0	-	-	0	-	-	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	105	-	-	~ 9	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 9	0	-
Stage 1	-	-	-	-	-	-	~ 22	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	\$ 1908.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT
Capacity (veh/h)	9	-	-	-	105	-
HCM Lane V/C Ratio	3.428	-	-	-	-	-
HCM Control Delay (s)	\$ 1908.1	0	0	-	0	-
HCM Lane LOS	F	A	A	-	A	-
HCM 95th %tile Q(veh)	5	-	-	-	0	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	94	94	94
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	0

Major/Minor

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy

Critical Hdwy Stg 1

Critical Hdwy Stg 2

Follow-up Hdwy

Pot Cap-1 Maneuver

Stage 1

Stage 2

Platoon blocked, %

Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Approach

HCM Control Delay, s

HCM LOS

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	0.7								
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	1362	0	0	0	0	18	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	1602	0	0	0	0	21	0	0
Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	0	0	-	1602	0	0	1602	1602	-
Stage 1	-	-	-	-	-	-	1602	1602	-
Stage 2	-	-	-	-	-	-	0	0	-
Critical Hdwy	4.16	-	-	4.16	-	-	6.86	6.56	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.86	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	-
Pot Cap-1 Maneuver	-	-	0	400	-	0	96	104	0
Stage 1	-	-	0	-	-	0	149	162	0
Stage 2	-	-	0	-	-	0	-	-	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	400	-	-	96	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	96	0	-
Stage 1	-	-	-	-	-	-	149	0	-
Stage 2	-	-	-	-	-	-	-	0	-
Approach	EB			WB			NB		
HCM Control Delay, s	0			0			52.8		
HCM LOS							F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT			
Capacity (veh/h)	96	-	-	-	400	-			
HCM Lane V/C Ratio	0.221	-	-	-	-	-			
HCM Control Delay (s)	52.8	0	0	-	0	-			
HCM Lane LOS	F	A	A	-	A	-			
HCM 95th %tile Q(veh)	0.8	-	-	-	0	-			

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	0

Major/Minor

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy

Critical Hdwy Stg 1

Critical Hdwy Stg 2

Follow-up Hdwy

Pot Cap-1 Maneuver

Stage 1

Stage 2

Platoon blocked, %

Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Approach

HCM Control Delay, s

HCM LOS

Minor Lane/Major Mvmt

Intersection									
Int Delay, s/veh	0.7								

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	1396	0	0	0	0	18	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	1642	0	0	0	0	21	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	0	0	-	1642	0	0	1642	1642	-
Stage 1	-	-	-	-	-	-	1642	1642	-
Stage 2	-	-	-	-	-	-	0	0	-
Critical Hdwy	4.16	-	-	4.16	-	-	6.86	6.56	-
Critical Hdwy Stg 1	-	-	-	-	-	-	5.86	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.86	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	-
Pot Cap-1 Maneuver	-	-	0	386	-	0	90	98	0
Stage 1	-	-	0	-	-	0	142	155	0
Stage 2	-	-	0	-	-	0	-	-	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	386	-	-	90	0	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	0	-
Stage 1	-	-	-	-	-	-	142	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	56.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBL	WBT
Capacity (veh/h)	90	-	-	-	386	-
HCM Lane V/C Ratio	0.235	-	-	-	-	-
HCM Control Delay (s)	56.9	0	0	-	0	-
HCM Lane LOS	F	A	A	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	-	0	-

Intersection

Int Delay, s/veh

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	85	85	85
Heavy Vehicles, %	3	3	3
Mvmt Flow	0	0	0

Major/Minor

Conflicting Flow All

Stage 1

Stage 2

Critical Hdwy

Critical Hdwy Stg 1

Critical Hdwy Stg 2

Follow-up Hdwy

Pot Cap-1 Maneuver

Stage 1

Stage 2

Platoon blocked, %

Mov Cap-1 Maneuver

Mov Cap-2 Maneuver

Stage 1

Stage 2

Approach

HCM Control Delay, s

HCM LOS

Minor Lane/Major Mvmt

Lanes, Volumes, Timings
7: Girard Blvd & Miles Rd

Terry O. Brown, P.E.
3/30/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Volume (vph)	60	2	5	5	22	215	5	148	2	280	473	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	0	0	0	125	0	0
Storage Lanes	0	0	0	0	0	1	0	0	0	1	0	0
Taper Length (ft)	25	0	0	25	0	0	25	0	0	25	0	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
Fr Protected	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957
Satd. Flow (prot)	0	1748	0	0	1828	1568	0	1839	0	1752	1797	0
Fr Permitted	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957
Satd. Flow (perm)	0	1748	0	0	1828	1568	0	1839	0	1752	1797	0
Link Speed (mph)	30	30	30	30	30	30	30	30	30	30	30	30
Link Distance (ft)	205	205	205	205	205	205	205	205	205	205	205	205
Travel Time (s)	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	71	2	6	6	26	253	6	174	2	329	556	118
Shared Lane Traffic (%)	0	79	0	0	32	253	0	182	0	329	674	0
Lane Group Flow (vph)	No	No	No	No	No	No	No	No	No	No	No	No
Enter Blocked Intersection	Left	Left	Right	Left	Right	Right	Left	Right	Left	Left	Right	Right
Lane Alignment	Left	Left	Right	Left	Right	Right	Left	Right	Left	Left	Right	Right
Median Width (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Link Offset (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16	16	16	16	16	16	16
Two way Left Turn Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	15	15	15	15	15	15	15	15	15	15	15	15
Turning Speed (mph)	15	15	15	15	15	15	15	15	15	15	15	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Intersection Summary	ICU Level of Service B											
Area Type	Other											
Control Type	Unsignalized											
Intersection Capacity Utilization	59.6%											
Analysis Period (min)	15											

2020 AM Peak BUILD Conditions Mitigated

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Mitigated Geometry - Case 'Y' (Driveway on Gibson)

HCM 2010 TWSC
7: Girard Blvd & Miles Rd

Terry O. Brown, P.E.
3/30/2014 - Synchro 8

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Int Delay, s/veh	6	6	6	6	6	6	6	6	6	6	6	6
Movement	60	2	5	5	22	215	5	148	2	280	473	100
Vol. veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds. #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	-	-	-	-	-	-	-	-	-
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	-	-	-	-	-	-	-	-
Grade, %	-	-	-	-	-	-	-	-	-	-	-	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	71	2	6	6	26	253	6	174	2	329	556	118
Major/Minor	Minor2	Minor1	Major1	Minor1	Minor1	Major1	Minor1	Minor1	Major1	Minor1	Minor1	Major1
Conflicting Flow All	1474	1462	615	1465	1520	-	187	187	-	674	0	0
Stage 1	1274	1274	-	-	-	-	-	-	-	-	-	-
Stage 2	200	188	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	6.13	5.53	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	-	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	104	128	489	-	-	-	-	-	-	-	-	-
Stage 1	204	237	-	-	-	-	-	-	-	-	-	-
Stage 2	800	743	-	-	-	-	-	-	-	-	-	-
Platoon blocked, %	73	97	489	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	154	149	-	-	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	203	181	-	-	-	-	-	-	-	-	-	-
Stage 1	767	738	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB	WB	NB	WB	NB	EB	NB	WB	NB	EB	NB	WB
HCM Control Delay, s	46.6	38.1	-	-	-	-	-	-	-	-	-	-
HCM LOS	E	E	-	-	-	-	-	-	-	-	-	-
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	-	-	-
Capacity (veh/h)	912	-	-	162	140	-	1394	-	-	-	-	-
HCM Lane V/C Ratio	0.006	-	-	0.487	0.227	-	0.236	-	-	-	-	-
HCM Control Delay (s)	9	0	0	46.6	38.1	0	8.4	-	-	-	-	-
HCM Lane LOS	A	A	A	E	E	A	A	-	-	-	-	-
HCM 95th %ile Q(veh)	0	-	-	2.3	0.8	-	0.9	-	-	-	-	-

2020 AM Peak BUILD Conditions Mitigated

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Mitigated Geometry - Case 'Y' (Driveway on Gibson)

Lanes, Volumes, Timings
7: Girard Blvd & Miles Rd

Terry O. Brown, P.E.
3/30/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Volume (vph)	60	2	5	5	22	215	5	148	2	280	473	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	0	0	0	125	0	0
Storage Lanes	0	0	0	0	0	1	0	0	0	0	0	1
Taper Length (ft)	25	0	0	25	0	0	25	0	0	25	0	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.990	0.957	0.990	0.991	0.991	0.850	0.999	0.998	0.998	0.982	0.982	0.850
Flt Protected	0	1748	0	0	1828	1568	0	1839	0	0	1811	1568
Flt Permitted	0	0.957	0	0.991	0.991	0	0.998	0.998	0	0.982	0.982	0
Satd Flow (perm)	0	1748	0	0	1828	1568	0	1839	0	0	1811	1568
Link Speed (mph)	30	30	30	30	30	30	35	35	30	30	30	30
Link Distance (ft)	312	300	300	300	300	582	582	582	300	582	580	300
Travel Time (s)	7.1	6.8	6.8	6.8	6.8	11.3	11.3	11.3	6.8	11.3	13.2	6.8
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	71	2	6	6	26	253	6	174	2	329	556	118
Shared Lane Traffic (%)	0	79	0	0	32	253	0	182	0	0	885	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width (ft)	0	0	0	0	0	0	24	24	0	24	24	0
Link Offset (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16	16	16	16	16	16	16
Two way Left Turn Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	15	15	15	15	15	15	15	15	15	15	15	15
Turning Speed (mph)	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Intersection Summary												
Area Type	Other											
Control Type	Roundabout											
Intersection Capacity Utilization	69.0%											
Analysis Period (min)	15											
	ICU Level of Service C											

2020 AM Peak BUILD Conditions Mitigated

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Mitigated Geometry - Driveways

HCM 2010 Roundabout
7: Girard Blvd & Miles Rd

Terry O. Brown, P.E.
3/30/2014 - Synchro 8

Intersection	EB	WB	NB	SB
Intersection Delay, s/veh	14.7			
Intersection LOS	B			
Approach				
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	79	285	182	1003
Demand Flow Rate, veh/h	81	294	187	1034
Vehicles Circulating, veh/h	918	258	414	39
Vehicles Exiting, veh/h	155	343	585	252
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.9	0.5	7.9	20.3
Approach LOS	B	A	A	C
Lane	Left	Left	Left	Left
Designated Moves	LTR	LT	LTR	LT
Assumed Moves	LTR	LT	LTR	LT
RT Channelized			Free	
Lane Util	1.000	1.000	1.000	0.882
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	81	33	261	912
Cap Entry Lane, veh/h	451	873	1957	1087
Entry HV Adj Factor	0.975	0.975	0.971	0.972
Flow Entry, veh/h	79	32	253	885
Cap Entry, veh/h	440	852	1900	1055
V/C Ratio	0.180	0.038	0.133	0.250
Control Delay, s/veh	10.9	4.6	0.0	22.4
LOS	B	A	A	C
95th %ile Queue, veh	1	0	0	10

2020 AM Peak BUILD Conditions Mitigated

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Mitigated Geometry - Driveways

Lanes, Volumes, Timings

7: Girard Blvd & Miles Rd.

Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Volume (vph)	108	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	0	0	0	0	0	0	0	0	0	0	0	0
Storage Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Taper Length (ft)	25	0	0	25	0	0	0	0	0	0	0	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit	0.994	0.957	0.957	0.997	0.997	0.950	0.998	0.998	0.950	0.950	0.998	0.998
Flt Protected	0	1755	0	0	1839	1568	0	1839	0	1752	1841	0
Flt Permitted	0	0.957	0	0.997	0.997	0.999	0.950	0.999	0.950	0.950	0.950	0.950
Satd. Flow (perm)	0	1755	0	0	1839	1568	0	1839	0	1752	1841	0
Link Speed (mph)	30	30	30	30	30	30	35	35	30	30	30	30
Link Distance (ft)	241	241	241	260	260	2500	593	593	241	241	241	241
Travel Time (s)	5.5	5.5	5.5	5.9	5.9	48.7	13.5	13.5	5.5	5.5	5.5	5.5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	127	7	7	6	6	100	621	6	533	7	239	356
Shared Lane Traffic (%)	0	140	0	0	106	621	0	546	0	239	362	0
Lane Group Flow (vph)	No	No	No	No	No	No	No	No	No	No	No	No
Enter Blocked Intersection	Left	Left	Right	Left	Left	Left	Left	Right	Left	Left	Right	Right
Lane Alignment	Left	Left	Right	Left	Left	Left	Left	Right	Left	Left	Right	Right
Median Width (ft)	0	0	0	0	0	0	24	24	0	24	24	0
Link Offset (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16	16	16	16	16	16	16
Two way Left Turn Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	15	15	15	15	15	15	15	15	15	15	15	15
Turning Speed (mph)	15	15	15	15	15	15	15	15	15	15	15	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Intersection Summary	ICU Level of Service D											
Area Type	Other											
Control Type	Unsignalized											
Intersection Capacity Utilization	73.8%											
Analysis Period (min)	15											

HCM 2010 TWSC

7: Girard Blvd & Miles Rd.

Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Intersection										
Int Delay, s/veh 23.9										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	
Vol, veh/h	108	6	5	5	85	528	5	453	6	
Conflicting Peds. #/hr	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	-	-	-	None	
Storage Length	-	-	-	-	-	0	-	-	-	
Veh in Median Storage, #	-	1	-	-	1	-	-	-	0	
Grade, %	-	0	-	-	0	-	-	-	0	
Peak Hour Factor	85	85	85	85	85	85	85	85	85	
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	
Mvmt Flow	127	7	6	6	100	621	6	533	7	
Major/Minor	Minor2	Minor1					Major1			
Conflicting Flow All	1435	1389	359	1392	1388	-	362	0	0	
Stage 1	837	837	-	548	548	-	-	-	-	
Stage 2	598	552	-	844	840	-	-	-	-	
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	-	4.13	-	-	
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	-	2.227	-	-	
Pot Cap-1 Maneuver	-111	142	683	119	142	0	1191	-	-	
Stage 1	360	381	-	519	515	0	-	-	-	
Stage 2	487	513	-	356	379	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-58	108	683	93	108	-	1191	-	-	
Mov Cap-2 Maneuver	-117	177	-	193	210	-	-	-	-	
Stage 1	357	292	-	515	511	-	-	-	-	
Stage 2	389	509	-	264	290	-	-	-	-	
Approach	EB	EB	WB	WB	WB	NB	NB	NB	NB	
HCM Control Delay, s	191.7	191.7	38.7	38.7	38.7	0.1	0.1	0.1	0.1	
HCM LOS	F	F	E	E	E					
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1191	-	-	123	209	-	1023	-	-	
HCM Lane V/C Ratio	0.005	-	-	1.138	0.507	-	0.233	-	-	
HCM Control Delay (s)	8	0	-	191.7	38.7	0	9.6	-	-	
HCM Lane LOS	A	A	-	F	E	A	A	-	-	
HCM 95th %ile Q(veh)	0	-	-	8.4	2.6	-	0.9	-	-	
Notes	*- Volume exceeds capacity \$: Delay exceeds 300s *- Computation Not Defined *- All major volume in platoon									

2020 PM Peak BUILD Conditions Mitigated

Mitigated Geometry - Case 'Y' (Driveway on Gibson)
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2020 PM Peak BUILD Conditions Mitigated

Mitigated Geometry - Case 'Y' (Driveway on Gibson)
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HCM 2010 TWSC
 7: Girard Blvd & Miles Rd.

Terry O. Brown, P.E.
 3/31/2014 - Synchro 8

Intersection		SBL		SBR	
Int Delay, s/veh					
Movement					
Vol, veh/h		203		303	
Conflicting Peds. #/hr		0		0	
Sign Control		Free		Free	
RT Channelized		-		None	
Storage Length		125		-	
Veh in Median Storage, #		-		0	
Grade, %		-		-	
Peak Hour Factor		85		85	
Heavy Vehicles, %		3		3	
Mvmt Flow		239		356	
Major/Minor		Major2			
Conflicting Flow All		540		0	
Stage 1		-		-	
Stage 2		-		-	
Critical Hdwy		413		-	
Critical Hdwy Stg 1		-		-	
Critical Hdwy Stg 2		-		-	
Follow-up Hdwy		2227		-	
Pot Cap-1 Maneuver		1023		-	
Stage 1		-		-	
Stage 2		-		-	
Platoon blocked, %		-		-	
Mov Cap-1 Maneuver		1023		-	
Mov Cap-2 Maneuver		-		-	
Stage 1		-		-	
Stage 2		-		-	
Approach		SB			
HCM Control Delay, s		3.8			
HCM LOS					
Minor Lane/Major Mvmt					

2020 PM Peak BUILD Conditions Mitigated
 Mitigated Geometry - Case 'Y' (Driveway on Gibson)
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Lanes, Volumes, Timings
7: Girard Blvd & Miles Rd

Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Volume (vph)	108	6	5	1	85	528	5	453	6	203	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	0	0	0	125	0
Storage Lanes	0	0	0	0	0	1	0	0	0	0	1
Taper Length (ft)	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	0.994	0.957	0.850	0.850	0.998	0.999	0.980	0.850	0.850	0.850
Flt Protected	0	1755	0	0	1845	1568	0	1839	0	0	1808
Satd. Flow (prot)	0	1755	0	0	1845	1568	0	1839	0	0	1808
Flt Permitted	0	1755	0	0	1845	1568	0	1839	0	0	1808
Satd. Flow (perm)	0	1755	0	0	1845	1568	0	1839	0	0	1808
Link Speed (mph)	30	30	30	30	30	30	35	30	30	30	30
Link Distance (ft)	312	300	300	300	300	300	582	580	580	580	580
Travel Time (s)	7.1	6.8	6.8	6.8	6.8	6.8	11.3	13.2	13.2	13.2	13.2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	127	7	6	1	100	621	6	533	7	239	356
Shared Lane Traffic (%)	0	140	0	0	101	621	0	546	0	0	595
Lane Group Flow (vph)	No	No	No	No	No	No	No	No	No	No	No
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width (ft)	0	0	0	0	0	0	24	24	24	24	24
Link Offset (ft)	0	0	0	0	0	0	0	0	0	0	0
Crosswalk Width (ft)	16	16	16	16	16	16	16	16	16	16	16
Two way Left Turn Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Headway Factor	15	15	15	15	15	15	15	15	15	15	15
Turning Speed (mph)	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free
Intersection Summary	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Area Type:	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other
Control Type:	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout	Roundabout
Intersection Capacity Utilization	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%	74.9%
Analysis Period (min)	15	15	15	15	15	15	15	15	15	15	15

2020 PM Peak BUILD Conditions Mitigated

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Mitigated Geometry - Miles Rd.

HCM 2010 Roundabout
7: Girard Blvd & Miles Rd

Terry O. Brown, P.E.
3/31/2014 - Synchro 8

Intersection	EB	WB	NB	SB
Intersection Delay, s/veh	10.2			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	1	1	1	1
Adj. Approach Flow, veh/h	140	722	546	601
Demand Flow Rate, veh/h	144	744	562	619
Vehicles Circulating, veh/h	614	686	384	110
Vehicles Exiting, veh/h	115	260	374	680
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.1	1.2	20.3	12.1
Approach LOS	A	A	C	B
Lane	Left	Left	Bypass	Left
Designated Moves	LTR	LT	R	LT
Assumed Moves	LTR	LT	R	LT
RT Channelized			Free	
Lane Util	1.000	1.000	1.000	0.990
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	144	104	562	613
Cap Entry Lane, veh/h	612	569	1957	1012
Entry HV Adj Factor	0.971	0.971	0.971	0.971
Flow Entry, veh/h	140	101	621	595
Cap Entry, veh/h	594	553	1900	983
V/C Ratio	0.235	0.183	0.327	0.606
Control Delay, s/veh	9.1	8.9	0.0	12.1
LOS	A	A	A	B
95th %ile Queue, veh	1	1	1	4

2020 PM Peak BUILD Conditions Mitigated

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Mitigated Geometry - Miles Rd.

Intersection

Int Delay, s/veh 2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	41	168	1	174	399
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	48	198	1	205	469

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1077	198	0 0 199 0
Stage 1	198	-	- - - -
Stage 2	879	-	- - - -
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	241	841	- - 1367 -
Stage 1	833	-	- - - -
Stage 2	404	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	192	841	- - 1367 -
Mov Cap-2 Maneuver	192	-	- - - -
Stage 1	833	-	- - - -
Stage 2	322	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1367	-
HCM Lane V/C Ratio	-	-	0.064	0.15	-
HCM Control Delay (s)	-	-	9.9	8.1	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.5	-

Intersection

Int Delay, s/veh 3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	159	252	1	52	256
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	187	296	1	61	301

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	721	297	0 0 298 0
Stage 1	297	-	- - - -
Stage 2	424	-	- - - -
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	393	740	- - 1258 -
Stage 1	752	-	- - - -
Stage 2	658	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	370	740	- - 1258 -
Mov Cap-2 Maneuver	370	-	- - - -
Stage 1	752	-	- - - -
Stage 2	620	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	735	1258	-
HCM Lane V/C Ratio	-	-	0.256	0.049	-
HCM Control Delay (s)	-	-	11.6	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.2	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	27	80	1	116	147
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	32	94	1	136	173

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	541	95	0
Stage 1	95	-	-
Stage 2	446	-	-
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	500	959	1493
Stage 1	926	-	-
Stage 2	643	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	450	959	1493
Mov Cap-2 Maneuver	450	-	-
Stage 1	926	-	-
Stage 2	578	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	3.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	1493	-
HCM Lane V/C Ratio	-	-	0.036	0.091	-
HCM Control Delay (s)	-	-	9	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.3	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	106	140	1	35	86
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	125	165	1	41	101

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	349	165	0
Stage 1	165	-	-
Stage 2	184	-	-
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	646	877	1406
Stage 1	862	-	-
Stage 2	845	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	626	877	1406
Mov Cap-2 Maneuver	626	-	-
Stage 1	862	-	-
Stage 2	819	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	874	1406	-
HCM Lane V/C Ratio	-	-	0.144	0.029	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	20	60	1	87	60
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	24	71	1	102	71
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	346	71	0	0	72	0
Stage 1	71	-	-	-	-	-
Stage 2	275	-	-	-	-	-
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	649	989	-	-	1522	-
Stage 1	949	-	-	-	-	-
Stage 2	769	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	604	989	-	-	1522	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	8.8		0		4.5	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	960	1522	-	
HCM Lane V/C Ratio	-	-	0.026	0.067	-	
HCM Control Delay (s)	-	-	8.8	7.5	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-	

Intersection

Int Delay, s/veh

4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	80	60	1	26	60
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	94	71	1	31	71

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	203	71	0
Stage 1	71	-	-
Stage 2	132	-	-
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	783	989	1522
Stage 1	949	-	-
Stage 2	892	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	767	989	1522
Mov Cap-2 Maneuver	767	-	-
Stage 1	949	-	-
Stage 2	873	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	985	1522	-
HCM Lane V/C Ratio	-	-	0.097	0.02	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Traffic Count Data Sheet

Year Counts Taken: 2014

E-W Street Gibson Blvd

N-S Street: Louisiana Blvd

Speed Limit (Gibson Blvd)= 40

Speed Limit (Louisiana Blvd)= 35

1/16/14

SIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	29	93	4	4	45	4	4	4	2	90	4	94
7:15 AM	7:30 AM	35	99	1	3	43	7	0	0	1	91	5	100
7:30 AM	7:45 AM	42	116	1	4	39	6	0	0	4	73	9	112
7:45 AM	8:00 AM	38	127	1	2	51	8	0	3	4	59	10	115
8:00 AM	8:15 AM	55	121	2	1	41	13	2	1	2	68	15	113
8:15 AM	8:30 AM	52	96	0	2	36	15	0	2	5	44	3	83
8:30 AM	8:45 AM	54	85	2	2	36	8	0	2	8	37	4	80
8:45 AM	9:00 AM	55	97	0	5	58	17	4	2	8	40	5	68
AM Peak Hour Volumes		170	463	5	10	174	34	2	4	11	291	39	440
% of Total Traffic		10.3%	28.2%	0.3%	0.6%	10.6%	2.1%	0.1%	0.2%	0.7%	17.7%	2.4%	0.0%
% Directional			38.8%			13.3%	Intersection		1.0%			20.1%	
AM Peak Hour Factor			0.90			0.89	0.95		0.61			0.98	

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Louisiana Blvd)			Southbound (Louisiana Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	75	39	0	6	133	36	5	9	13	46	7	57
4:15 PM	4:30 PM	104	37	1	5	204	60	11	23	26	7	1	46
4:30 PM	4:45 PM	91	41	0	4	158	47	3	12	7	15	8	66
4:45 PM	5:00 PM	97	42	1	4	182	64	11	15	22	10	5	78
5:00 PM	5:15 PM	97	42	0	5	114	43	8	7	7	12	4	76
5:15 PM	5:30 PM	89	60	0	3	162	47	15	16	6	17	4	74
5:30 PM	5:45 PM	82	32	0	4	154	53	11	13	4	19	4	57
5:45 PM	6:00 PM	84	43	0	2	138	32	4	8	4	12	3	83
PM Peak Hour Volumes		389	162	2	18	658	214	33	57	62	44	18	266
% of Total Traffic		20.2%	8.4%	0.1%	0.9%	34.2%	11.1%	1.7%	3.0%	3.2%	2.3%	0.9%	13.8%
% Directional			28.8%			46.3%	Intersection		7.9%			17.1%	
PM Peak Hour Factor			0.97			0.83	0.91		0.63			0.88	

Traffic Count Data Sheet

Year Counts Taken:

2013

E-W Street Gibson Blvd
N-S Street: Carlisle BlvdSpeed Limit (Gibson Blvd)= 40
Speed Limit (Carlisle Blvd)= 35

12/12/13

UNSIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	43	349	80	24	156	6	3	0	2	44	23	48
7:15 AM	7:30 AM	27	422	88	29	198	9	4	2	0	22	13	22
7:30 AM	7:45 AM	21	356	69	31	260	7	6	0	3	23	22	27
7:45 AM	8:00 AM	15	329	69	23	257	16	6	0	0	19	18	25
8:00 AM	8:15 AM	15	254	55	26	246	11	7	1	0	23	18	23
8:15 AM	8:30 AM	35	243	64	33	249	12	4	4	2	12	18	44
8:30 AM	8:45 AM	48	450	42	14	110	9	2	0	0	7	2	9
8:45 AM	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
AM Peak Hour Volumes		78	1361	281	109	961	43	23	3	3	87	71	97
% of Total Traffic		2.5%	43.6%	9.0%	3.5%	30.8%	1.4%	0.7%	0.1%	0.1%	2.8%	2.3%	0.0%
% Directional			55.2%			35.7%	Intersection		0.9%	0.9%		5.1%	
AM Peak Hour Factor			0.80			0.93	Intersection		0.81	0.81			

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Carlisle Blvd)			Southbound (Carlisle Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	34	229	8	3	382	25	84	8	8	48	0	26
4:15 PM	4:30 PM	27	474	7	5	418	20	74	44	6	46	2	29
4:30 PM	4:45 PM	21	213	2	2	471	15	123	29	11	12	1	28
4:45 PM	5:00 PM	28	253	2	5	432	39	84	20	8	10	2	27
5:00 PM	5:15 PM	34	257	2	5	401	31	61	16	23	21	2	18
5:15 PM	5:30 PM	44	249	1	2	443	36	84	14	6	20	1	18
5:30 PM	5:45 PM	39	226	2	2	413	35	59	48	17	48	2	28
5:45 PM	6:00 PM	44	419	4	2	489	45	24	44	9	9	0	48
PM Peak Hour Volumes		127	972	7	14	1747	121	352	79	48	63	6	91
% of Total Traffic		3.5%	26.8%	0.2%	0.4%	48.2%	3.3%	9.7%	2.2%	1.3%	1.7%	0.2%	2.5%
% Directional			30.5%			51.9%	Intersection		13.2%	4.4%			
PM Peak Hour Factor			0.94			0.96	Intersection		0.73	0.98		0.98	

Traffic Count Data Sheet

Year Counts Taken:

2013

E-W Street Gibson Blvd

N-S Street: Hickman Ave

Speed Limit (Gibson Blvd)= 40

Speed Limit (Hickman Ave)= 35

12/19/13

UNSIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Hickman Ave)			Southbound (Hickman Ave)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	412	5	4	477	0	0	0	0	0	0	0
7:15 AM	7:30 AM	0	537	1	1	224	0	0	0	0	0	0	0
7:30 AM	7:45 AM	0	446	3	1	293	0	0	0	0	0	0	0
7:45 AM	8:00 AM	0	413	3	0	288	0	0	0	0	0	0	0
8:00 AM	8:15 AM	0	324	3	2	276	0	0	0	0	0	0	0
8:15 AM	8:30 AM	0	339	2	20	294	0	0	0	0	0	0	0
8:30 AM	8:45 AM	0	240	3	3	424	0	0	0	0	0	0	0
8:45 AM	9:00 AM	0	0	3	0	0	0	0	0	0	0	0	0
AM Peak Hour Volumes		0	1720	10	4	1081	0	0	0	0	0	0	0
% of Total Traffic		0.0%	61.1%	0.4%	0.1%	38.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% Directional			61.5%			38.5%							
AM Peak Hour Factor			0.80			0.92							
						0.92							
						Intersection							
						0.96							
						#DIV/0!							

Due to this being a KAFB contractor gate that closes early, there is no existing PM turning traffic

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Hickman Ave)			Southbound (Hickman Ave)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	274	0	0	492	0	0	0	0	0	0	0
4:15 PM	4:30 PM	0	205	0	0	518	0	0	0	0	0	0	0
4:30 PM	4:45 PM	0	236	0	0	622	0	0	0	0	0	0	0
4:45 PM	5:00 PM	0	283	0	0	543	0	0	0	0	0	0	0
5:00 PM	5:15 PM	0	293	0	0	480	0	0	0	0	0	0	0
5:15 PM	5:30 PM	0	294	0	0	545	0	0	0	0	0	0	0
5:30 PM	5:45 PM	0	267	0	0	500	0	0	0	0	0	0	0
5:45 PM	6:00 PM	0	134	0	0	228	0	0	0	0	0	0	0
PM Peak Hour Volumes		0	1106	0	0	2190	0	0	0	0	0	0	0
% of Total Traffic		0.0%	33.6%	0.0%	0.0%	66.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% Directional			33.6%			66.4%							
PM Peak Hour Factor			0.94			0.88							
						0.96							
						#DIV/0!							

Traffic Count Data Sheet

Year Counts Taken: 2013 E-W Street Gibson Blvd Speed Limit (Gibson Blvd)= 40
 N-S Street: Girard Blvd Speed Limit (Girard Blvd)= 35
 12/12/13

UNSIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	8	447	6	43	459	4	2	4	46	45	4	47
7:15 AM	7:30 AM	9	455	1	25	173	4	4	1	17	13	7	12
7:30 AM	7:45 AM	12	450	5	28	239	9	3	4	21	20	3	26
7:45 AM	8:00 AM	21	433	7	42	275	17	0	2	18	16	11	15
8:00 AM	8:15 AM	23	359	3	27	217	12	1	2	16	19	13	8
8:15 AM	8:30 AM	28	347	4	22	237	9	0	3	10	18	11	15
8:30 AM	8:45 AM	24	297	7	15	206	18	2	3	9	13	8	21
8:45 AM	9:00 AM	20	222	4	10	134	13	1	6	7	14	7	9
AM Peak Hour Volumes		65	1697	16	122	904	42	8	9	72	68	34	61
% of Total Traffic		2.1%	54.8%	0.5%	3.9%	29.2%	1.4%	0.3%	0.3%	2.3%	2.2%	1.1%	0.0%
% Directional			57.4%			34.5%	Intersection		2.9%			3.3%	
AM Peak Hour Factor			0.95			0.80	0.90		0.79			0.83	

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	15	242	4	30	493	20	3	4	25	5	7	25
4:15 PM	4:30 PM	25	211	5	34	557	19	3	4	25	13	8	22
4:30 PM	4:45 PM	27	292	3	31	517	21	4	8	25	19	5	26
4:45 PM	5:00 PM	21	352	1	33	527	48	3	9	23	15	11	23
5:00 PM	5:15 PM	23	297	1	37	481	28	2	10	33	17	5	31
5:15 PM	5:30 PM	22	341	2	27	455	22	3	10	30	10	9	23
5:30 PM	5:45 PM	24	300	4	29	418	18	1	5	30	13	2	16
5:45 PM	6:00 PM	6	129	0	16	146	7	0	4	30	7	1	9
PM Peak Hour Volumes		93	1282	7	128	1980	119	12	37	111	61	30	103
% of Total Traffic		2.3%	32.3%	0.2%	3.2%	50.0%	3.0%	0.3%	0.9%	2.8%	1.5%	0.8%	2.6%
% Directional			34.9%			56.2%	Intersection		4.0%			4.9%	
PM Peak Hour Factor			0.92			0.92	0.93		0.89			0.92	

Traffic Count Data Sheet

Year Counts Taken: 2011

E-W Street Gibson Blvd
N-S Street: Interstate 25Speed Limit (Gibson Blvd)= 25 MPH
Speed Limit (Interstate 25)= 35 MPH
1/26/11

UNSIGNALIZED

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Interstate 25)			Southbound (Interstate 25)		
		L*	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	44	447	0	24	403	0	7	0	93	374	0	0
7:15 AM	7:30 AM	72	250	5	42	132	128	5	0	124	502	0	63
7:30 AM	7:45 AM	64	305	7	65	127	143	8	0	105	523	0	58
7:45 AM	8:00 AM	110	295	9	47	142	172	4	0	96	481	0	76
8:00 AM	8:15 AM	41	221	8	53	130	180	3	0	85	453	0	56
8:15 AM	8:30 AM	54	204	0	43	169	0	5	0	93	504	0	0
8:30 AM	8:45 AM	66	178	0	59	148	0	6	0	98	504	0	0
8:45 AM	9:00 AM	49	194	0	54	146	0	4	0	99	418	0	0
AM Peak Hour Volumes		287	1071	29	207	531	623	20	0	410	1959	0	253
% of Total Traffic		5.3%	19.9%	0.5%	3.8%	9.9%	11.6%	0.4%	0.0%	7.6%	36.3%	0.0%	0.0%
% Directional			25.7%			25.3%	Intersection		8.0%			36.3%	
AM Peak Hour Factor			0.84			0.94	0.94		0.83			0.95	

Begin Time	End Time	Eastbound (Gibson Blvd)			Westbound (Gibson Blvd)			Northbound (Interstate 25)			Southbound (Interstate 25)		
		L*	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	63	454	0	440	238	0	3	0	54	189	0	0
4:15 PM	4:30 PM	59	460	0	445	263	0	2	0	65	187	0	0
4:30 PM	4:45 PM	63	217	7	113	360	299	2	0	89	160	0	45
4:45 PM	5:00 PM	66	177	6	108	337	288	5	0	81	228	0	50
5:00 PM	5:15 PM	64	185	8	149	324	310	2	0	63	159	0	41
5:15 PM	5:30 PM	53	178	8	123	373	300	3	0	77	187	0	67
5:30 PM	5:45 PM	43	156	0	124	259	0	3	0	79	179	0	0
5:45 PM	6:00 PM	44	132	0	105	297	0	4	0	84	135	0	0
PM Peak Hour Volumes		246	757	29	493	1394	1197	12	0	310	734	0	203
% of Total Traffic		4.6%	14.1%	0.5%	9.2%	25.9%	22.3%	0.2%	0.0%	5.8%	13.7%	0.0%	3.8%
% Directional			19.2%			57.4%	Intersection		6.0%			17.4%	
PM Peak Hour Factor			0.90			0.97	0.98		0.88			0.84	

* Eastbound Left designates the eastbound to northbound loop movement.
Southbound Left designates the southbound to eastbound loop movement.

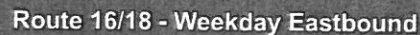
Traffic Count Data Sheet

Year Counts Taken: **2013** E-W Street Miles Rd **40** Speed Limit (Miles Rd)=
 N-S Street: Girard Blvd **35** Speed Limit (Girard Blvd)=
12/12/13

UNSIGNALIZED

Begin Time	End Time	Eastbound (Miles Rd)			Westbound (Miles Rd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	40	0	0	0	0	0	0	40	0	0	42	42
7:15 AM	7:30 AM	11	0	0	0	0	0	0	11	0	0	17	17
7:30 AM	7:45 AM	14	0	0	0	0	0	0	14	0	0	18	18
7:45 AM	8:00 AM	10	0	0	0	0	0	0	10	0	0	30	30
8:00 AM	8:15 AM	10	0	0	0	0	0	0	10	0	0	22	22
8:15 AM	8:30 AM	7	0	0	0	0	0	0	7	0	0	49	49
8:30 AM	8:45 AM	7	0	0	0	0	0	0	7	0	0	15	15
8:45 AM	9:00 AM	7	0	0	0	0	0	0	7	0	0	9	9
AM Peak Hour Volumes		45	0	0	0	0	0	0	45	0	0	87	87
% of Total Traffic		17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.0%	0.0%	0.0%	33.0%	0.0%
% Directional		17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Intersection	17.0%	0.0%	0.0%	33.0%	0.0%
AM Peak Hour Factor		0.80	#DIV/0!					0.83	0.80			0.73	

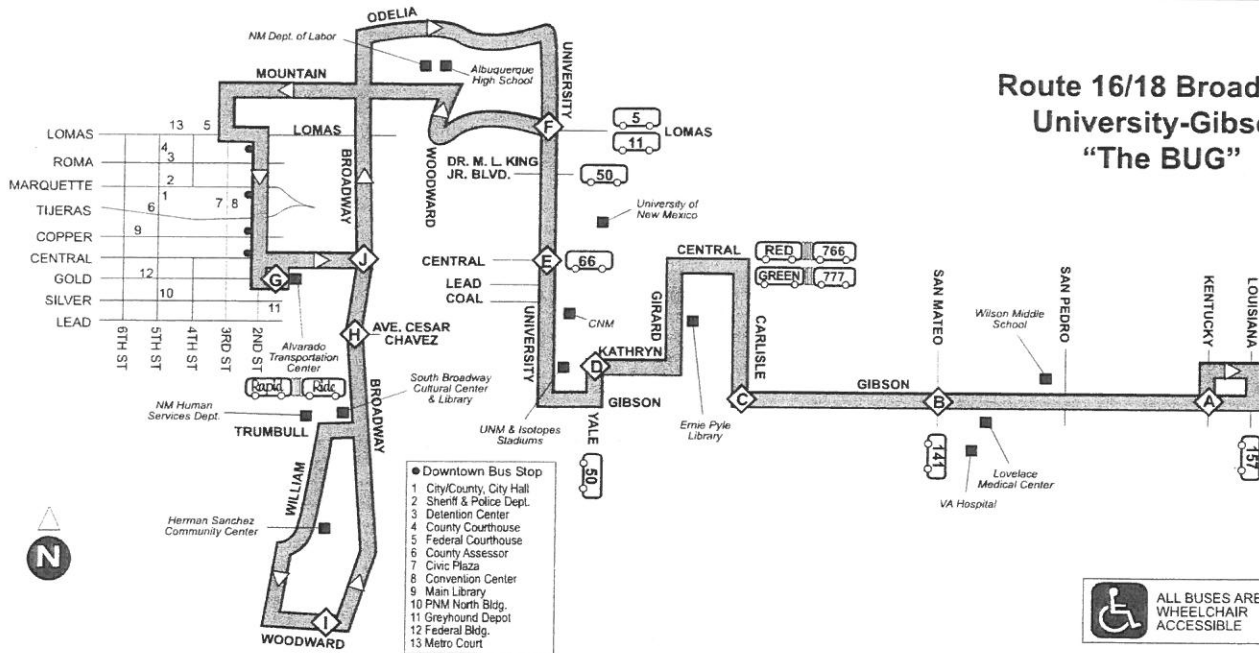
Begin Time	End Time	Eastbound (Miles Rd)			Westbound (Miles Rd)			Northbound (Girard Blvd)			Southbound (Girard Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	4	0	0	0	0	0	0	4	0	0	49	49
4:15 PM	4:30 PM	4	0	0	0	0	0	0	4	0	0	24	24
4:30 PM	4:45 PM	6	0	0	0	0	0	0	6	0	0	20	20
4:45 PM	5:00 PM	6	0	0	0	0	0	0	6	0	0	23	23
5:00 PM	5:15 PM	6	0	0	0	0	0	0	6	0	0	22	22
5:15 PM	5:30 PM	7	0	0	0	0	0	0	7	0	0	49	49
5:30 PM	5:45 PM	3	0	0	0	0	0	0	3	0	0	16	16
5:45 PM	6:00 PM	2	0	0	0	0	0	0	2	0	0	9	9
PM Peak Hour Volumes		22	0	0	0	0	0	0	22	0	0	89	89
% of Total Traffic		9.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.9%	0.0%	0.0%	40.1%	40.1%
% Directional		9.9%	0.0%	0.0%	0.0%	0.0%	0.0%	Intersection	9.9%	0.0%	0.0%	80.2%	0.0%
PM Peak Hour Factor		0.92	#DIV/0!					0.96	0.92			0.93	

Effective: 12/15/2012

BROADWAY & WOODWARD	BROADWAY & CHANIN	BROADWAY & AVENUE	BROADWAY & CENTRAL	UNIVERSITY & LOMAS	UNIVERSITY & CENTRAL	YALE & KATHRYN	GIBSON & CARLISLE	GIBSON & SAN MATEO	GIBSON & KENTUCKY
I	H	J	F	E	D	C	B	A	
6:00a	6:06a	6:10a	6:19a	6:22a	6:31a	6:44a	6:49a	6:52a	
6:45a	6:51a	6:55a	7:04a	7:07a	7:16a	7:29a	7:34a	7:37a	
7:32a	7:38a	7:42a	7:51a	7:54a	8:03a	8:16a	8:21a	8:24a	
8:17a	8:23a	8:27a	8:36a	8:39a	8:48a	9:01a	9:06a	9:09a	
9:07a	9:13a	9:17a	9:26a	9:29a	9:38a	9:51a	9:56a	9:59a	
9:56a	10:02a	10:06a	10:15a	10:18a	10:27a	10:40a	10:45a	10:48a	
10:47a	10:53a	10:57a	11:06a	11:09a	11:18a	11:31a	11:36a	11:39a	
11:34a	11:40a	11:44a	11:53a	11:56a	12:05p	12:18p	12:23p	12:26p	
12:22p	12:28p	12:32p	12:41p	12:44p	12:53p	1:06p	1:11p	1:14p	
1:09p	1:15p	1:19p	1:28p	1:31p	1:40p	1:53p	1:58p	2:01p	
1:59p	2:05p	2:09p	2:18p	2:21p	2:30p	2:43p	2:48p	2:51p	
2:48p	2:54p	2:58p	3:07p	3:10p	3:19p	3:32p	3:37p	3:40p	
3:38p	3:44p	3:48p	3:57p	4:00p	4:09p	4:22p	4:27p	4:30p	
4:25p	4:31p	4:35p	4:44p	4:47p	4:56p	5:09p	5:14p	5:17p	
5:14p	5:20p	5:24p	5:33p	5:36p	5:45p	5:58p	6:03p	6:06p	
6:00p	6:06p	6:10p	6:19p	6:22p	6:31p	6:44p	6:49p	6:52p	

Route / Ruta 16/18 Broadway/University/Gibson

Effective: 12/15/2012



Route 16/18 - Saturday Westbound

A	B	C	D	E	F	G	H	I
6:25a	6:29a	6:34a	6:48a	6:57a	7:00a	7:12a	7:20a	7:25a
7:30a	7:34a	7:39a	7:53a	8:02a	8:05a	8:17a	8:25a	8:30a
8:35a	8:39a	8:44a	8:58a	9:07a	9:10a	9:22a	9:30a	9:35a
9:40a	9:44a	9:49a	10:03a	10:12a	10:15a	10:27a	10:35a	10:40a
10:45a	10:49a	10:54a	11:08a	11:17a	11:20a	11:32a	11:40a	11:45a
11:40a	11:44a	11:49a	12:03p	12:12p	12:15p	12:27p	12:35p	12:40p
12:25p	12:29p	12:34p	12:48p	12:57p	1:00p	1:12p	1:20p	1:25p
1:10p	1:14p	1:19p	1:33p	1:42p	1:45p	1:57p	2:05p	2:10p
1:55p	1:59p	2:04p	2:18p	2:27p	2:30p	2:42p	2:50p	2:55p
2:40p	2:44p	2:49p	3:03p	3:12p	3:15p	3:27p	3:35p	3:40p
3:25p	3:29p	3:34p	3:48p	3:57p	4:00p	4:12p	4:20p	4:25p
4:10p	4:14p	4:19p	4:33p	4:42p	4:45p	4:57p	5:05p	5:10p
4:55p	4:59p	5:04p	5:18p	5:27p	5:30p	5:42p	5:50p	5:55p

Route 16/18 - Saturday Eastbound

I	H	J	F	E	D	C	B	A
6:20a	6:26a	6:30a	6:39a	6:42a	6:51a	7:04a	7:09a	7:12a
7:30a	7:36a	7:40a	7:49a	7:52a	8:01a	8:14a	8:19a	8:22a
8:35a	8:41a	8:45a	8:54a	8:57a	9:06a	9:19a	9:24a	9:27a
9:40a	9:46a	9:50a	9:59a	10:02a	10:11a	10:24a	10:29a	10:32a
10:30a	10:36a	10:40a	10:49a	10:52a	11:01a	11:14a	11:19a	11:22a
11:15a	11:21a	11:25a	11:34a	11:37a	11:46a	11:59a	12:04p	12:07p
12:00p	12:06p	12:10p	12:19p	12:22p	12:31p	12:44p	12:49p	12:52p
12:45p	12:51p	12:55p	1:04p	1:07p	1:16p	1:29p	1:34p	1:37p
1:30p	1:36p	1:40p	1:49p	1:52p	2:01p	2:14p	2:19p	2:22p
2:15p	2:21p	2:25p	2:34p	2:37p	2:46p	2:59p	3:04p	3:07p
3:00p	3:06p	3:10p	3:19p	3:22p	3:31p	3:44p	3:49p	3:52p
3:45p	3:51p	3:55p	4:04p	4:07p	4:16p	4:29p	4:34p	4:37p
4:30p	4:36p	4:40p	4:49p	4:52p	5:01p	5:14p	5:19p	5:22p
5:15p	5:21p	5:25p	5:34p	5:37p	5:46p	5:59p	6:04p	6:07p

Route 16/18 - Sunday Westbound

A	B	C	D	E	F	G	H	I
9:00a	9:04a	9:09a	9:23a	9:32a	9:35a	9:47a	9:55a	10:00a
10:05a	10:09a	10:14a	10:28a	10:37a	10:40a	10:52a	11:00a	11:05a
11:10a	11:14a	11:19a	11:33a	11:42a	11:45a	11:57a	12:05p	12:10p
12:15p	12:19p	12:24p	12:38p	12:47p	12:50p	1:02p	1:10p	1:15p
1:20p	1:24p	1:29p	1:43p	1:52p	1:55p	2:07p	2:15p	2:20p
2:25p	2:29p	2:34p	2:48p	2:57p	3:00p	3:12p	3:20p	3:25p
3:30p	3:34p	3:39p	3:53p	4:02p	4:05p	4:17p	4:25p	4:30p

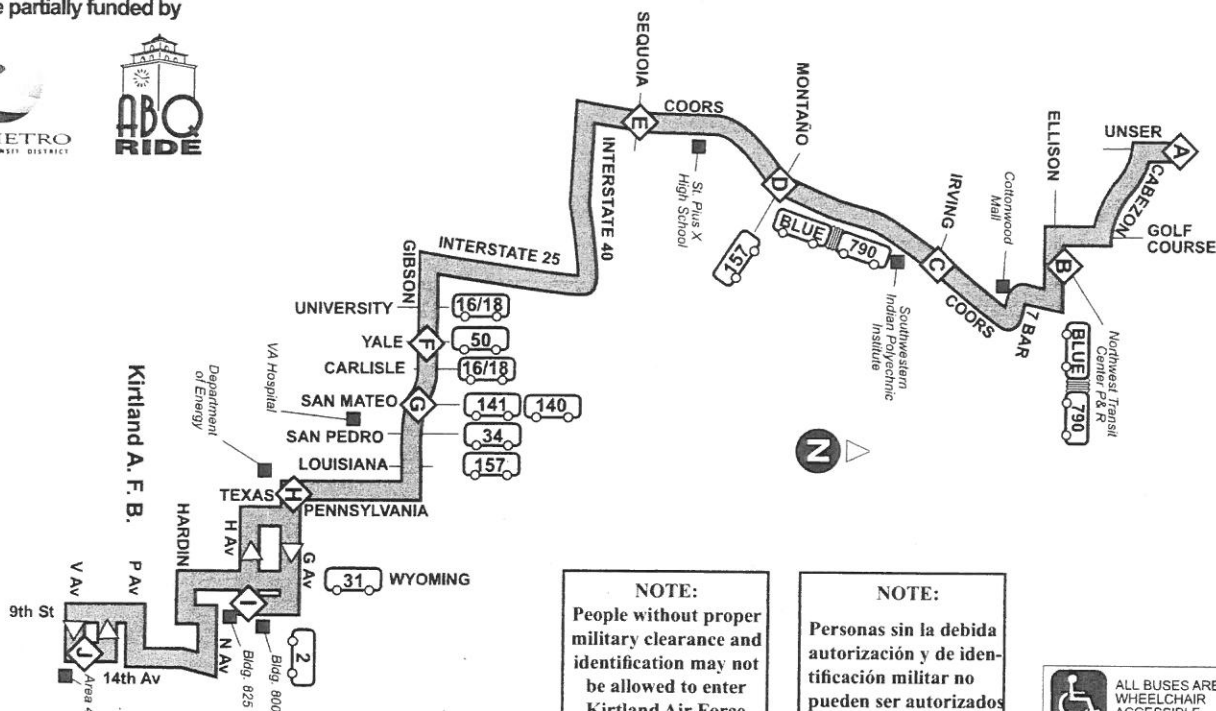
Route 16/18 - Sunday Eastbound

I	H	J	F	E	D	C	B	A
9:00a	9:06a	9:10a	9:19a	9:22a	9:31a	9:44a	9:49a	9:52a
10:05a	10:11a	10:15a	10:24a	10:27a	10:36a	10:49a	10:54a	10:57a
11:10a	11:16a	11:20a	11:29a	11:32a	11:41a	11:54a	11:59a	12:02p
12:15p	12:21p	12:25p	12:34p	12:37p	12:46p	12:59p	1:04p	1:07p
1:20p	1:26p	1:30p	1:39p	1:42p	1:51p	2:04p	2:09p	2:12p
2:25p	2:31p	2:35p	2:44p	2:47p	2:56p	3:09p	3:14p	3:17p
3:30p	3:36p	3:40p	3:49p	3:52p	4:01p	4:14p	4:19p	4:22p

Route / Ruta 96 Crosstown Commuter

Effective: 12/15/2012

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 PARK	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 PARK	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.

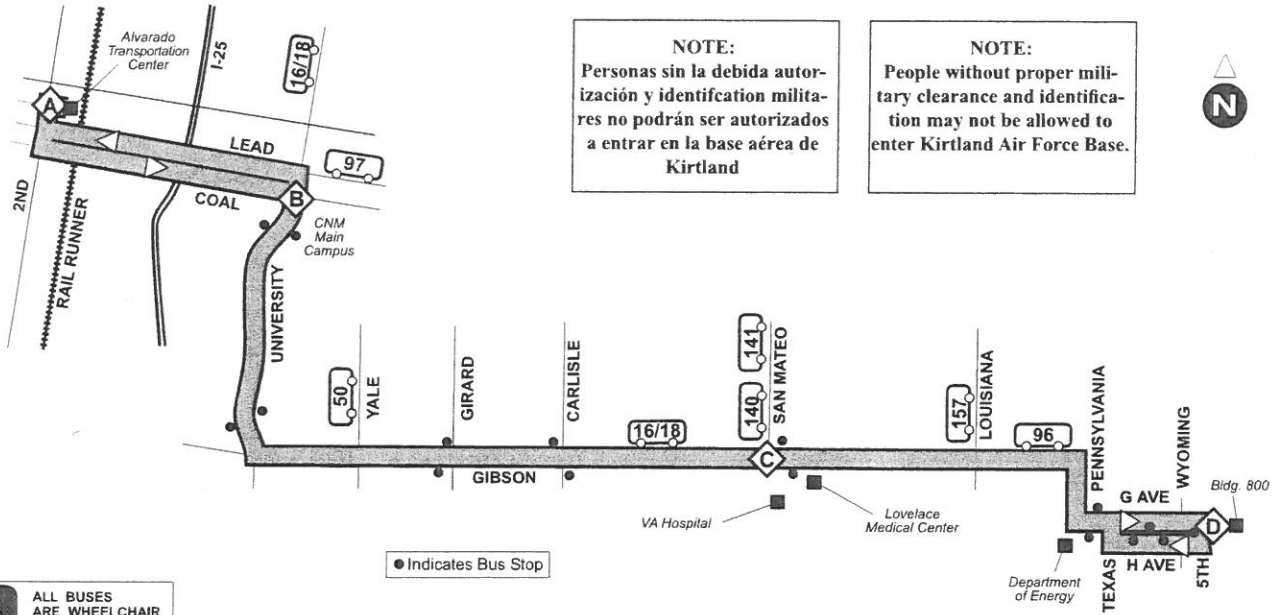
IMPORTANTE:

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

Downtown - Kirtland AFB Limited

Effective: 12/15/2012



Kirtland Air Force Base

Route 217 - Weekday Eastbound

Route 217 - Weekday Westbound

ALVARADO TRANSPORTATION CENTER	UNIVERSITY & COAL	GIBSON & SAN MATEO	BUILDING 800 KIRTLAND AFB
A	B	C	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	GIBSON & SAN MATEO	UNIVERSITY & COAL	ALVARADO TRANSPORTATION CENTER
D	C	B	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

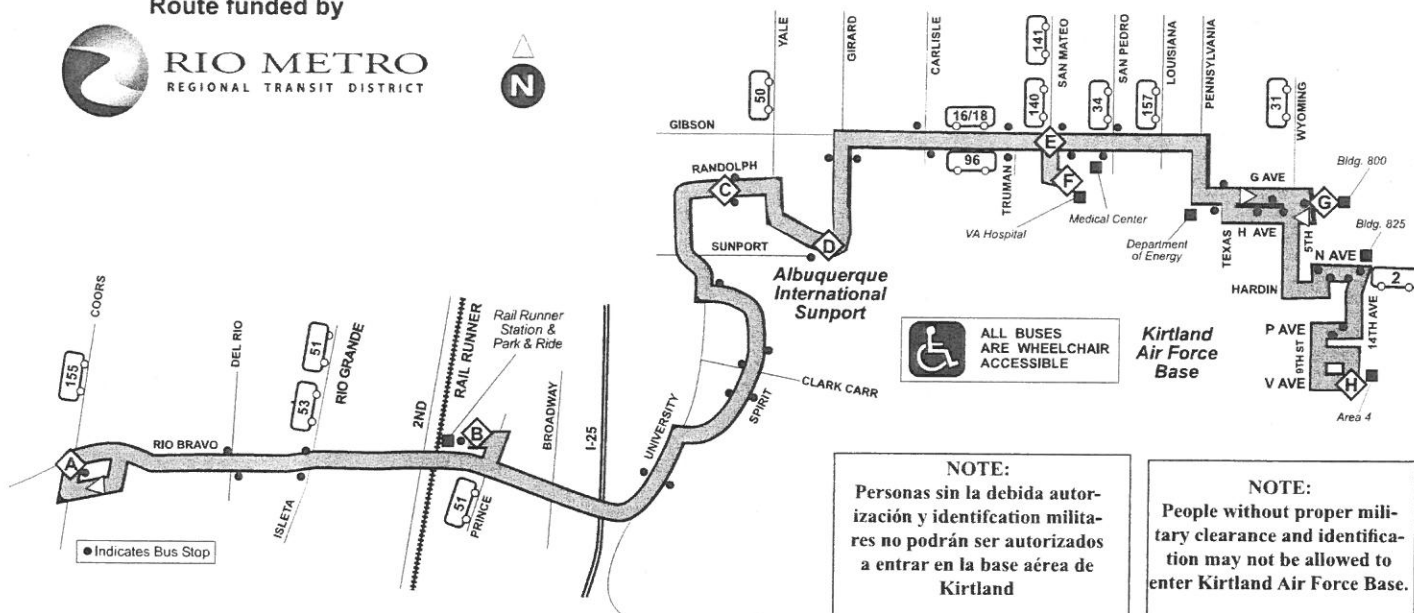
** For these trips the bus will wait at the ATC for passengers to transfer from the NM Rail Runner Express.

** 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: 12/15/2012

Route funded by



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	ARRIVE	DEPART	ARRIVE	DEPART	ARRIVE	DEPART	ARRIVE	DEPART	ARRIVE
A	B	C	D	E	F	G	H	VA		
.....	6:11a	.....	6:23a	.....	6:30a	.....	6:43a	VA		
5:53a	6:05a	6:11a	6:20a	.....	.....	6:35a	6:43a	KAFB		
.....	7:07a	7:16a	.....	.....	.....	7:33a	7:44a	KAFB		
6:49a	7:01a	7:07a	.....	7:19a	.....	7:26a	.....	VA		
2:28p	2:40p	2:46p	2:58p	3:03p	.....	3:10p	.....	VA		
5:40p	5:52p	5:58p	6:08p	6:13p	6:20p	.....	6:29p	KAFB		

Route 222 - Weekday Westbound

COORS & RIO BRAVO	DEPART RAIL RUNNER STATION	ARRIVE	DEPART	ARRIVE	DEPART	ARRIVE	DEPART	ARRIVE	DEPART	ARRIVE
A	B	C	D	E	F	G	H	VA		
7:38a	7:26a	7:26a	7:13a	7:10a	7:10a	7:01a	6:52a	VA		
2:58p	2:46p	2:40p	2:24p	2:21p	2:10p	.....	.....	VA		
4:51p	4:39p	4:32p	4:16p	4:16p	4:05p	.....	.....	VA		
6:11p	5:58p	5:51p	5:33p	5:33p	5:22p	.....	.....	VA		

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.

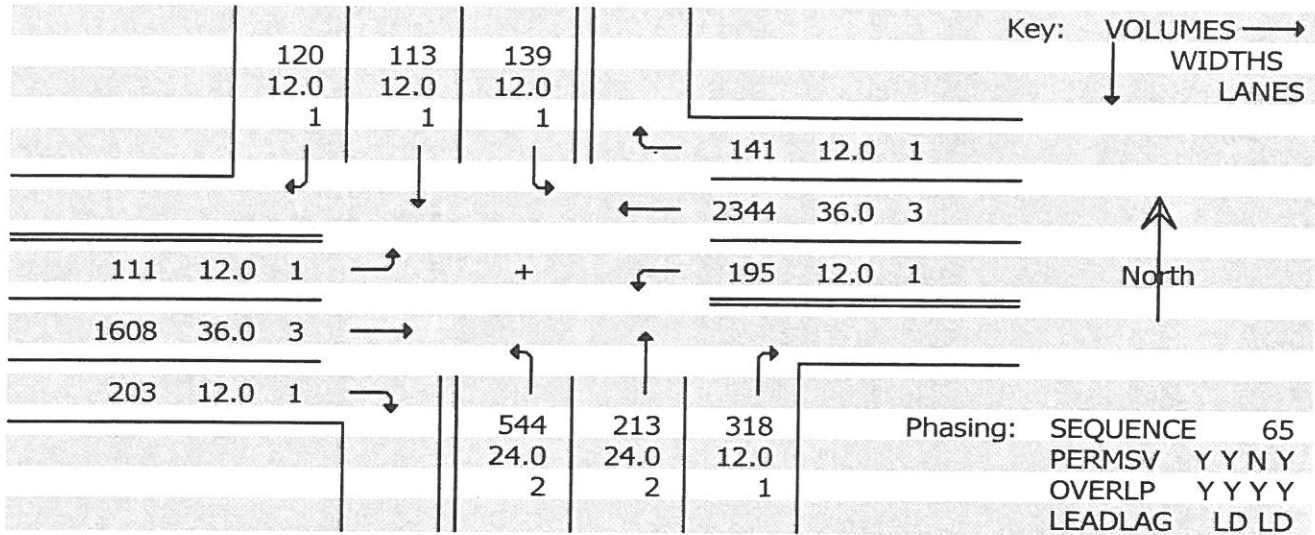
KAFB: These buses serve only the stops on:

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

TEAPAC[Ver 8.61.01] - HCM Input Worksheet

Intersection # 1 -

Area Location Type: NONCBD



	RT	SB	LT	RT	WB	LT	RT	NB	LT	RT	EB	LT
Heavy veh, %HV	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Pk-hr fact, PHF	.92	.92	.92	.92	.92	.92	.92	.92	.92	.92	.92	.92
Pretimed or Act	A	A	A	A	A	A	A	A	A	A	A	A
Strtup lost, l1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext eff grn, e	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival typ, AT	3	3	3	3	3	3	3	3	3	3	3	3
Ped vol, vped		0			0			0			0	
Bike vol, vbic		0			0			0			0	
Parking locatns		NO			NO			NO			NO	
Park mnvrs, Nm		0			0			0			0	
Bus stops, NB		0			0			0			0	
Grade, %G		.0			.0			.0			.0	

Sq 65 LD/LD	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
North						
C=130"	G= 5.6" Y+R= 5.0"	G= 17.7" Y+R= 5.0"	G= 14.4" Y+R= 5.0"	G= 6.3" Y+R= 5.0"	G= -1.5" Y+R= 5.0"	G= 57.5" Y+R= 5.0"

TEAPAC[Ver 8.61.01] - Capacity Analysis Summary (HCM 2010)

Intersection Averages for Int # 1 -
 V/C 0.803 (Critical V/C 0.950) Control Delay 43.9 Level of Service D+

Sq 65 LD/LD	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
North						
Cmax= 130" Cavg= 123"	Gmax= 28.3" Gavg= 23.9" Y+Rc= 5.0"		Gmax= 14.4" Gavg= 11.7" Y+Rc= 5.0"	Gmax= 6.3" Gavg= 6.3" Y+Rc= 5.0"	Gmax= 61.0" Gavg= 61.0" Y+Rc= 5.0"	
	Gmax= 5.6" Gavg= 5.6" Y+Rc= 5.0"	Gmax= 37.1" Gavg= 30.0" Y+Rc= 5.0"		Gmax= 9.8" Gavg= 9.6" Y+Rc= 5.0"	Gmax= 57.5" Gavg= 57.6" Y+Rc= 5.0"	
	23.9"	11.7"	6.3"	61.0"		
	5.6"	30.0"	9.6"	57.6"		

Lane Group	Width/ Lanes	g/C Max	Avg	SatFlo	Capcty	Adj Volume	v/c	HCM Delay	L S	Queue Model 1
------------	-----------------	------------	-----	--------	--------	---------------	-----	--------------	--------	------------------

SB Approach 55.7 E+

RT	12/1	0.031	0.095	1568	229	130	0.567	49.7	D	159 ft
TH	12/1	0.111	0.095	1845	176	123	0.701	58.7	*E+	164 ft
LT	12/1	0.043	0.046	1757	217	151	0.694	58.5	E+	197 ft

NB Approach 48.1 D

RT	12/1+			1568	506	172	0.684	37.9	D+	334 ft
RT+TH	24/2-	0.285	0.244	3512	857	406	0.271	37.7	D+	128 ft
LT	24/2	0.217	0.194	3412	664	591	0.890	58.2	*E+	349 ft

WB Approach 52.6 D

RT	12/1	0.031	0.496	1568	850	153	0.180	14.3	B+	99 ft
TH	36/3	0.469	0.496	5025	2495	2548	1.021	54.5	*F	931 ft
LT	12/1	0.076	0.078	1757	237	212	0.894	56.4	E+	202 ft

EB Approach 27.2 C+

RT	12/1	0.031	0.468	1568	1040	221	0.212	8.1	A	101 ft
TH	36/3	0.442	0.468	5025	2356	1748	0.742	27.7	C	474 ft
LT	12/1	0.049	0.051	1757	148	121	0.817	55.5	*E+	127 ft

TEAPAC[Ver 8.61.01] - HCM2010 Summary Worksheet

Equil Cycle 123.												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
HCM Nema #	5	2	12	1	6	16	3	8	18	7	4	14
Volume, veh/h	121	1748	221	212	2548	153	591	232	346	151	123	130
Adj SatFlow	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Capacity, veh/h	148	2356	1040	237	2495	850	664	857	506	217	176	229
Prop Arr Green	.051	.469	.469	.079	.497	.497	.195	.244	.244	.046	.095	.095
App Vol, veh/h	2090.0			2913.0			1169.0			404.0		
App Del, s/veh	27.2			52.6			48.1			55.7		

Timer #	1	2	3	4	5	6	7	8
Case No	1.	3.	2.	3.	1.	3.	1.	3.
G+Y+Rc, s	14.65	62.61	28.90	16.69	11.26	66.00	10.62	34.97
Y+Rc, s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
MAH, s	3.76	3.70	3.76	3.84	3.76	3.69	3.76	3.87

LT Movement Data

Assigned Mmnt	1	0	3	0	5	0	7	0
SatFlow, veh/h	1757.	0.	3412.	0.	1757.	0.	1757.	0.

TH Movement Data

Assigned Mmnt	0	2	0	4	0	6	0	8
SatFlow, veh/h	0.	5025.	0.	1845.	0.	5025.	0.	3512.

RT Movement Data

Assigned Mmnt	0	12	0	14	0	16	0	18
SatFlow, veh/h	0.	1568.	0.	1568.	0.	1568.	0.	1568.

LT Lane Group Data

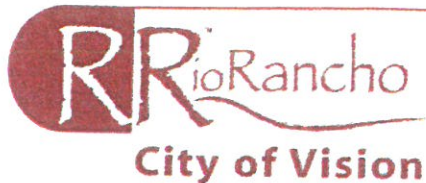
Grp Volume, v/h	212.0	0.0	591.0	0.0	121.0	0.0	151.0	0.0
Grp SatFlo, v/h	1757.	0.	1706.	0.	1757.	0.	1757.	0.
g_s, s	7.643	0.000	20.732	0.000	4.363	0.000	5.622	0.000
Unif d1, s/veh	25.860	0.000	48.199	0.000	28.713	0.000	50.702	0.000
Inc d2, s/veh	30.547	0.000	9.987	0.000	26.768	0.000	7.794	0.000
D3 d3, s/veh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TH Lane Group Data

Grp Volume, v/h	0.0	1748.0	0.0	123.0	0.0	2548.0	0.0	232.0
Grp SatFlo, v/h	0.	1675.	0.	1845.	0.	1675.	0.	1756.
g_s, s	0.000	34.803	0.000	7.941	0.000	60.997	0.000	6.569
Unif d1, s/veh	0.000	26.565	0.000	53.881	0.000	30.927	0.000	37.593
Inc d2, s/veh	0.000	1.141	0.000	4.776	0.000	23.616	0.000	0.063
D3 d3, s/veh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

RT Lane Group Data

Grp Volume, v/h	0.0	221.0	0.0	130.0	0.0	153.0	0.0	346.0
Grp SatFlo, v/h	0.	1568.	0.	1568.	0.	1568.	0.	1568.
g_s, s	0.000	6.783	0.000	9.483	0.000	6.080	0.000	23.567
Unif d1, s/veh	0.000	8.098	0.000	48.832	0.000	14.261	0.000	36.177
Inc d2, s/veh	0.000	0.037	0.000	0.823	0.000	0.037	0.000	1.738
D3 d3, s/veh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



Development Services Department
Engineering Division

Mr. David Pennella, Transportation Program Manager
Mid-Region Council of Governments
809 Copper Ave. NW
Albuquerque, NM 87102

Re: Access Request for Proposed Chick Fil-A in Rio Rancho

Dear Mr. Pennella:

Submitted for consideration by the Transportation Coordinating Committee (TCC) is a request for additional roadway access on the east side of Unser Boulevard approximately 640 feet south of Southern Blvd. This proposed new access would be limited to right-turn-in, right-turn-out traffic movements only. Five (5) copies of the Traffic Impact Study are attached together with five (5) copies of an Access Justification Study describing this proposed change.

Mr. Josh Skarsgard, the developer, in conjunction with Chick Fil-A, requests approval of the requested access change. Mr. Terry O. Brown, agent for the applicant, can be reached at (505) 883-8807 or via e-mail at tobe@swcp.com.

This change in access will benefit the adjacent transportation system in two ways: First, it will result in a reduction of the overall delay at Southern Blvd. / 21st St., and secondly, the change will allow this property to be developed. It has long been vacant and it is believed that adverse access conditions is the reason that it has not been developed. As a condition for approval of this additional access at Driveway A, the City is requiring the developer to construct a northbound right turn deceleration lane on Unser Blvd.

We request that this request be submitted to the Roadway Access Committee (R.A.C.) for action at their next meeting.

If you have questions, please contact me at 505-891-5059, or e-mail at dserrano@ci.riio-rancho.nm.us.

Sincerely,


David D. Serrano



Mid-Region Metropolitan Planning Organization

Mid-Region Council of Governments
809 Copper Avenue NW
Albuquerque, New Mexico 87102
(505) 247-1750-tel. (505) 247-1753-fax
www.mrcog-nm.gov

ROADWAY ACCESS MODIFICATION REQUEST FORM

GENERAL INFORMATION

Date: September 23, 2014

Sponsoring Agency: City of Rio Rancho

Contact Name: David D. Serrano, P.E.

Phone: 891-5059

Email: dserrano@ci.rio-rancho.nm.us

Applicant: City of Rio Rancho

Contact Name: David D. Serrano, P.E.

Phone: 891-5059

Email: dserrano@ci.rio-rancho.nm.us

MODIFICATION INFORMATION

Facility: Unser Blvd.

Location of Change: East side of Unser Blvd. approximately 640 feet south of Southern Blvd. (centerline to centerline)

Current Policy for Facility and Location: Quarter Mile spacing for partial access driveways.

Nature of the Change: Add right-in, right-out driveway

Reason for the Change: To serve proposed Chick Fil-A and surrounding properties.

IDENTIFICATION OF ANALYSIS INPUTS

Implementation Year: 2015

Forecast Year: 2035

Trip Generation for Proposed Development:

Noon Peak – 202 Enter / 221 Exit
PM Peak – 105 Enter / 101 Exit

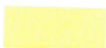
Days/Peak Hours Analyzed: Noon and PM Peak

Trip Generation Numbers: Local Data – applied 20% pass-by trip reduction.

Level of Analysis Required: Site Traffic Analysis and Access Justification Study

Additional Assumptions/Inputs Used in the Analysis: HCM 2010

Existing Proposed

-  Facility with HOV Potential
-   Limited Access Roadway
(see Addendum for additional information)
-   Principal Arterial
-   Minor Arterial
-   Collector

Dashed lines indicate proposed alignments.

-   Grade Separation
-   Interchange

Rainbow

Location Study Corridor
(where proposed alignments have not been established but are under consideration)
Subarea
(where street network evaluation is in progress)

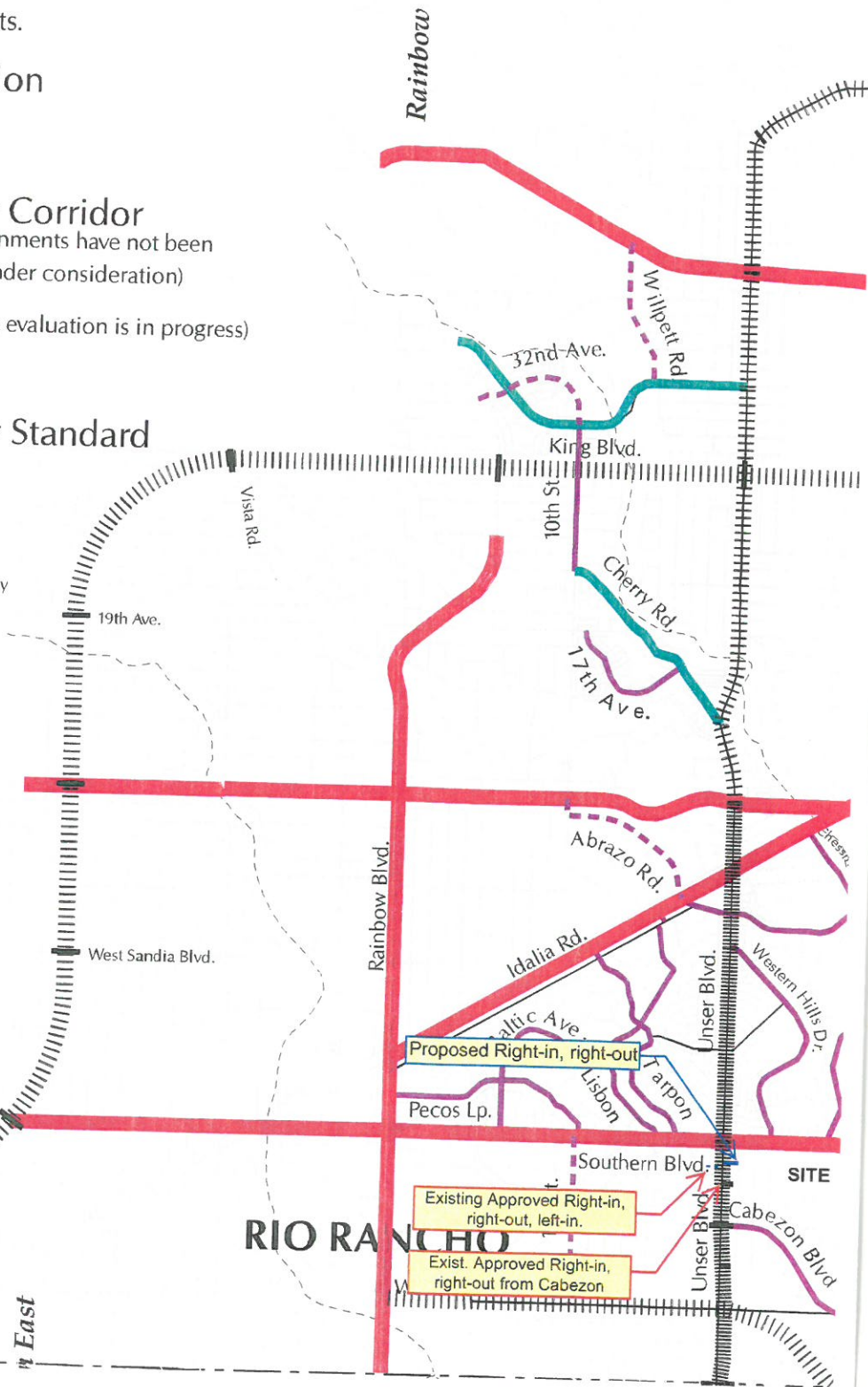
-  Existing Freeway
-  Existing-Not to Freeway Standard

Note: Freeways include I-25, I-40 and
Paseo del Norte (Eagle Ranch to Louisiana)

NOTE: Major streets are classified according to their anticipated traffic service function, not by the size of the facility. Facilities shown as "Limited Access" have access limitations greater than normally would be anticipated. Subareas and Corridors are identified for the conduct of intensive systems planning and location studies. Facilities are shown as existing if they are officially platted with some right-of-way dedicated, not necessarily the amount needed. Right-of-way standards for streets classified by this map and more detailed information regarding the items noted above are contained in the "Addendum to the Long Range Roadway System for the Albuquerque Urban Area".

Northwest Loop

Rainbow



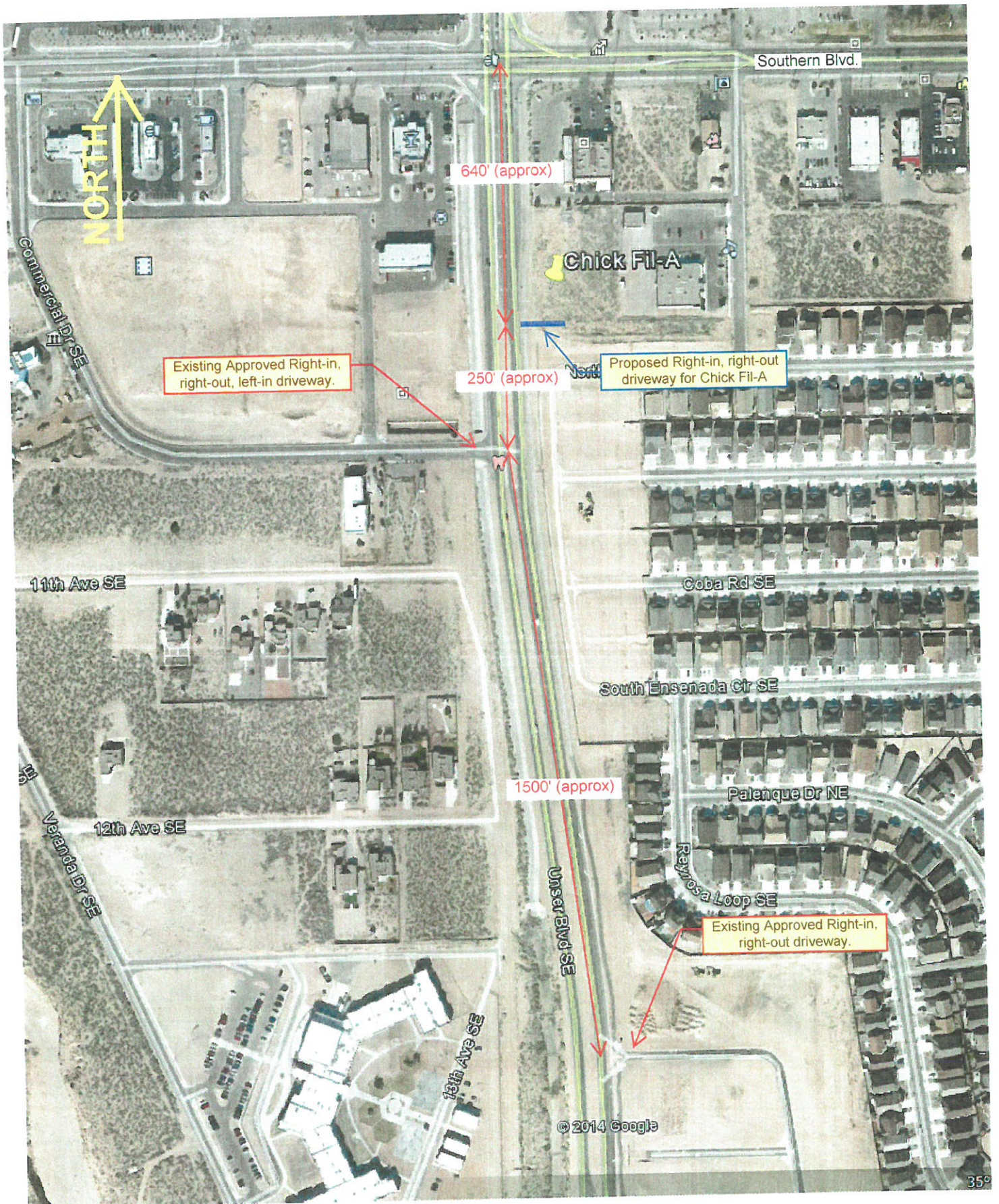
SANDOVAL CO.

RIO RANCHO

Proposed Right-in, right-out

Existing Approved Right-in, right-out, left-in.

Exist. Approved Right-in, right-out from Cabezón





Chapel
 5200 Buford Hwy. Bldg.
 Atlanta, Georgia 30349-2998

Revisions:
 Mark Date By
 1 06-20-14
 2 07-10-14
 3 07-10-14

Mark Date By
 1 06-20-14
 2 07-10-14
 3 07-10-14

Mark Date By
 1 06-20-14
 2 07-10-14
 3 07-10-14

Seal
 C.R.H.O.
 Licensed Professional Engineer
 101 South 7th Street, Suite 200
 Tallahassee, Florida 32301
 Tel: 904.832-1524
 Fax: 904.832-1510

STORE
 UNSEER @ SOUTHERN

SEC UNSEER BLVD. SE
 @ SOUTHERN BLVD. SE
 RICHMOND, VA

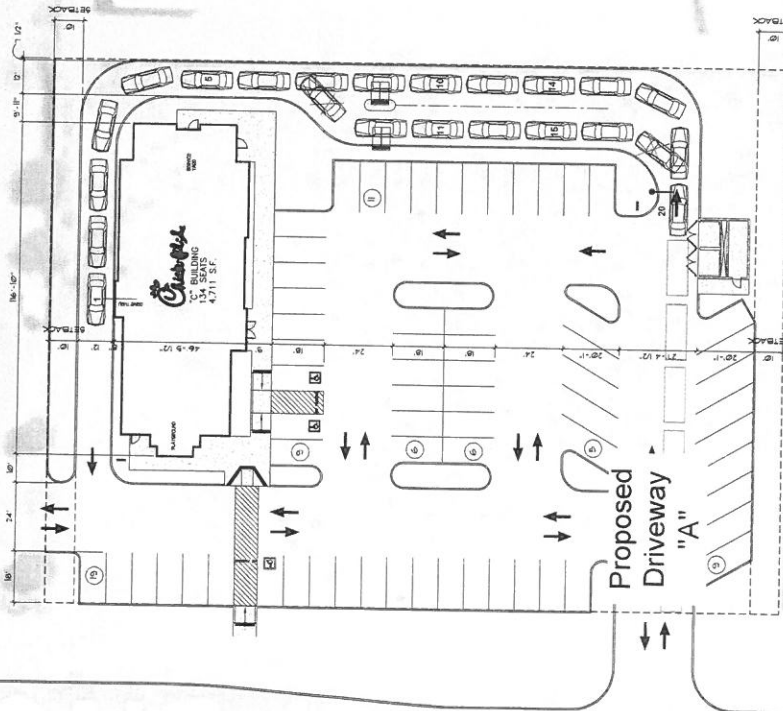
SHEET TITLE
 PRELIMINARY
 SITE PLAN

VERSION: 8.6
 ISSUE DATE: 03-2014

Job No. : 14-165
 Store :
 Date : 06-20-14
 Drawn By :
 Checked By :
 Sheet

PSP-4
 A-2a

DESIGN MATRIX		PARKING CALCULATION	
BUILDING SETBACK	N:0' S: 10' E:0' W: 10' FROM UNSEER	☒ YES	
LANDSCAPE SETBACK	N:0' S: 10' E:0' W: 0'		
REGULAR STALL SIZE	9'X18'		
DRIVE AISLE	24'		
PARKING FORMULA	10/ 1,000 SF. = 48		
PARKING REQUIREMENT	OR 1/4SEATS = 34		
OVERHANG	2' NOT INTO PATHWAY OR LANDSCAPE BUFFER		
PATIO SEATING			
TE FRONT OR SIDE LOADING	FRONT LOADING AND SETBACK 5' FROM DRIVE-AISLE		
LOADING ZONE	12' X 55'		



1 PRELIMINARY SITE PLAN
 1" = 20'-0"

65 SPACES TOTAL
 APPROXIMATE PARCEL AREA : 45,930 SF.

Wednesday, April 16, 2014

Kristal Metro, P.E.

Transportation Planning, Planning Department
City of Albuquerque
600 2nd St. NW
Albuquerque, NM 87102

Re: Sunport ACE Project

Dear Kristal:

Attached are two (2) copies of the revised DRAFT Traffic Impact Study and the Access Justification Study for the referenced project for your review and comment.

The Sunport ACE project Traffic Impact Study that was dated March 28, 2014 has been revised to address a software issue which inadvertently reported the LOS / delay for the westbound left turn movement on Gibson Blvd. at Driveway with excessively long delays. Those long delays did not correlate at all with the SimTraffic micro-simulation at the driveway and, it was discovered, that Synchro 8 was not adjusting the delay calculations at the driveway to account for the effect of the upstream signal at Gibson Blvd. / Girard Blvd. I communicated with the Trafficware corporation to correct the problem. When that correction was made, the effect at Driveway "A" was substantial. This new report corrects for that calculation. Please discard the March 28 reports (TIS and Access Study).

The only changes to these reports are 1) the above mentioned correction of the delay calculation at the proposed Driveway "A" on Gibson Blvd., and 2) the recommended design of Driveway "A" with two entering lanes instead of one recommended by John MacKenzie.

Please call me if you have questions.

Best Regards,



Terry O. Brown, P.E.

attachments as noted

cc: **Tony J. Loyd, City of Albuquerque**
Michael Provine, MCA w/1 copy of report
Jackie Fishman, Consensus Planning

Wednesday, April 16, 2014

Kristal Metro, P.E.
Transportation Planning, Planning Department
City of Albuquerque
600 2nd St. NW
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Terry O. Brown, P.E.

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