KIRTLAND AIR FORCE BASE
ENHANCED USE LEASE / MAX Q

TRAFFIC IMPACT ANALYSIS

INITIAL SUBMITTAL

NOVEMBER 20, 2019

Prepared For:

THUNDERBIRD KIRTLAND DEVELOPMENT, LLC
8501 WASHINGTON STREET, NE
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Engineering

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Advanced Technologies

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I. INTRODUCTION AND SUMMARY

The Kirtland Air Force Base (KAFB) Enhanced Use Leasing (EUL) project is a redevelopment of existing land within the boundaries of KAFB south of Gibson Boulevard between Carlisle and San Mateo Boulevards. The project proposes to move the fence boundary of KAFB south to allow public access to a significant portion of the EUL site. The project area will be a mix of office and flex-space uses along with hotel, restaurant, office, and retail uses that are expected to primarily serve the development. Mixed use residential development will be located above select retail buildings.

A vicinity map is shown in Figure 1 and a conceptual site plan is shown in Figure 2. Final land uses assumptions are not known at this time and the assumptions used in this report are considered conservative approximations of the land uses to be expected on the site.

A. STUDY PURPOSE

The purpose of the traffic study is to determine the impacts of the proposed development on the surrounding roadway network, evaluate the operation of proposed site entrances, and to recommend any mitigation measures that may be necessary to support the additional traffic generated by the proposed development.

B. EXECUTIVE SUMMARY

1. SITE LOCATION AND STUDY AREA

The study will include analysis of the following intersections:

- Gibson & Carlisle Boulevard (existing signalized intersection)
- Gibson & Maxwell Street (existing signalized intersection)
- Gibson & Quincy Street (existing unsignalized intersection)
- Gibson & Jackson Street (existing unsignalized intersection)
- Gibson & Truman Street (existing signalized intersection)
- Gibson & San Mateo Boulevard (existing signalized intersection)
- 2 Future right-in/right-out only driveways onto Gibson
- 1 Future right-in/right-out only driveway onto Carlisle
- 1 Future right-in only driveway onto Truman

The intersection evaluations include analysis for the AM and PM peak hours for the following traffic conditions:

- Existing traffic (2019)
- 2030 No Build (traffic without proposed development or future road network)
- 2030 Build (traffic with proposed development and future road network)

2. PRINCIPAL FINDINGS

The traffic analysis shows that 2 intersections do not operate at acceptable levels of service under existing 2019, 2030 No Build, and 2030 Build, particularly in the PM peak hour.

In the existing condition, the signalized intersections operate at acceptable levels of service with the exception of the Gibson and Truman intersection which operates at LOS F in the PM peak hour. Most intersections also have movements that operate at LOS E in the PM peak hour. It is evident the large employers of the area such as Albuquerque Sunport, KAFB, and Sandia National Laboratories have a tremendous impact on traffic operations.

In the No Build condition, the signalized intersections will continue to operate at acceptable levels of service, except the two intersections of Gibson and Truman and Gibson and Carlisle. Both unsignalized intersections have movements that are expected to degrade from LOS E to LOS F in the PM peak hour.

In the Build condition, the signalized intersections will continue to operate at acceptable levels of service, except the intersections of Gibson and Truman and Gibson and Carlisle. The northbound right movements onto Gibson for traffic exiting the site are generally expected to operate at a poor LOS due to the high level of eastbound through traffic. This is particularly true in the AM peak hour when traffic to KAFB and SNL is in the adjacent eastbound lanes.

Geometric improvements add turn lanes

Traffic operational issues identified at the following signalized intersections are explained in greater detail below.

a) *Maxwell and Gibson*

Given the acceptable performance of the Maxwell and Gibson signalized intersection, trips may be diverted from other driveways exiting the site in favor on the Maxwell driveway. This may improve overall operation of other driveways but worsen the operation of the Maxwell driveway. This analysis did not make these adjustment to be consistent with the developed trip distribution and assignments.

b) *Jackson and Gibson*

The Jackson and Gibson unsignalized intersection is proposed to have restricted access with a right in/right out driveway to the proposed development. An eastbound left turn lane may also be considered. Under existing conditions, few vehicles are performing southbound left turns (just six vehicles in the six hours of the count). This is likely due to the large volume of traffic on Gibson, and the availability of alternate routes for those destined to the east.

c) *Truman and Gibson*

The Truman and Gibson signalized intersection operates at a poor LOS in all analysis years due to the available laneage for the trips exiting the KAFB in the PM peak hour. Northbound Truman has a combined through/left lane and a dedicated right turn lane, which requires all northbound through movements to wait behind traffic turning left. To create separate left and through lanes right-of-way acquisition would be required along the northeast block of Truman and Gibson. The resulting impact to business access (Taco Bell/KFC) maybe excessive due to site circulation for those parcels.

3. RECOMMENDATIONS

a) *Dedicated Right Turn Lanes*

The addition of dedicated eastbound right turn lanes entering the site is recommended. The City of Albuquerque Development Process Manual indicates a dedicated right turn lane is warranted on roadways with a design speed of 30-40 MPH and turning volume of 50 vehicles per hour.

b) *Quincy and Gibson*

As identified by the site plan, Quincy and Gibson is expected to become a signalized intersection and was evaluated with a signal in the build analysis. The analysis found that peak hour traffic volumes signal warrant is satisfied in AM and PM peak hour for the Quincy intersection. Dual northbound left turn lanes are recommended at the intersection of Quincy and Gibson.

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FIGURE 1
VICINITY MAP

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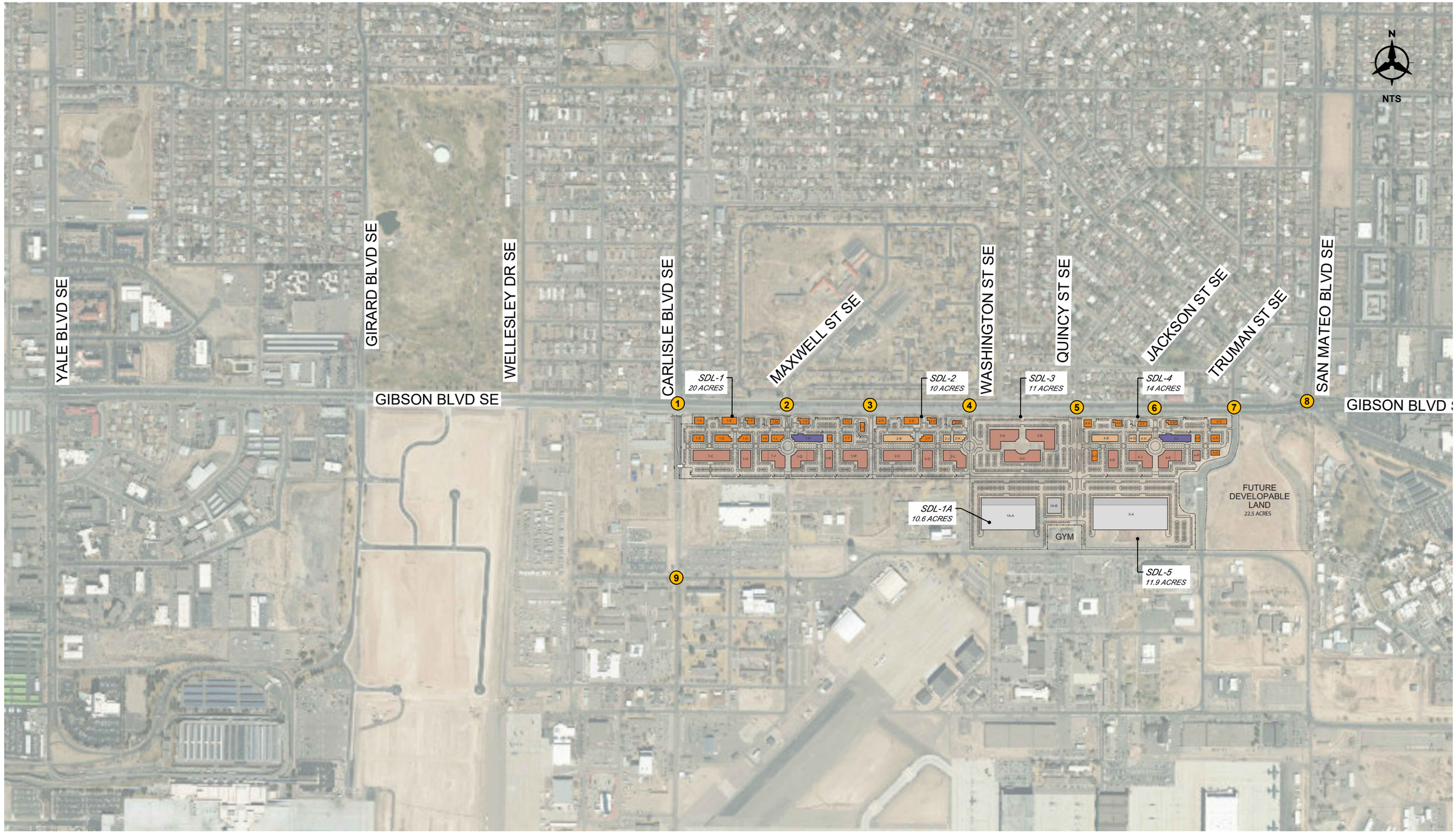

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FIGURE 2
SITE PLAN

II. PROPOSED DEVELOPMENT

A. LAND USE AND INTENSITY

The proposed development will include Retail (high-turnover restaurant, fast food drive-thru, and specialty retail), Employment (office, industrial/manufacturing), Residential (apartments/corporate stay), and Hotel.

The immediately surrounding land uses include the Kirtland Air Force Base and Albuquerque International Sunport to the south, Kirtland Elementary School to the west, Maxwell Family Housing and residential to the north, hospital and clinic uses to the east, and retail throughout.

B. DEVELOPMENT PHASING AND TIMING

Development areas SDL 1, 1A, 2, 3, 4, and 5 are expected to be constructed by the year 2030. The development areas are identified in the site plan shown in Figure 2. Future development land totals 22.5 acres east of Truman. Land use for this area is not identified at this time.

C. FUTURE ROADWAY PROJECTS

The NMDOT Electronic Statewide Transportation Improvement Program (eSTIP) does not indicate any future projects within the vicinity of the project area.

III. STUDY AREA CONDITIONS

A. STUDY AREA

The study will include analysis of the following intersections:

- Gibson & Carlisle Boulevard (existing signalized intersection)
- Gibson & Maxwell Street (existing signalized intersection)
- Gibson & Quincy Street (existing unsignalized intersection)
- Gibson & Jackson Street (existing unsignalized intersection)
- Gibson & Truman Street (existing signalized intersection)
- Gibson & San Mateo Boulevard (existing signalized intersection)
- 2 Future right-in/right-out only driveways onto Gibson
- 1 Future left-in/right-in/right-out only driveway onto Carlisle
- 1 Future right-in only driveway onto Truman

B. SITE ACCESSIBILITY

The vehicular entrances to the site will be via Maxwell Drive, Quincy Street, and Jackson Street from Gibson Boulevard. Two proposed site entrances will be located on Gibson Boulevard, one proposed site entrance will be located on Carlisle Boulevard, and one proposed entrance will be located on Truman Street.

C. DATA SOURCES

The data used in this report consist of the traffic counts described below, aerial photography, 2040 Socioeconomic Forecasts from MRCOG, and mapping from Google Earth®.

IV. ANALYSIS OF EXISTING CONDITIONS

The site is located south of Gibson Boulevard between Carlisle Boulevard and San Mateo Boulevard. The site is currently a mix of vacant land and a sports complex. The surrounding area consists of Kirtland Air Force Base facilities and the Albuquerque Sunport. North of the site is residential, on the west is Kirtland Elementary School and on the east is the Veteran's Administration Medical Center.

A. BACKGROUND

Roadway federal classification is updated approximately every four years. The classification process involves local governments, the Mid Region Council of Governments (MRCOG), New Mexico Department of Transportation (NMDOT), and the Federal Highway Administration (FHWA). The 2016 MRCOG Roadway Functional Classification Map classifies roadways based on their function. Roadways are subject to design guidance based on their functional classification, design speed, or based on Comprehensive Plan corridor designations.

- Gibson Boulevard is a 6-lane limited access principal arterial providing access to Interstate 25 (I-25) to the west of the site. Gibson ends at Louisiana as an entrance to the Kirtland Air Force Base. Gibson is anticipated to carry the bulk of traffic entering the site, with the largest percentage expected to come via I-25. Gibson is identified as a Commuter Corridor in the Albuquerque/Bernalillo County Comprehensive Plan (2017), which requires the road to "maintain a high level of service for automobiles so they can make long distance trips to regional destinations."
- Carlisle Boulevard is a 2-lane minor arterial that provides access north of the site to Interstate 40 (I-40). Carlisle is also an entrance to KAFB.
- San Mateo Boulevard is a 4-lane limited access principal arterial that provides access to I-40 on the north and the Veteran's Hospital facility on the south. North of Zuni Road, San Mateo is a six-lane facility.
- Maxwell Avenue, Quincy Street, Jackson Street, and Truman Street are residential streets north of Gibson. Of the four, only Truman currently extends south of Gibson to access KAFB. This project proposes to provide full access to the EUL site via the Maxwell and Quincy intersections and entering from Truman. Maxwell and Truman are currently signalized intersections and the

development levels warrant a traffic signal at the proposed Quincy Street entrance.

B. EXISTING TRAFFIC CONDITIONS

Public may not have been in session on May 29th

Traffic counts for the intersections analyzed in the study area were collected on May 29, 2019. All counts were conducted while school was in session. Traffic counts were recorded from 6:00 to 9:00 AM and 4:00 to 7:00 PM. Figure 3 is a summary of the existing peak hour traffic volumes, existing laneage, turning movements, and intersection level of service. Existing traffic counts are included in Appendix A.

The traffic counts included counts for heavy vehicles, pedestrians, and bicyclists.

The *Sixth Edition of the Highway Capacity Manual* (HCM) defines Level of Service (LOS) for un-signalized intersections is as follows:

Table 1 – LOS Definitions

Level of Service	Definition	Signalized (sec/veh)	Unsignalized (sec/veh)
A	Most vehicles do not stop.	<10	<10
B	Some vehicles stop.	>10 and <20	>10 and <15
C	Significant numbers of vehicles stop.	>20 and <35	>15 and <25
D	Many vehicles stop.	>35 and <55	>25 and <35
E	Limit of acceptable delay.	>55 and <80	>35 and <50
F	Unacceptable delay.	>80	>50

The City of Albuquerque has established LOS D as the generally acceptable level of service in urban areas and when intersections operate below this level, improvements are generally considered, where feasible.

Existing intersection traffic volumes were analyzed using the Synchro version 10 software, that uses the signalized and unsignalized intersection methodology from the Sixth Edition of HCM. The intersections were evaluated as actuated-coordinated traffic signal system with Synchro determining the optimal cycle length (with a maximum of 130 seconds), splits, and offsets. Individual intersection output for the existing conditions analysis is included in Appendix C.

The results are summarized in Table 2 and Table 3, and shown graphically in Figure 3 and Figure 4.

inquire with Traffic Ops if optimized or actual timing should be uesed

Results indicate the signalized intersections operate at an overall acceptable LOS which the exception of Gibson and Truman in the PM peak hour. This is due to the large

number of trips experiencing delay while exiting northbound. Existing northbound left turn volume exceeds 500 vehicles, well above the level generally considered for dual left turn lanes. Reconstruction of this gate would require realignment of the intersection and right-of-way acquisition.

Table 2 – 2019 Existing Signalized Intersection Capacity Analysis Results

	2019 AM Peak			2019 PM Peak		
Signalized Intersections	**Delay (sec)**	**Max V/C**	**LOS**	**Delay (sec)**	**Max V/C**	**LOS**
Gibson & Carlisle	16.8	0.70	B	18.1	0.90	B*
Gibson & Maxwell	2.7	0.46	A	7.0	0.65	A
Gibson & Truman	12.9	0.91	B	96.7	2.00	F**
Gibson & San Mateo	29.8	0.99	C*	27.8	0.89	C*

*-movement LOS E
**-movement LOS F

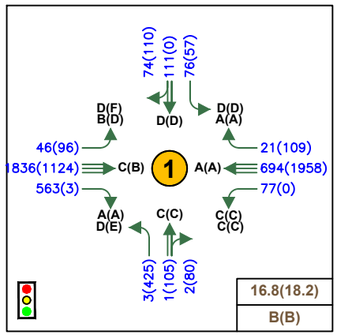
The existing unsignalized intersections operate at an overall acceptable LOS. However, left turn movements in the PM peak hour do not perform well due to the large traffic volumes on Gibson Boulevard.

Table 3 – 2019 Existing Unsignalized Intersection Results

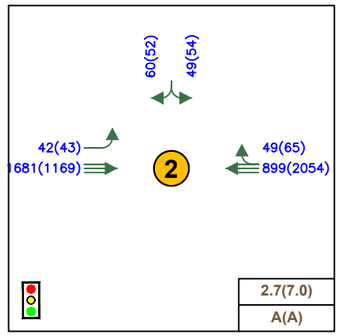
	2019 AM Peak				2019 PM Peak			
Intersection/Movement	**Delay (sec)**	**V/C**	**Queue* (ft)**	**LOS**	**Delay (sec)**	**V/C**	**Queue* (ft)**	**LOS**
Gibson & Quincy	0.1	-	-	-	0.4	-	-	-
EB Left	14.2	0.02	0	B	47.5	0.15	25	E
SB Left	13.3	0.03	25	B	42.3	0.16	25	E
Gibson & Jackson	0.1	-	-	-	0.3	-	-	-
EB Left	14.2	0.01	0	B	49.1	0.17	25	E
SB Right	15	0.05	25	C	26.5	0.05	25	D

* – HCM 95th percentile queue rounded to next 25-foot increment

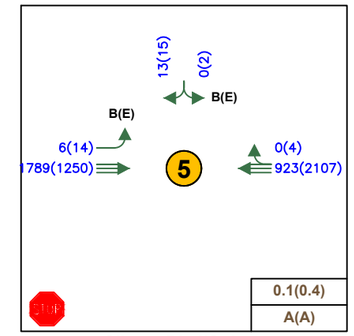
Roadway capacity needs to be evaluated DPM 23.8.c.5.a



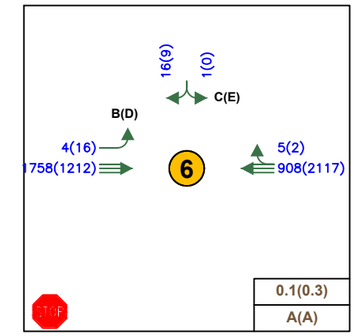
Carlisle Blvd/Gibson Blvd



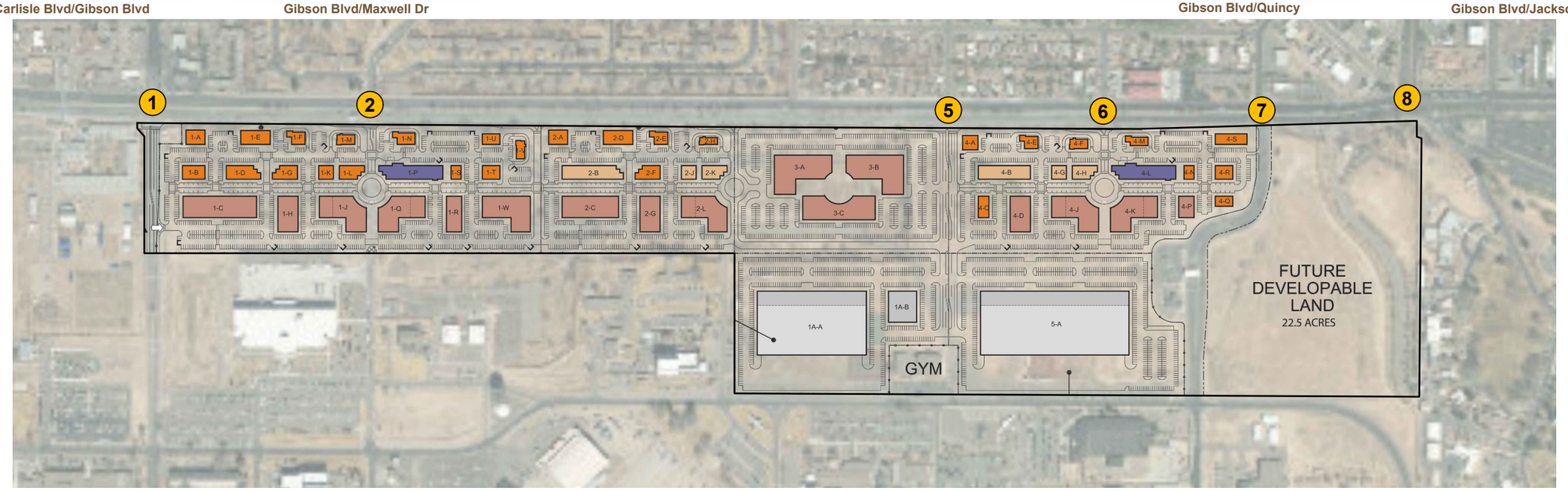
Gibson Blvd/Maxwell Dr



Gibson Blvd/Quincy



Gibson Blvd/Jackson St

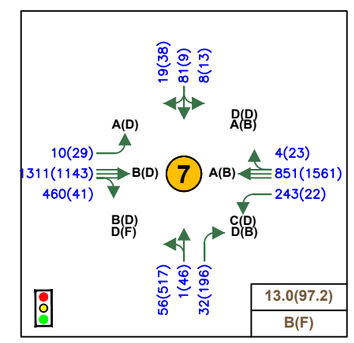


N

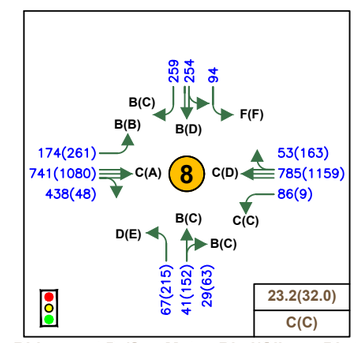
NTS

LEGEND

	Thru Lanes (# as indicated)
	Turning Lanes (# as indicated)
1234(1234)	Trip Assignment Percentages
N	Entering
X	Exiting



Truman St/Gibson Blvd



Ridgecrest Dr/San Mateo Blvd/Gibson Blvd

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FIGURE 3
2019 EXISTING AM(PM) PEAK HOUR TRAFFIC VOLUMES

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V. PROJECTED TRAFFIC

A. SITE TRAFFIC FORECASTING

1. TRIP GENERATION

Generated trips are broken down into three types; 1) primary, 2) pass-by trips, and 3) diverted link. The Trip Generation report defines these trips as follows:

- **Primary Trips** – These trips are made for the specific purpose of visiting the generator. The stop at that generator is the primary reason for the trip. For example, a home to shopping to home combination of trips is a primary trip set.
- **Pass-by Trips** – These trips are made as intermediate stops on the way from an origin to a primary trip generation. Pass-by trips are attracted from the traffic passing the site on an adjacent street that contains direct access to the generator site. These trips do not require a diversion from another roadway. For example, stopping at the store on the way home from work is an example of a pass-by trip. As the site has a large amount of uses that will be open in the AM peak hour and attract pass-by trips, a pass-by trip reduction of 49% in the AM peak hour and 45% in the PM peak hour was assumed in this analysis to account for non-developed use. These are consistent with guidance in the *Trip Generation Handbook*, 3rd Edition,
- **Diverted Linked Trips –** These trips are attracted from the traffic volume on the roadway within the vicinity of the generator, but which require a diversion from that roadway to another roadway to gain access to the site. The roadways could include streets or freeways adjacent to the generator, but without access to the generator. For this study, the diverted link trips have been included in with the primary trips.

This study included primary trips and pass-by trips.

The Institute of Transportation Engineers Trip Generation Manual, 10th Edition was used to estimate the trips generated by the site. The peak hour of adjacent street rate was used to determine trip generation for this study, which results in slightly more trips than the peak hour of adjacent street equation.

Table 4 – Trip Generation							
Land Use	**Size**	**ITE Land Use Type Assumed**	**Daily**	**AM Enter**	**AM Exit**	**PM Enter**	**PM Exit**
Hotel	200	Hotel	1,832	57	38	64	60
Retail	111,700	Specialty Retail	4,817	0	0	128	162
Retail	23,200	High Turnover Restaurant	2,603	128	103	141	86
Retail	26,200	Fast Food with Drive-Thru	12,339	538	515	446	410
Residential	108	Apartments/Corporate Stay	776	12	40	41	23
Employment	714,250	Office	7,145	601	97	119	619
Employment	219,500	Manufacturing/Industrial Park	1,141	72	16	19	69
Trip Generation			**30,926**	**1,408**	**809**	**958**	**1,429**

2. TRIP REDUCTIONS

check entrance throat depth.
Depth is approx. 225 feet and comply with the DPM. OK

a) *Internal Capture*

The Transportation Research Board (TRB) National Cooperative Highway Research Program (NCHRP) Report 684 defines methodology for estimating internal trip capture within developments with multiple land uses, such as this project.

A multi-use development, as defined by the ITE *Trip Generation Handbook*, is a single real-estate project that consists of two or more ITE land use classifications between which trips can be made without using the off-site road system.

These internal capture trips are assumed to be completed on the internal street system as vehicular or pedestrian trips. Therefore, these internal trips are not included in those shown in Figure 15 on page 31. These internal trips total 178 in the AM peak hour and 264 in the PM peak hour.

The NCHRP Report 684 spreadsheet model is contained in Appendix C.

b) *Pass-by*

As described in Section V.A.1, a pass-by trip is made as an intermediate stop on the way from an origin to a primary destination without a route diversion.

The *Trip Generation Handbook* defines the 'Average Pass-by Trip Percentage' by land use type in the Handbook's Appendix E: Database on Pass-by, Diverted, and Primary Trips. The database reports percentages for 25 land uses to derive pass-by estimates. For the purposes of this study, the pass-by percentage obtained from the *Trip Generation Handbook* for retail development is 34%, the pass-by percentage for restaurant development is 43%, and the pass-by percentage for fast food development is 50%.

c) *Transit*

To account for individuals traveling to the site via public transit, 2% of the total new trips were reduced from Residential and Employment land uses.

3. TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment was based on standard gravity model methodology using logical trip routing for each land use type. The gravity model utilized socioeconomic data obtained from the Mid-Region Council of Governments, which included population and employment estimates for each subarea within the Albuquerque Metropolitan Planning Area to develop the trip distribution.

The list below

- The hotel distribution assumed all traffic originated from or was destined to I-25. Hotel trips were assigned to enter and exit the site using Maxwell and Quincy driveways.
- The retail distribution used a 2-mile radius around the development site based on population. Retail trips were assigned to enter and exit the site using driveways serving SDL 1, 2, and 4.
- The residential distribution used an inverse relationship to distance and were based on region-wide employment locations by subarea. Residential trips were assigned to enter the site using driveways serving SDL 2 and 4 and exit the site at signalized intersections.
- The employment trips used an inverse relationship to distance and were based on region-wide population locations by subarea. Employment trips were assigned to enter and exit the site using driveways serving SDL 1, 2, 3, 1A, and 4.
- Pass-by trips were assigned driveways serving SDL 1, 2, and 4.

The socioeconomic data for the year 2030 was estimated by interpolating between the 2016 and 2040 socioeconomic data available for MRCOG.

The maps and spreadsheet used to create the modified gravity model is included in Appendix C.

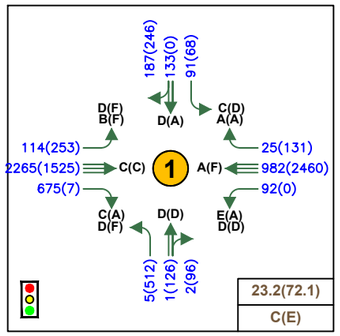
Spreadsheets showing the development of the trips at each intersection for the build scenario are also included in Appendix C. The trip distribution percentages and assigned traffic volumes for the Build analysis is shown in Figure 4 through Figure 13.

4. NO BUILD TRAFFIC PROJECTIONS

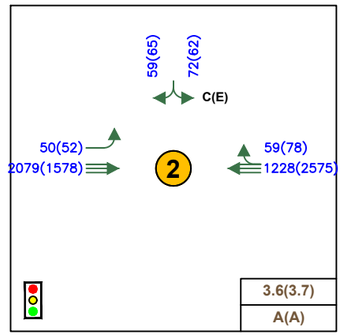
The annual growth was calculated using traffic counts for the years of 2013-2017 from the MRCOG Average Weekday Traffic Map. This analysis found a negative growth rate. To estimate future traffic growth, 1.8% annual growth was applied to the existing turning movements to provide an estimate of potential future growth of traffic on the roadway network. The data and calculations are summarized in spreadsheets included in Appendix C.

Figure 14 on page 28 shows the 2030 No Build Traffic Volumes, number of lanes, and level of service.

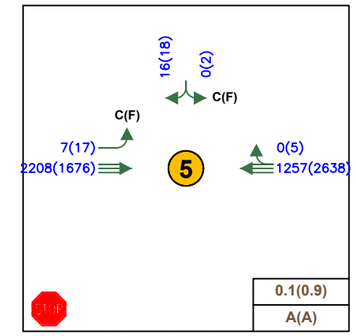
The No Build analysis assumes that the proposed project is not completed.



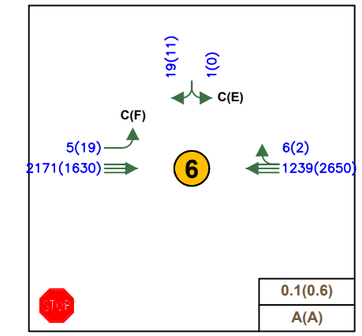
Carlisle Blvd/Gibson Blvd



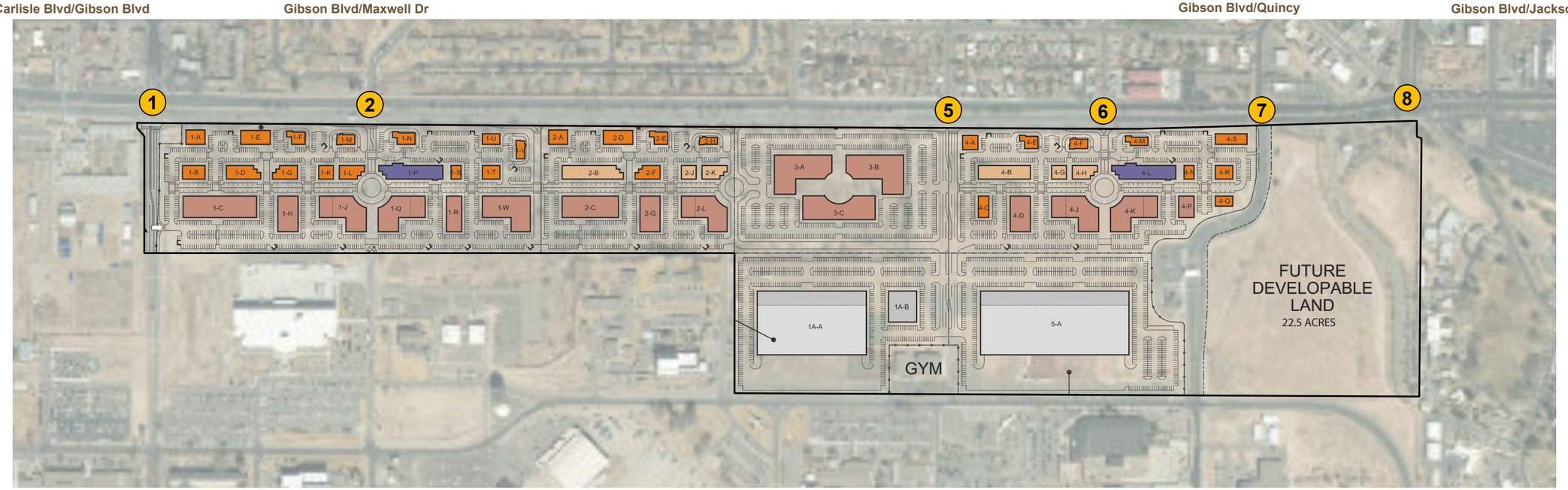
Gibson Blvd/Maxwell Dr



Gibson Blvd/Quincy



Gibson Blvd/Jackson St



N

NTS

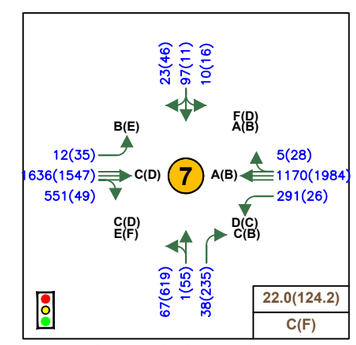
LEGEND

Thru Lanes (# as indicated)

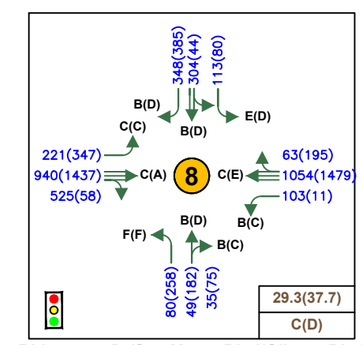
Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts

X(X) AM(PM) Level of Service (LOS)



Truman St/Gibson Blvd



Ridgecrest Dr/San Mateo Blvd/Gibson Blvd

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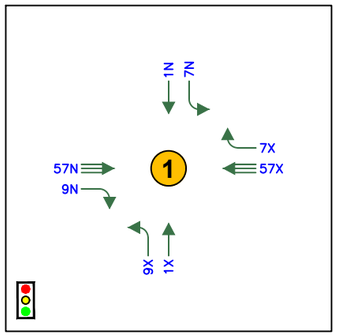
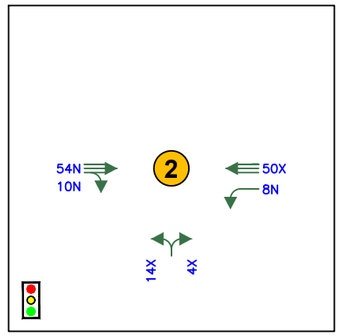
FIGURE 4
2030 NO-BUILD AM(PM) PEAK HOUR TRAFFIC VOLUMES

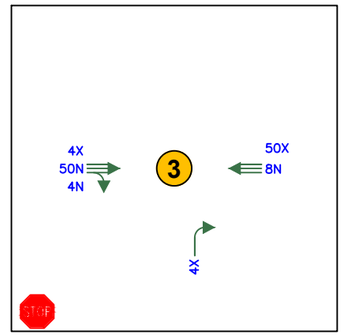
P:\20190098\TRANS\Study\Report-Production\Report Figures\F4 NoBuild.dwg Sep 20, 2019 - 11:07am



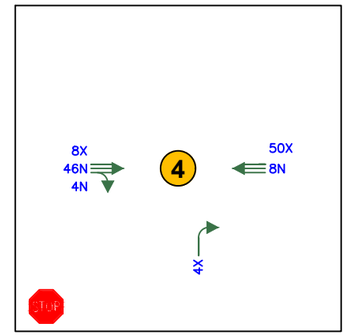
Gibson Blvd/Carlisle Blvd



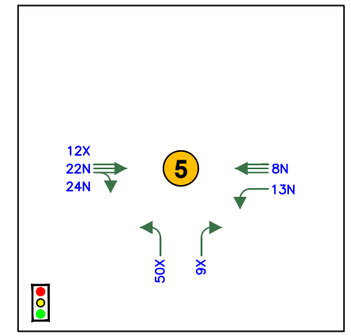
Gibson Blvd/Maxwell Dr



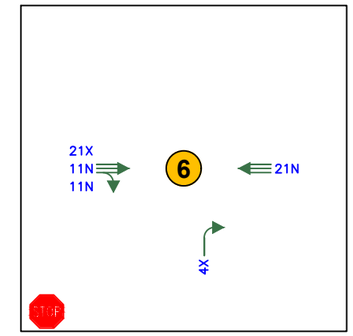
Gibson Blvd/D1



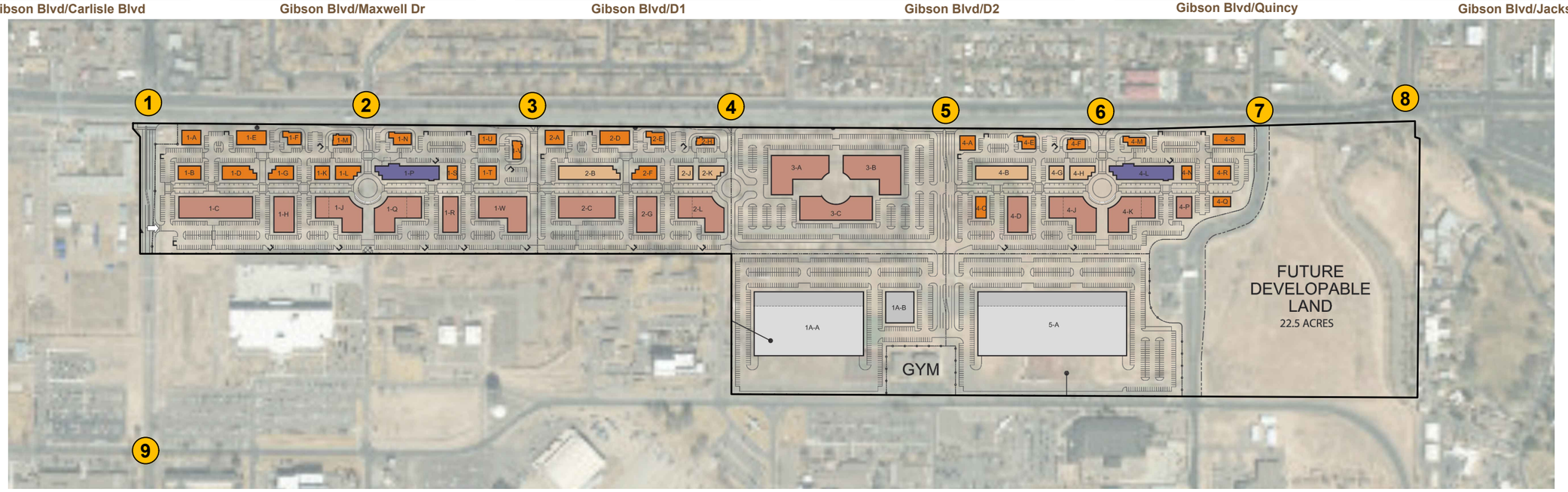
Gibson Blvd/D2



Gibson Blvd/Quincy

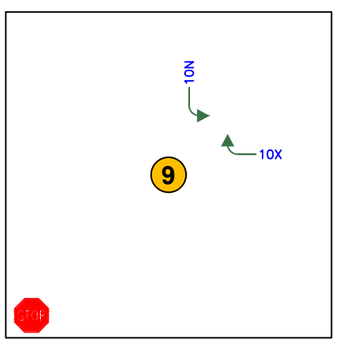


Gibson Blvd/Jackson



N

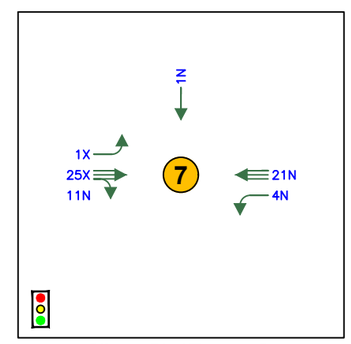
NTS



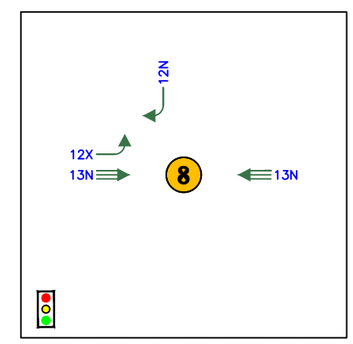
Gibson Blvd/D3

LEGEND

	Thru Lanes (# as indicated)
	Turning Lanes (# as indicated)
1234(1234)	Trip Assignment Percentages
N	Entering
X	Exiting



Gibson Blvd/Truman St



Gibson Blvd/San Mateo Blvd

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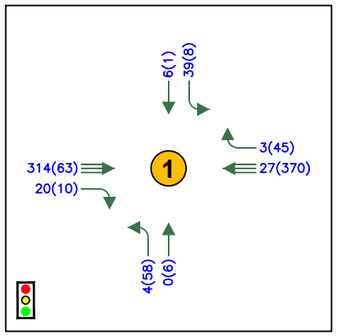
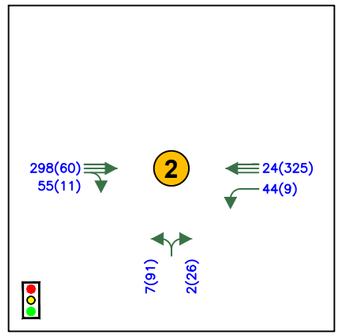
FIGURE 5
TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES-EMPLOYMENT

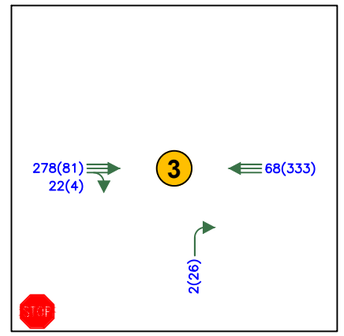
P:\20190098\TRANS\Study\Report-Production\Report Figures\F5 TripPer-Employment.dwg Sep 20, 2019 - 11:07am



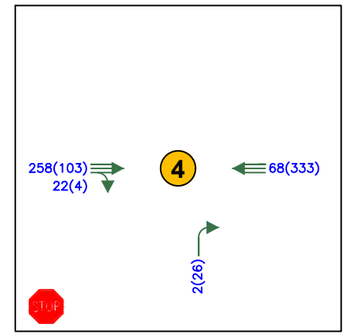
Gibson Blvd/Carlisle Blvd



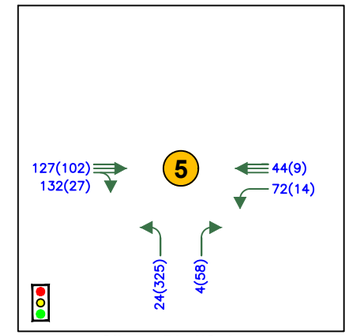
Gibson Blvd/Maxwell Dr



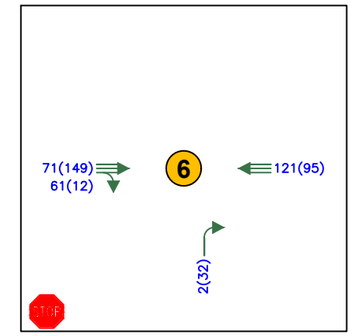
Gibson Blvd/D1



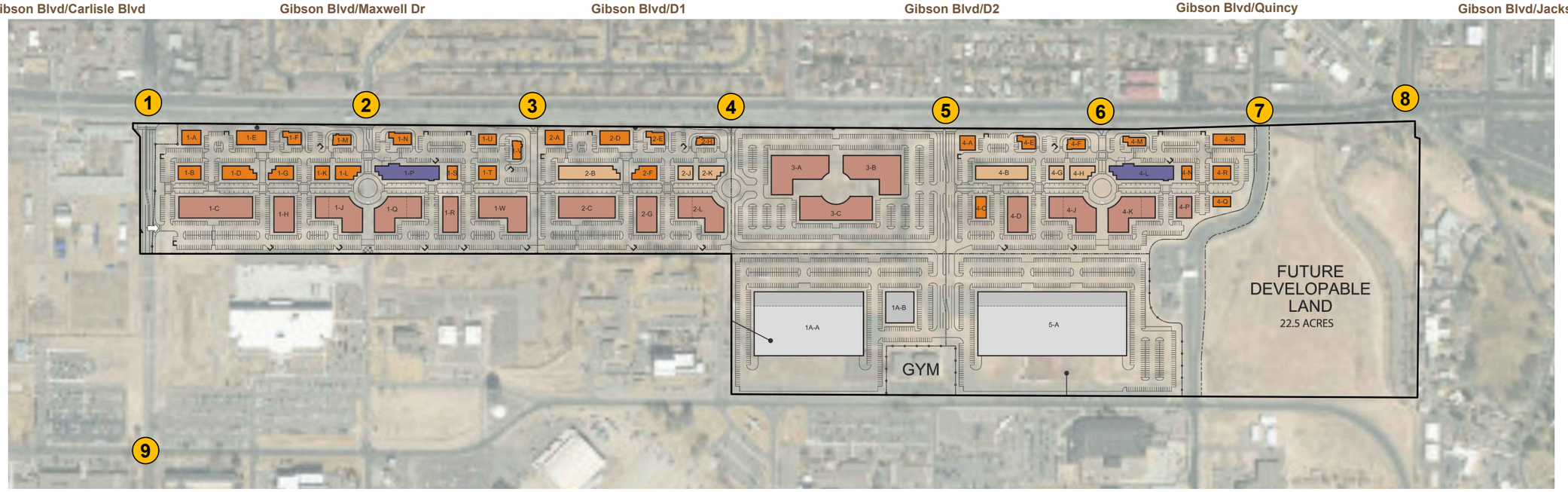
Gibson Blvd/D2



Gibson Blvd/Quincy

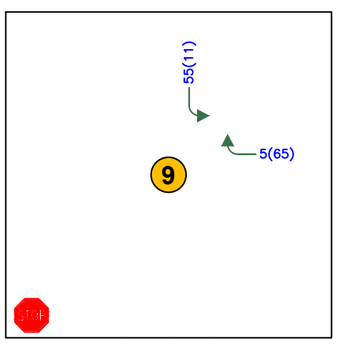


Gibson Blvd/Jackson



N

NTS



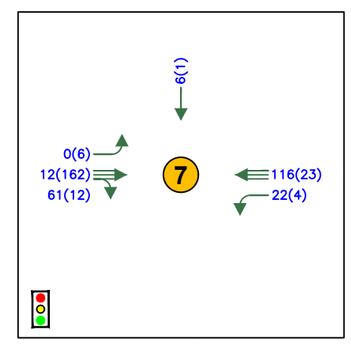
Gibson Blvd/D3

LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts



Gibson Blvd/Truman St

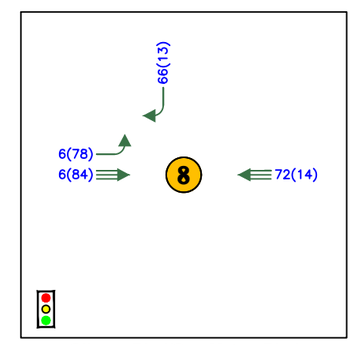


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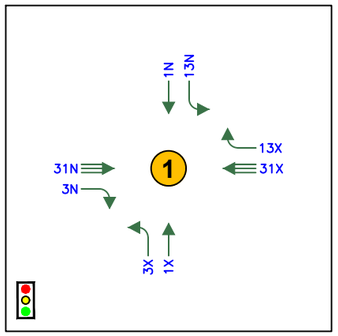
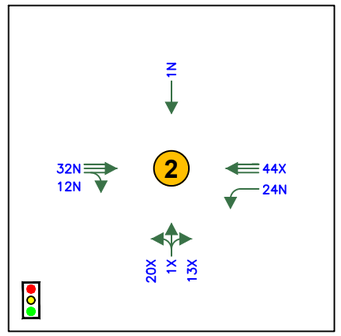
FIGURE 6
TRIP DISTRIBUTION & ASSIGNMENT VOLUMES-EMPLOYMENT

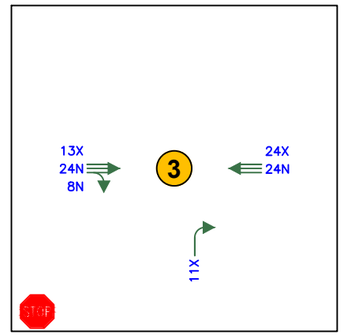
P:\20190098\TRANS\Study\Report-Production\Report Figures\F6 TripVol-Employment.dwg Sep 20, 2019 - 11:07am



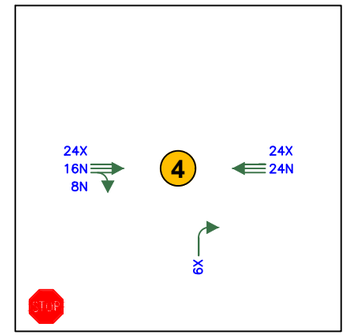
Gibson Blvd/Carlisle Blvd



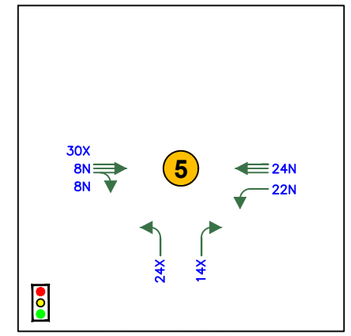
Gibson Blvd/Maxwell Dr



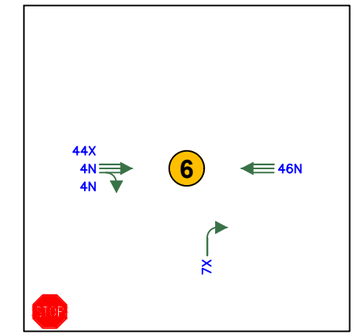
Gibson Blvd/D1



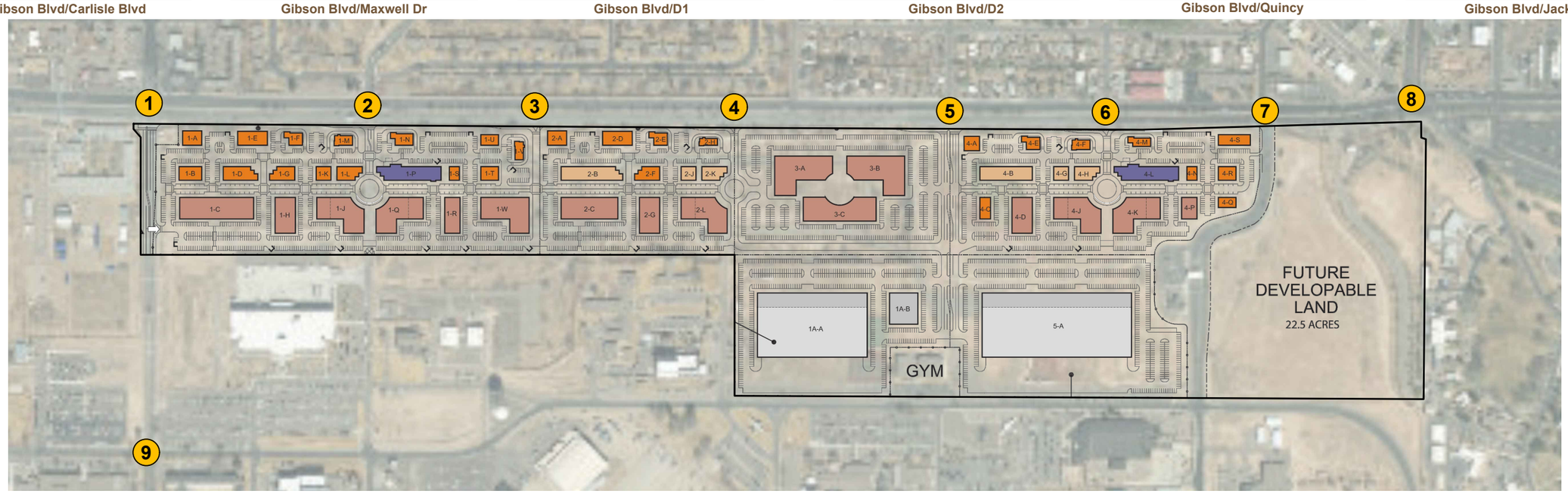
Gibson Blvd/D2



Gibson Blvd/Quincy

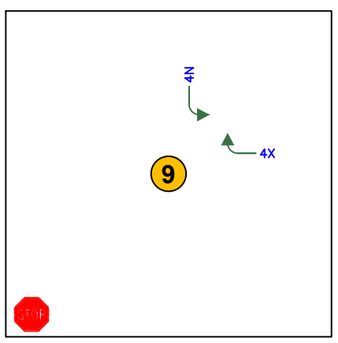


Gibson Blvd/Jackson



N

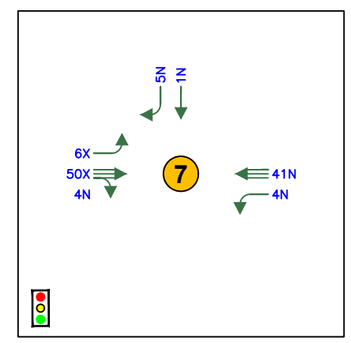
NTS



Gibson Blvd/D3

LEGEND

	Thru Lanes (# as indicated)
	Turning Lanes (# as indicated)
1234(1234)	Trip Assignment Percentages
N	Entering
X	Exiting



Gibson Blvd/Truman St

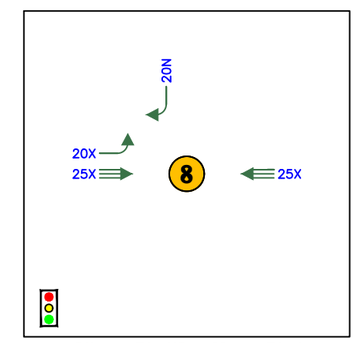


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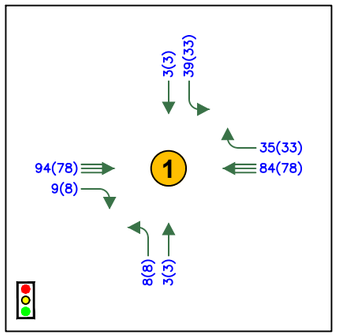
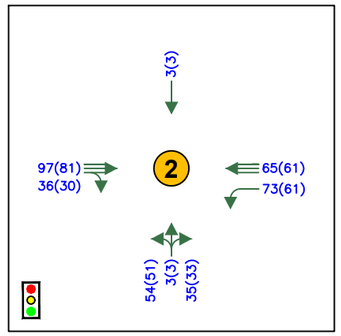
FIGURE 7
TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES-RETAIL

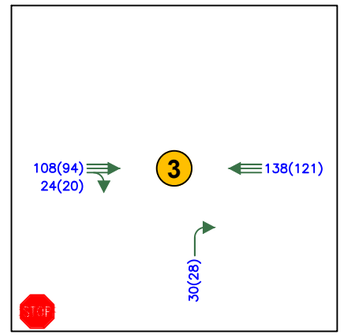
P:\20190098\TRANS\Study\Report-Production\Report Figures\F7 TripPer-Retail.dwg Sep 20, 2019 - 11:08am



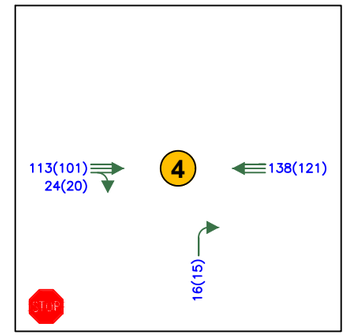
Gibson Blvd/Carlisle Blvd



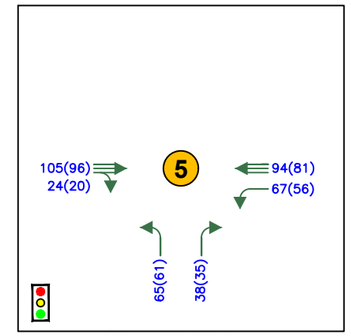
Gibson Blvd/Maxwell Dr



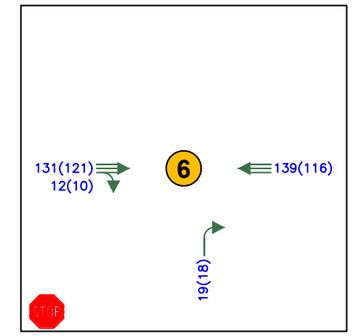
Gibson Blvd/D1



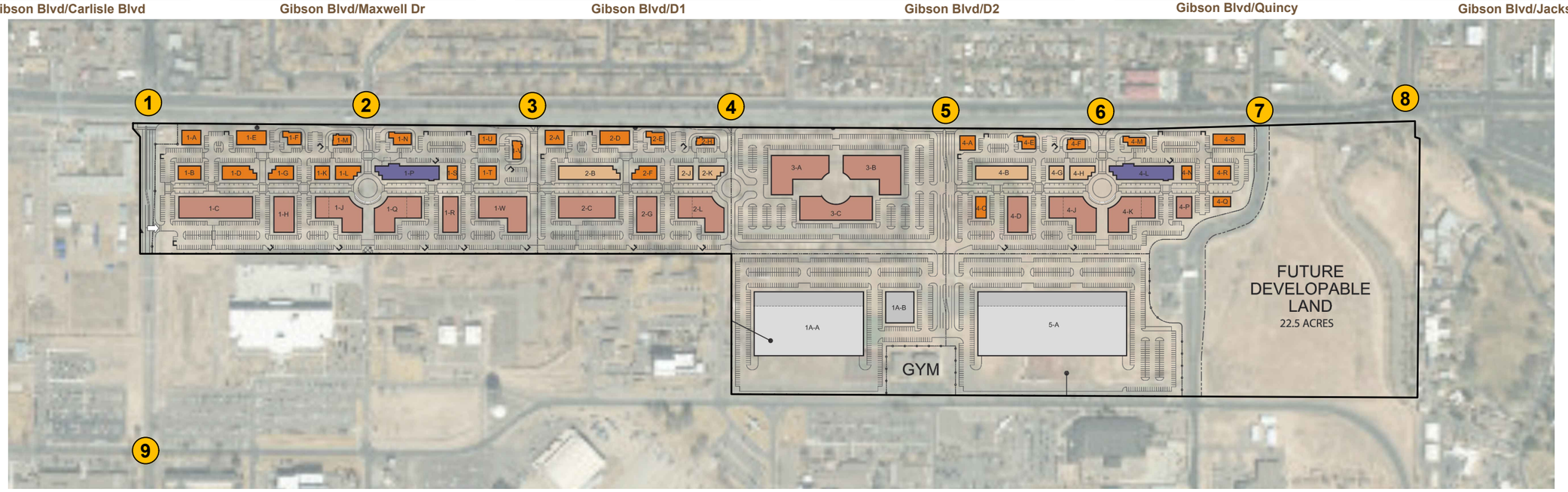
Gibson Blvd/D2



Gibson Blvd/Quincy

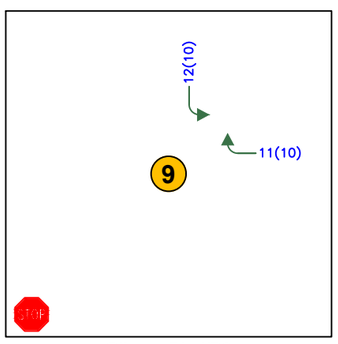


Gibson Blvd/Jackson



N

NTS



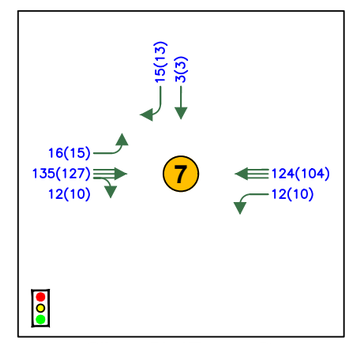
Gibson Blvd/D3

LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts



Gibson Blvd/Truman St

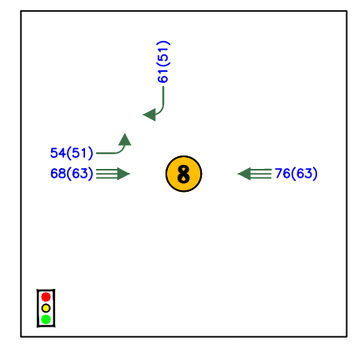


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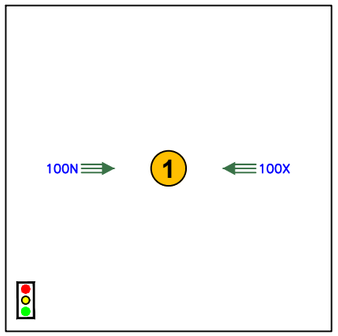
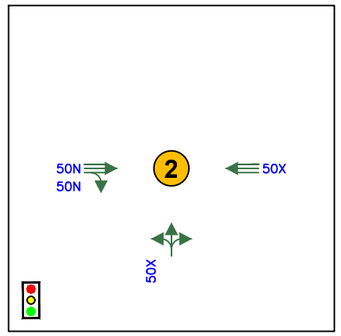
FIGURE 8
TRIP DISTRIBUTION & ASSIGNMENT VOLUMES-RETAIL

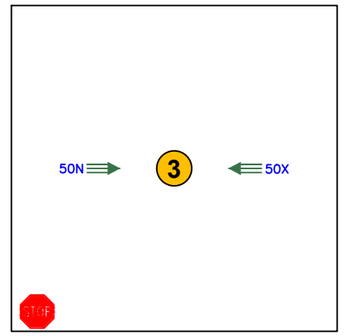
P:\20190098\TRANS\Study\Report-Production\Report Figures\F8 TripVol-Retail.dwg Sep 20, 2019 - 11:08am



Gibson Blvd/Carlisle Blvd



Gibson Blvd/Maxwell Dr



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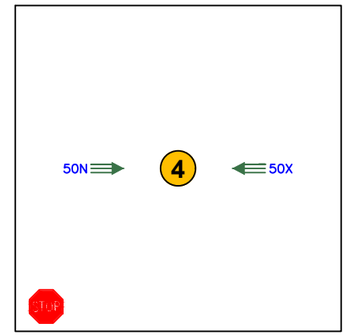

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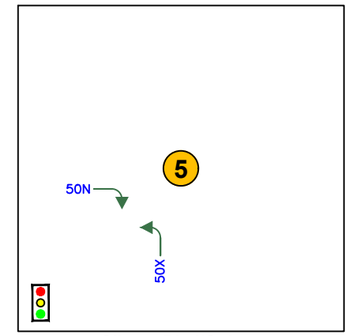

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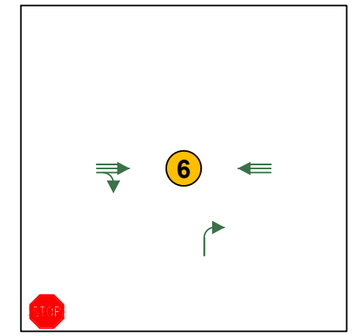
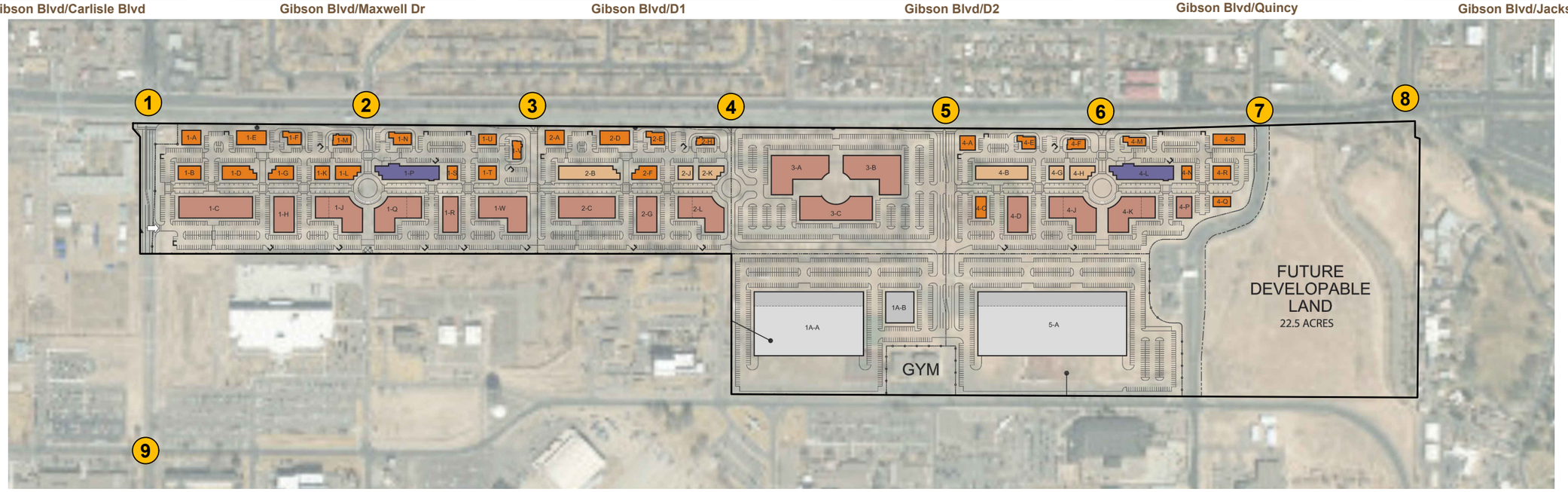


Gibson Blvd/Jackson



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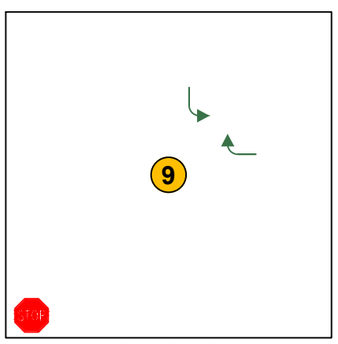
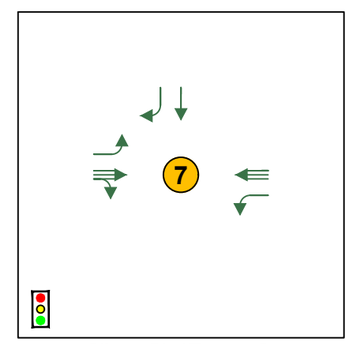


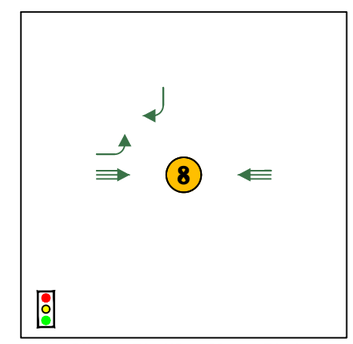
Gibson Blvd/D3

LEGEND

- Thru Lanes (# as indicated)
- Turning Lanes (# as indicated)
- 1234(1234) Trip Assignment Percentages
- N Entering
- X Exiting



Gibson Blvd/Truman St



Gibson Blvd/San Mateo Blvd

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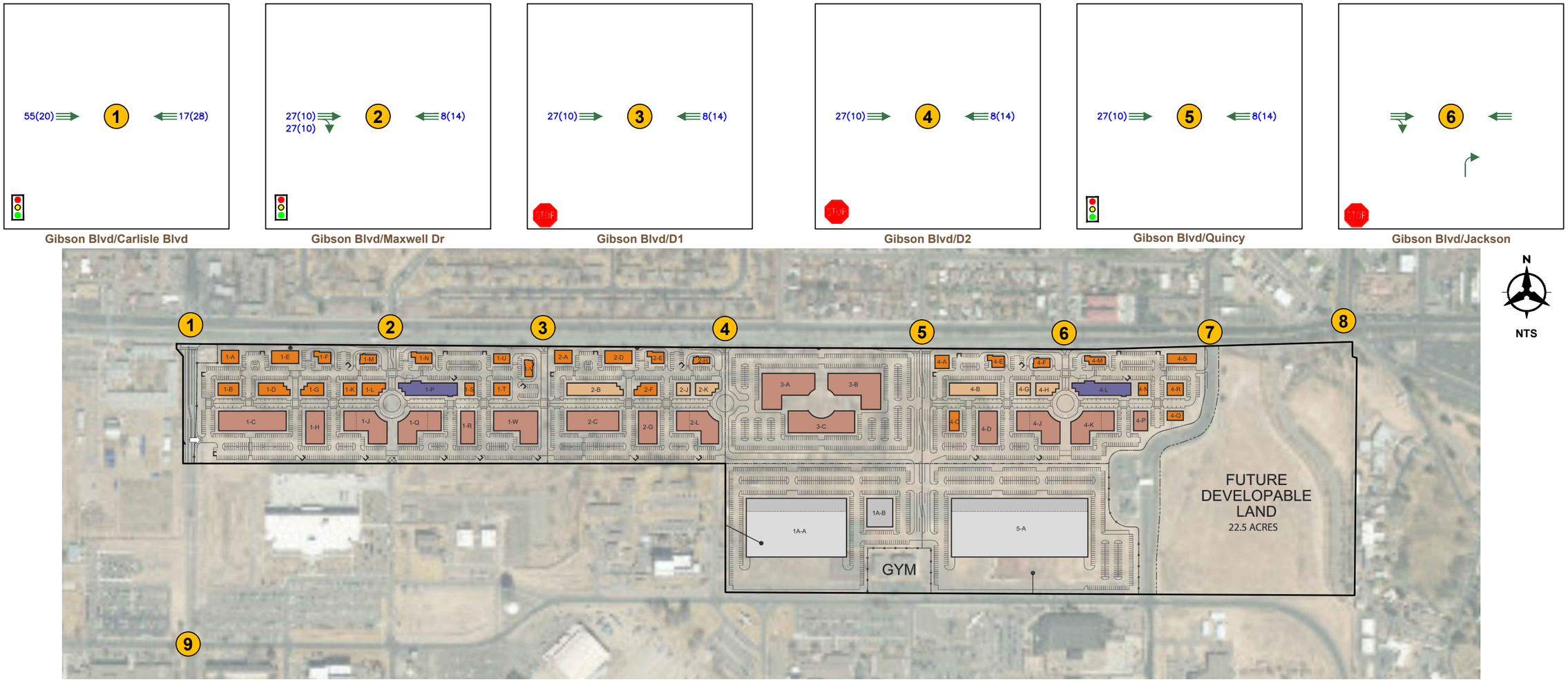
FIGURE 9
TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES-HOTEL

P:\20190098\TRANS\Study\Report-Production\Report Figures\F9 TripPer-Hotel.dwg Sep 20, 2019 - 11:09am



P:\20190098\TRANS\Study\Report-Production\Report Figures\F10 TripVol-Hotel.dwg Sep 20, 2019 - 11:09am

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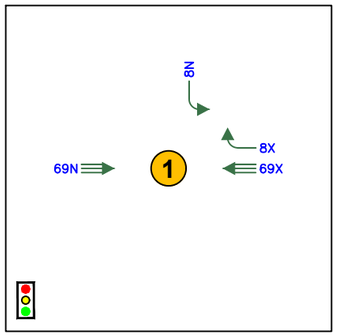
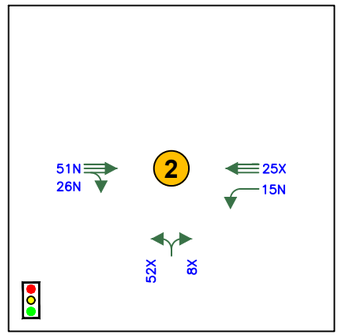
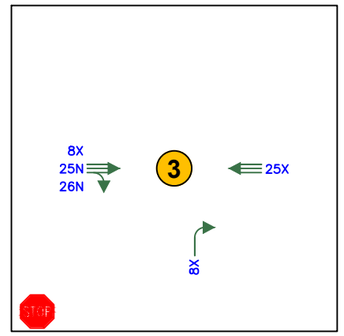
FIGURE 10
TRIP DISTRIBUTION & ASSIGNMENT VOLUMES-HOTEL



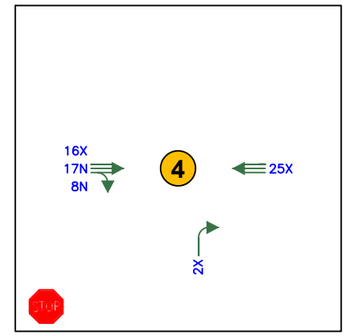
Gibson Blvd/Carlisle Blvd



Gibson Blvd/Maxwell Dr



Gibson Blvd/D1



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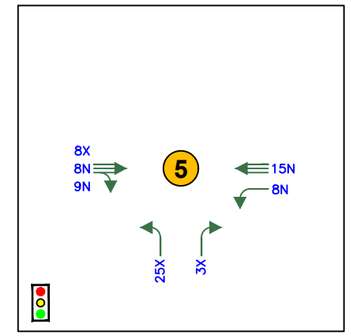

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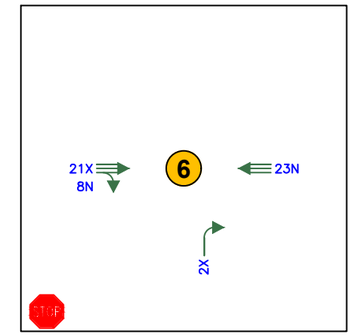

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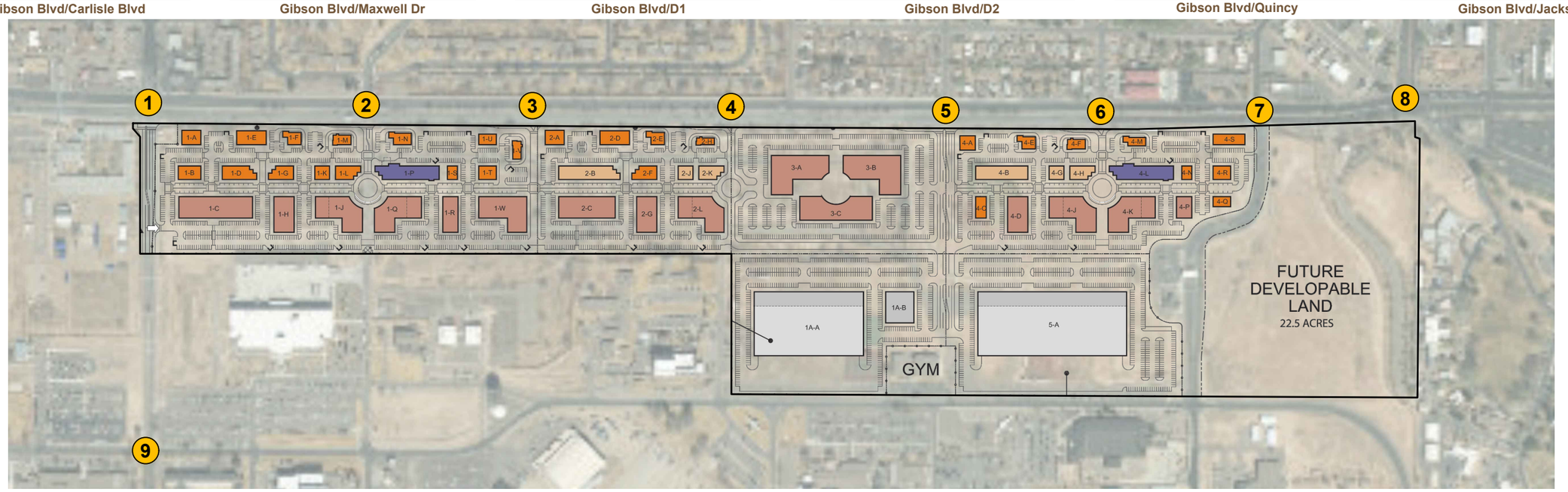

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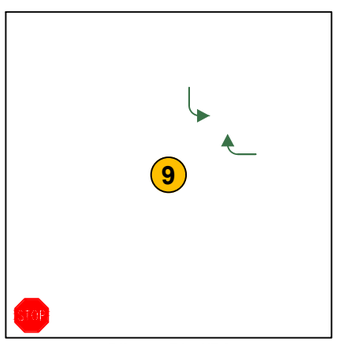
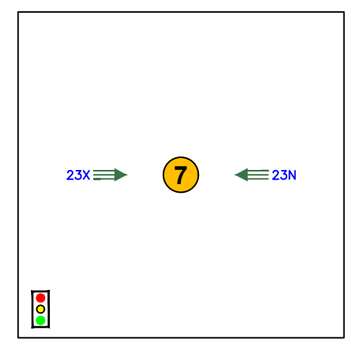


Gibson Blvd/D3

LEGEND

	Thru Lanes (# as indicated)
	Turning Lanes (# as indicated)
1234(1234)	Trip Assignment Percentages
N	Entering
X	Exiting



Gibson Blvd/Truman St

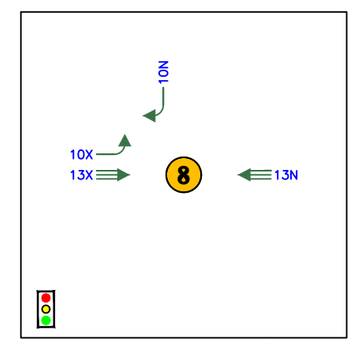


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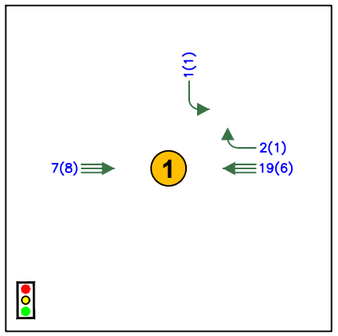
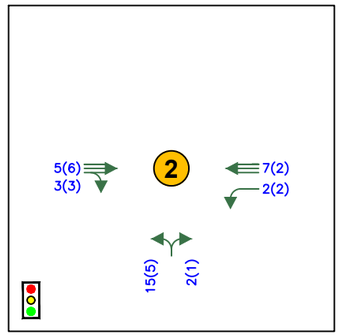
FIGURE 11
TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES-RESIDENTIAL

P:\20190098\TRANS\Study\Report-Production\Report Figures\F11 TripPer-Residential.dwg Sep 20, 2019 - 11:10am



Gibson Blvd/Carlisle Blvd



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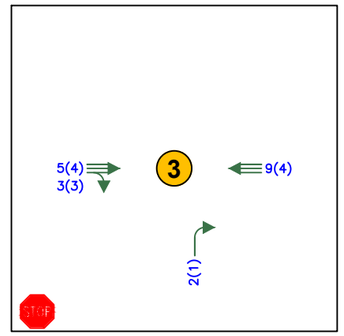
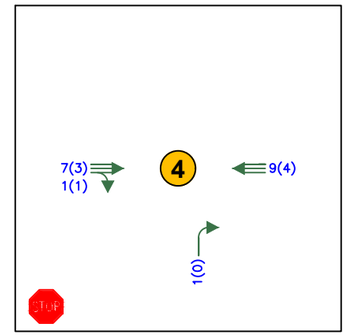


Gibson Blvd/D1



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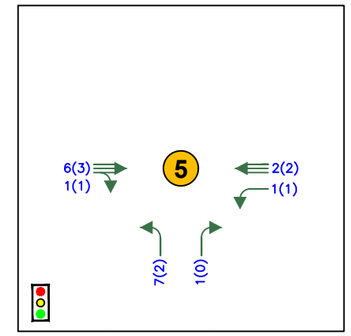

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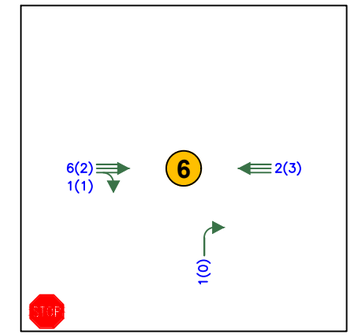
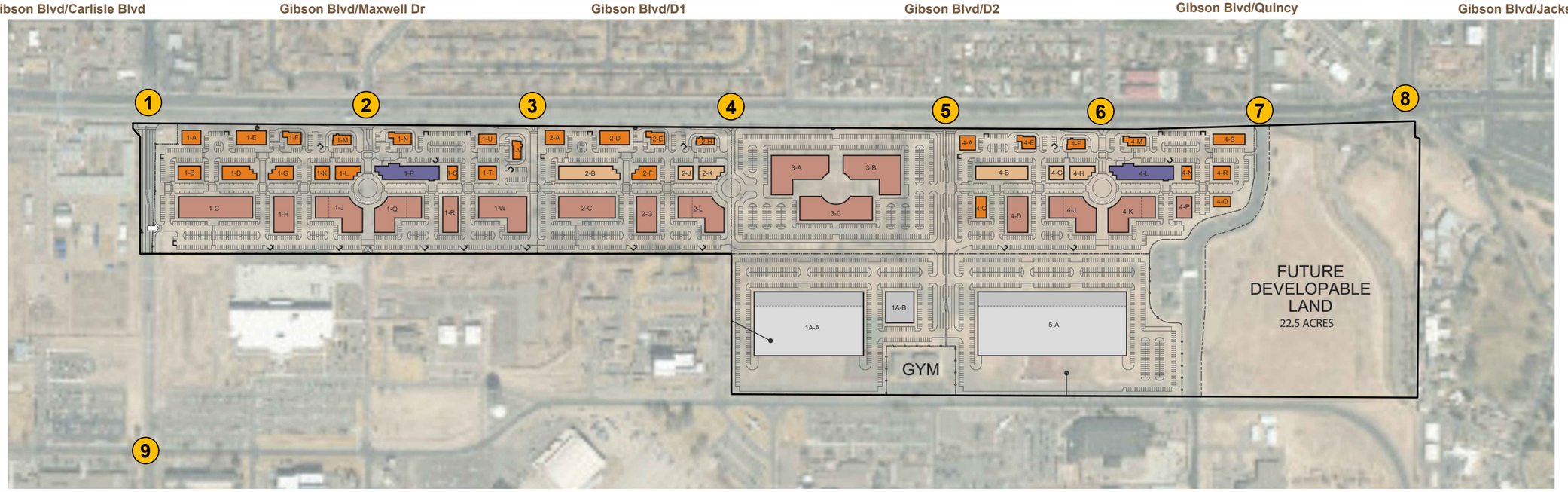


Gibson Blvd/Jackson



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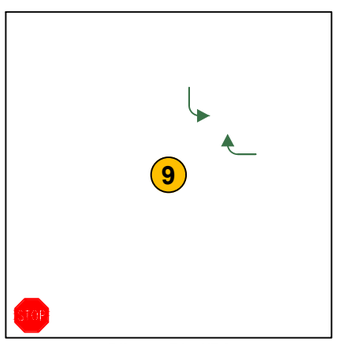


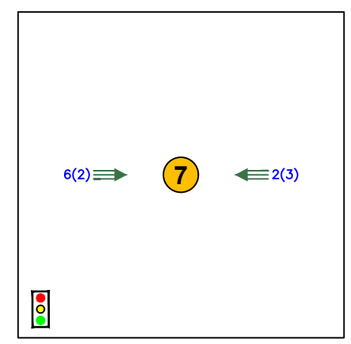
Gibson Blvd/D3

LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts



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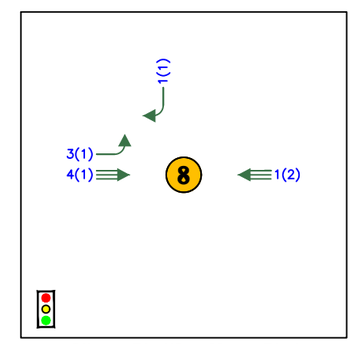

Gibson Blvd/San Mateo Blvd

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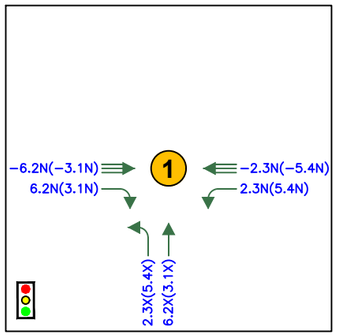
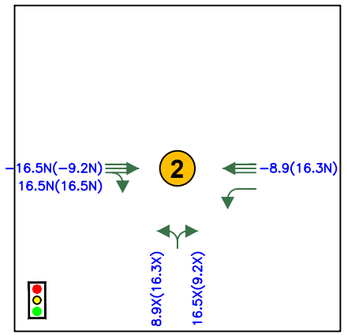
FIGURE 12
TRIP DISTRIBUTION & ASSIGNMENT VOLUMES-RESIDENTIAL

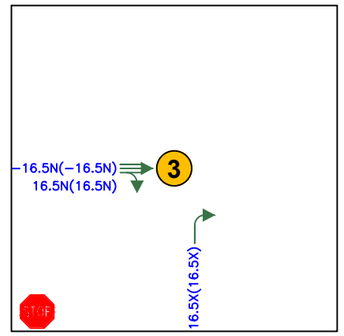
P:\20190098\TRANS\Study\Report-Production\Report Figures\F12 TripVol-Residential.dwg Sep 20, 2019 - 11:10am



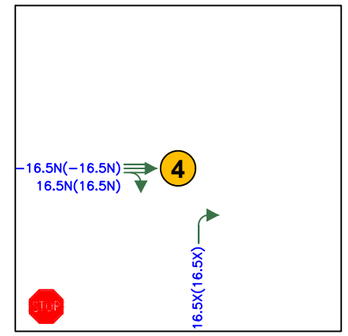
Gibson Blvd/Carlisle Blvd



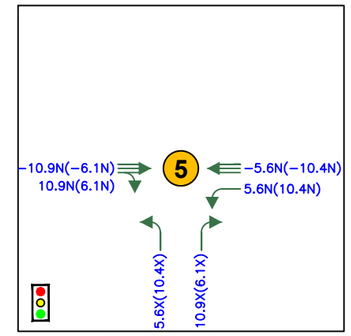
Gibson Blvd/Maxwell Dr



Gibson Blvd/D1



Gibson Blvd/D2



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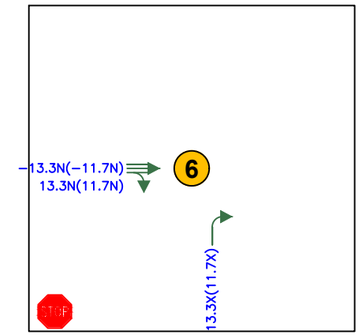
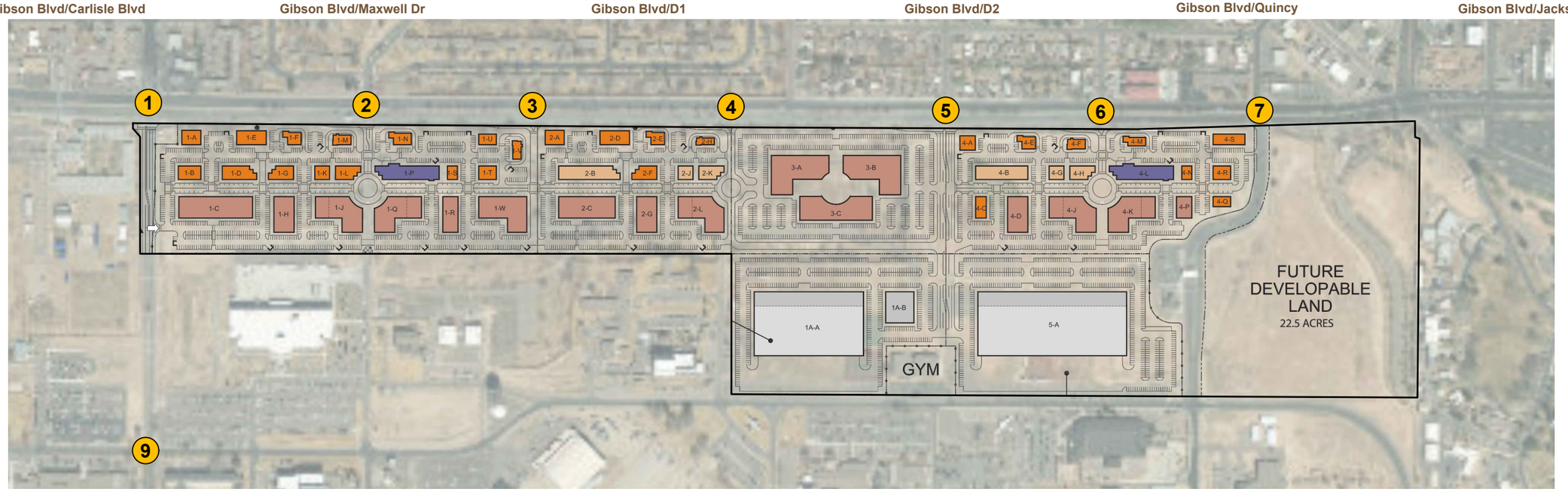
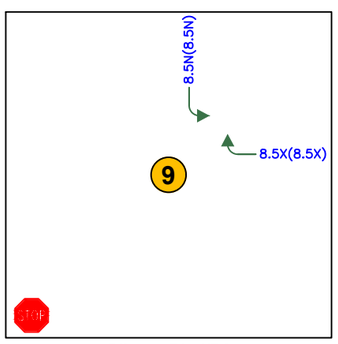


Gibson Blvd/Jackson

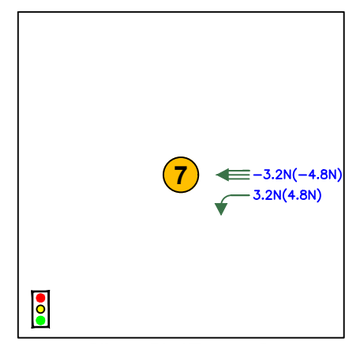




Gibson Blvd/D3

LEGEND

	Thru Lanes (# as indicated)
	Turning Lanes (# as indicated)
1234(1234)	Trip Assignment Percentages
N	Entering
X	Exiting



Gibson Blvd/Truman St

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FIGURE 13
TRIP DISTRIBUTION & ASSIGNMENT PERCENTAGES-PASS-BY

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VI. TRAFFIC AND IMPROVEMENT ANALYSIS

The following section will discuss the results of the future year traffic analysis.

A. LEVEL OF SERVICE ANALYSIS

1. 2030 NO BUILD INTERSECTION CAPACITY ANALYSIS

The No Build analysis assumes the development is not constructed.

For the 2030 No Build scenario, the intersections were analyzed using Synchro 10. Table 5 and Table 6 shows the 2030 No Build analysis results for signalized and unsignalized intersections respectively. The results are shown graphically in Figure 14. Synchro output is included in Appendix D. The analysis indicates that most signalized intersections will continue to operate as they do currently.

Results indicate that signalized intersections will operate at an overall acceptable LOS with the exception of Truman. Carlisle is expected to degrade to LOS E in the PM peak hour. Several intersections operate at acceptable LOS overall however several have movements that operate at LOS F.

Table 5 – 2030 No Build Signalized Intersection Capacity Analysis Results

	2030 AM Peak			2030 PM Peak		
Signalized Intersections	**Delay (sec)**	**Max V/C**	**LOS**	**Delay (sec)**	**Max V/C**	**LOS**
Gibson & Carlisle	23.0	0.88	C*	71.1	1.37	E**
Gibson & Maxwell	3.6	0.57	A	3.7	0.68	A
Gibson & Truman	21.8	0.93	C**	123.4	2.42	F**
Gibson & San Mateo	38.2	1.08	D**	33.3	0.93	C**

*-movement LOS E
**-movement LOS F

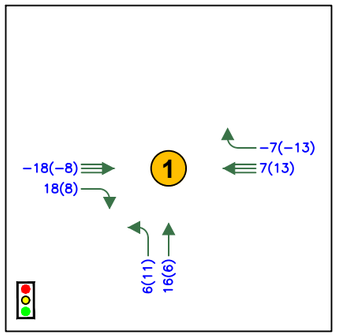
The analysis indicates that most unsignalized intersections will continue to operate as they do currently. The left turn movements are expected to degrade from LOS E to LOS F due to the large traffic volumes on Gibson Boulevard.

Table 6 – 2030 No Build Unsignalized Intersection Results

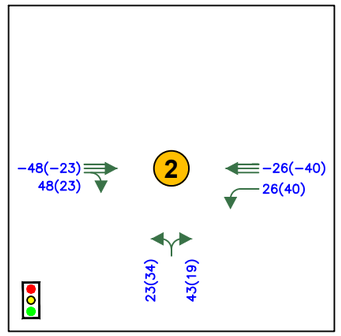
Intersection/Movement		2030 AM Peak				2030 PM Peak			
		Delay (sec)	V/C	Queue* (ft)	LOS	Delay (sec)	V/C	Queue* (ft)	LOS
Gibson & Quincy		0.1	-	-	-	0.9	-	-	-
stop control	EB Left	18.8	0.03	25	C	109.3	0.35	50	F
	SB Left	16	0.05	25	C	111.5	0.39	50	F
Gibson & Jackson		0.1	-	-	-	0.6	-	-	-
stop control	EB Left	19	0.02	25	C	114.8	0.38	50	F
	SB Right	19.4	0.08	25	C	39.7	0.1	25	E

* – HCM 95th percentile queue rounded to next 25-foot increment

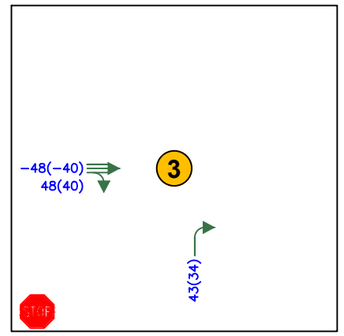
indicate the type of control (stop, yield, none)



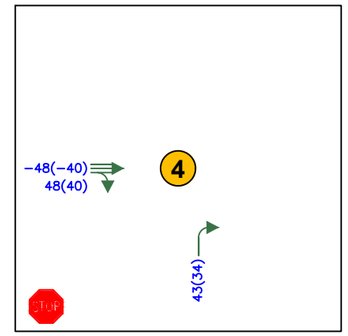
Gibson Blvd/Carlisle Blvd



Gibson Blvd/Maxwell Dr



Gibson Blvd/D1



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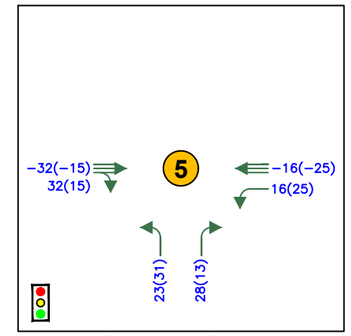
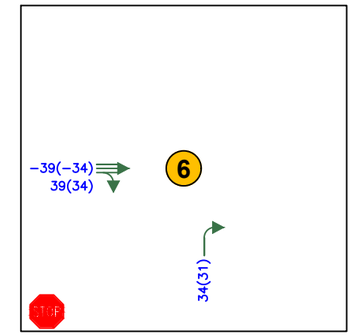
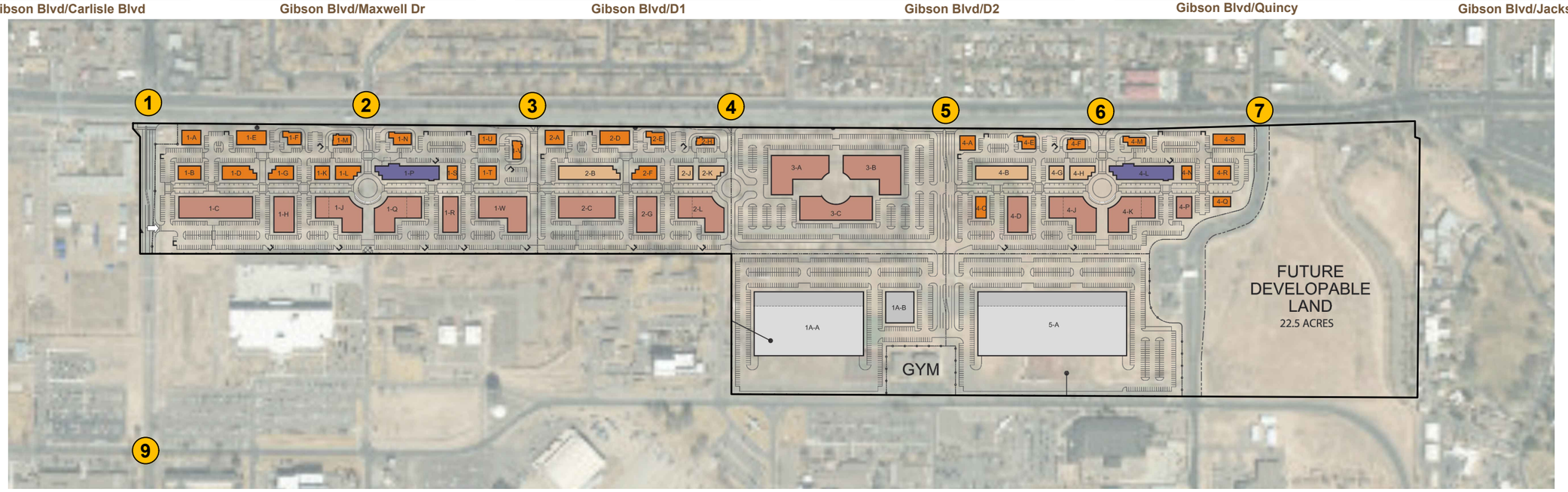


Gibson Blvd/Quincy

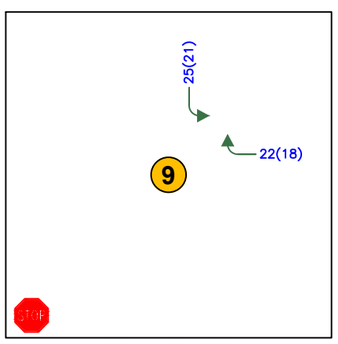


Gibson Blvd/Jackson



N

NTS



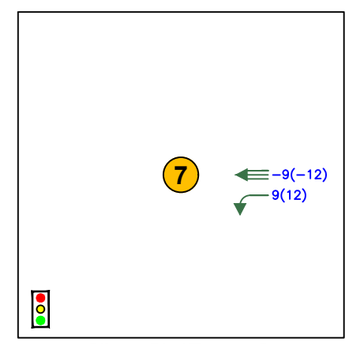
Gibson Blvd/D3

LEGEND

Thru Lanes (# as indicated)

Turning Lanes (# as indicated)

1234(1234) AM(PM) Traffic Counts



Gibson Blvd/Truman St

Bohannan Huston
www.bhinc.com 800.877.5332

ENHANCED USE LEASING - QMAX @ KAFB
ALBUQUERQUE, NM
SITE TRAFFIC ANALYSIS

FIGURES 14
TRIP DISTRIBUTION & ASSIGNMENT VOLUMES-PASS-BY

P:\20190098\TRANS\Study\Report-Production\Report Figures\F14 TripPer-PB.dwg Sep 20, 2019 - 11:11am

2. 2030 BUILD INTERSECTION CAPACITY ANALYSIS

The trips generated by the site (Table 4) were assigned to the intersections using the trip percentages and volumes assigned at each intersection shown in Figure 4 through Figure 13. These trips were added to the 2030 No Build traffic projections in Figure 14.

Figure 15 is a summary of the 2030 Build Peak hour traffic projections, lane geometry, and movement and intersection level of service for the 2030 Build analysis. Table 7 and Table 8 show the 2030 Build analysis results for signalized and unsignalized intersections. Individual intersection output is included in Appendix E.

Results indicate the signalized intersections will continue to operate as they do in the No Build condition.

Due to the addition of a northbound leg at the intersection of Quincy and Gibson, a signal warrant analysis was performed. The analysis found that peak hour traffic volumes signal warrant is satisfied in AM and PM peak hour for the Quincy intersection and is expected to operate at an overall acceptable LOS. See the Section VII for further recommendations regarding the Quincy and Gibson intersection. The traffic volume signal warrant analysis is included in Appendix C.

Table 7 – 2030 Build Signalized Intersection Capacity Analysis Results

	2030 AM Peak			2030 PM Peak		
Signalized Intersections	**Delay (sec)**	**Max V/C**	**LOS**	**Delay (sec)**	**Max V/C**	**LOS**
Gibson & Carlisle	24.4	0.95	C**	98.5	1.53	F**
Gibson & Maxwell	4.9	0.67	A*	10.7	0.91	B*
Gibson & Quincy	5.2	0.85	A*	18.4	0.82	B*
Gibson & Truman	9.8	0.90	C*	158.6	2.91	F**
Gibson & San Mateo	44.1	1.32	D**	45.4	1.07	D**

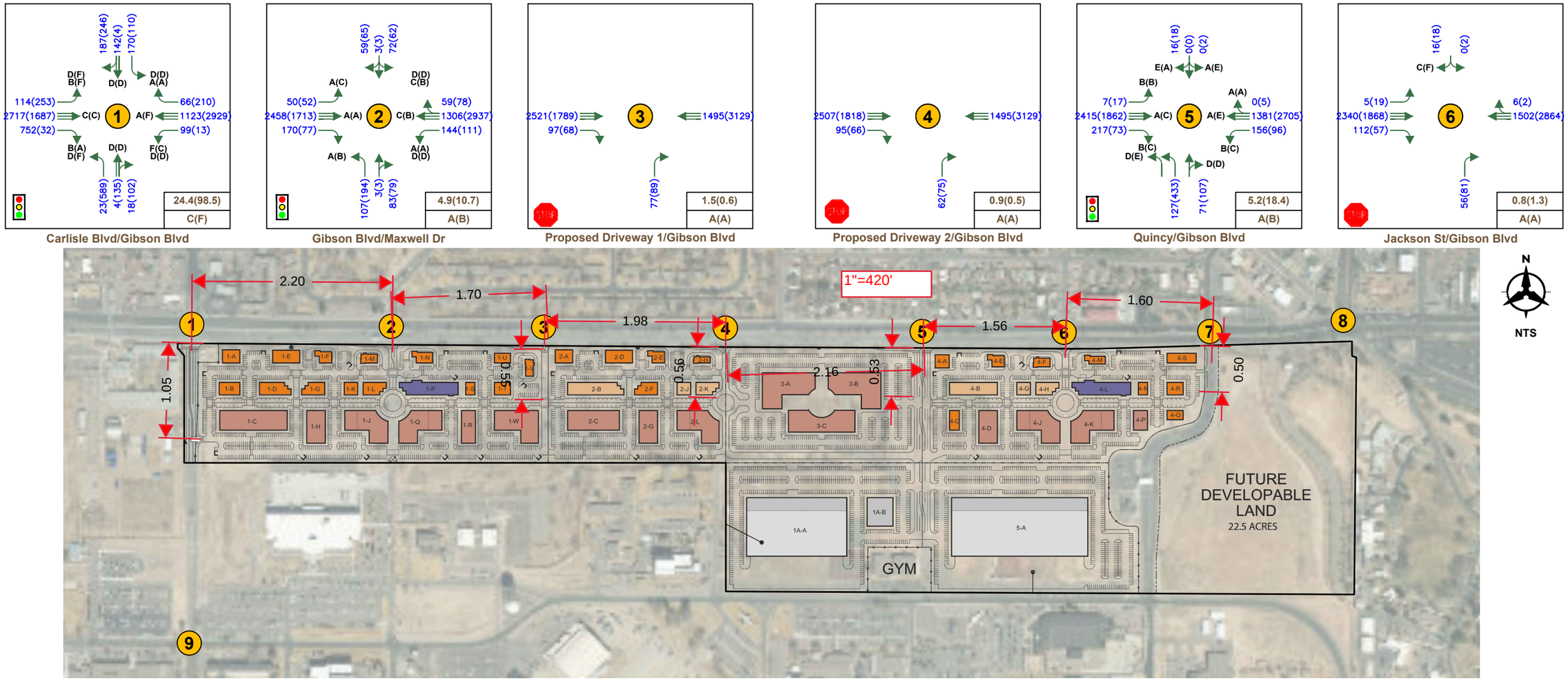
*-movement LOS E
**-movement LOS F

The results indicate that unsignalized intersections are generally expected to operate at acceptable levels of service. The two proposed driveways onto Gibson are expected operate at LOS F for the northbound right movements due to the large traffic volumes on Gibson Boulevard. Queues for these movements are not expected to exceed 4 vehicles.

Table 8 – 2030 Build Unsignalized Intersection Results

Intersection/Movement	2030 AM Peak				2030 PM Peak			
	Delay (sec)	V/C	Queue* (ft)	LOS	Delay (sec)	V/C	Queue* (ft)	LOS
Gibson & Proposed Driveway 1	1.5	-	-	-	0.6	-	-	-
NB Right	80.5	0.67	100	F	32.6	0.45	75	D
Gibson & Proposed Driveway 2	0.9	-	-	-	0.5	-	-	-
NB Right	63	0.53	75	F	30.7	0.37	50	D
Gibson & Jackson	0.8	-	-	-	1.3	-	-	-
NB Right	51.3	0.45	75	F	32	0.39	50	D
EB Left	24.5	0.03	25	C	169.1	0.51	50	F
SB Right	19.7	0.08	25	C	47.5	0.12	25	E
Carlisle & Proposed Driveway 3	1.3	-	-	-	1.7	-	-	-
WB Right	8.5	0.04	25	A	12	0.16	25	B
SB Left	7.4	0.06	25	A	9.6	0.05	25	A

* – HCM 95th percentile queue rounded to next 25-foot increment



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ENHANCED USE LEASING - QMAX @ KAFB
ALBUQUERQUE, NM
SITE TRAFFIC ANALYSIS

FIGURE 15
2030 BUILD AM(PM) PEAK HOUR TRAFFIC VOLUMES

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VII. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

The traffic analysis shows that 2 intersections do not operate at acceptable levels of service under existing 2019, 2030 No Build, and 2030 Build, particularly in the PM peak hour.

In the existing condition, the signalized intersections operate at acceptable levels of service with the exception of the Gibson and Truman intersection which operates at LOS F in the PM peak hour. Most intersections also have movements that operate at LOS E in the PM peak hour. It is evident the large employers of the area such as Albuquerque Sunport, KAFB, and Sandia National Laboratories have a tremendous impact on traffic operations.

In the No Build condition, the signalized intersections will continue to operate at acceptable levels of service, except the two intersections of Gibson and Truman and Gibson and Carlisle. Both unsignalized intersections have movements that are expected to degrade from LOS E to LOS F in the PM peak hour. Truman and Carlisle have traffic signals

In the Build condition, the signalized intersections will continue to operate at acceptable levels of service, except the intersections of Gibson and Truman and Gibson and Carlisle. The northbound right movements onto Gibson for traffic exiting the site are generally expected to operate at a poor LOS due to the high level of eastbound through traffic. This is particularly true in the AM peak hour when traffic to KAFB and SNL is in the adjacent eastbound lanes.

Traffic operational issues identified at the following signalized intersections are explained in greater detail below.

a) *Maxwell and Gibson*

Given the acceptable performance of the Maxwell and Gibson signalized intersection, trips may be diverted from other driveways exiting the site in favor on the Maxwell driveway. This may improve overall operation of other driveways but worsen the operation of the Maxwell driveway. This analysis did not make these adjustments to be consistent with the developed trip distribution and assignments.

b) *Jackson and Gibson*

The Jackson and Gibson unsignalized intersection is proposed to have restricted access with a right in/right out driveway to the proposed development. An eastbound left

turn lane may also be considered, as this movement has an existing turn lane and has reasonable use, with over 60 vehicles performing this left during the 6-hour traffic count.

Under existing conditions, few vehicles are performing southbound left turns (just six vehicles in the six hours of the count). This is likely due to the large volume of traffic on Gibson, and the availability of alternate routes for those destined to the east.

c) *Truman and Gibson*

The Truman and Gibson signalized intersection operates at a poor LOS in all analysis years due to the available laneage for the trips exiting the KAFB in the PM peak hour. Northbound Truman has a combined through/left lane and a dedicated right turn lane, which requires all northbound through movements to wait behind traffic turning left. To create separate left and through lanes right-of-way acquisition would be required along the northeast block of Truman and Gibson. The resulting impact to business access and site circulation (Taco Bell/KFC) maybe excessive due to the present site circulation for those parcels.

No impacts to the business on the north side,

Reconfigure Truman to be 2-lane SB, 1-thru/right NB, 1-thru NB, dual left NB. (total of 5 lane), Sidewalk on west side only. Section width 65 to 70 feet.

Improve the accesses on Carlisle and Truman into and out of development.

2. RECOMMENDATIONS

a) *Dedicated Right Turn Lanes*

The addition of dedicated eastbound right turn lanes entering the site is recommended. The City of Albuquerque Development Process Manual indicates a dedicated right turn lane is warranted on roadways with a design speed of 30-40 MPH and turning volume of 50 vehicles per hour.

b) *Quincy and Gibson*

As identified by the site plan, Quincy and Gibson is expected to become a signalized intersection and was evaluated with a signal in the build analysis. The analysis found that peak hour traffic volumes signal warrant is satisfied in AM and PM peak hour for the Quincy intersection. Dual northbound left turn lanes are recommended at the intersection of Quincy and Gibson.

APPENDIX A:
EXISTING TRAFFIC COUNTS

Mike Henderson Consulting, LLC

5301 Camino Sandia NE
Albuquerque, NM 87111
(505) 275-5706

Collected by: MH7

File Name : Gibson & Carlisle
Site Code :
Start Date : 5/29/2019
Page No : 1

Groups Printed- Car - Truck

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Carlisle Blvd Northbound				Carlisle Blvd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	13	397	153	563	20	162	6	188	0	0	0	0	13	13	17	43	794
06:45	9	493	168	670	13	166	7	186	1	0	1	2	18	30	15	63	921
Total	22	890	321	1233	33	328	13	374	1	0	1	2	31	43	32	106	1715
07:00	11	485	143	639	18	145	3	166	0	0	1	1	20	27	13	60	866
07:15	11	436	126	573	25	187	5	217	1	1	0	2	16	28	25	69	861
07:30	15	422	126	563	21	196	6	223	1	0	0	1	22	26	21	69	856
07:45	12	343	101	456	25	263	8	296	0	0	0	0	24	26	32	82	834
Total	49	1686	496	2231	89	791	22	902	2	1	1	4	82	107	91	280	3417
08:00	10	331	99	440	17	226	6	249	0	0	0	0	15	20	15	50	739
08:15	12	259	61	332	8	172	9	189	1	0	0	1	19	12	19	50	572
08:30	13	311	6	330	2	219	14	235	0	0	6	6	18	0	28	46	617
08:45	25	308	0	333	0	173	5	178	0	0	0	0	30	0	16	46	557
Total	60	1209	166	1435	27	790	34	851	1	0	6	7	82	32	78	192	2485
09:00	15	237	0	252	1	171	8	180	0	0	0	0	18	1	16	35	467
09:15	16	226	1	243	0	177	8	185	1	0	1	2	15	0	19	34	464
*** BREAK ***																	
Total	31	463	1	495	1	348	16	365	1	0	1	2	33	1	35	69	931
*** BREAK ***																	
15:00	20	233	0	253	0	342	14	356	72	13	7	92	9	0	16	25	726
15:15	14	208	0	222	0	379	18	397	43	7	12	62	17	1	23	41	722
15:30	24	215	0	239	0	466	14	480	81	15	10	106	17	1	21	39	864
15:45	34	232	0	266	0	492	19	511	56	10	9	75	14	0	29	43	895
Total	92	888	0	980	0	1679	65	1744	252	45	38	335	57	2	89	148	3207
16:00	22	257	1	280	0	434	28	462	114	38	21	173	11	0	33	44	959
16:15	21	261	0	282	0	523	25	548	105	23	21	149	20	0	30	50	1029
16:30	21	309	2	332	0	480	24	504	116	21	22	159	13	0	22	35	1030
16:45	32	297	0	329	0	521	32	553	90	23	16	129	13	0	25	38	1049
Total	96	1124	3	1223	0	1958	109	2067	425	105	80	610	57	0	110	167	4067
17:00	28	277	1	306	0	462	23	485	53	12	19	84	14	0	29	43	918
17:15	42	307	1	350	0	480	24	504	75	15	15	105	13	0	29	42	1001
17:30	28	239	2	269	0	460	32	492	4	2	2	8	24	0	34	58	827
17:45	21	220	0	241	0	367	28	395	0	0	0	0	20	0	18	38	674
Total	119	1043	4	1166	0	1769	107	1876	132	29	36	197	71	0	110	181	3420
Grand Total	469	7303	991	8763	150	7663	366	8179	814	180	163	1157	413	185	545	1143	19242
Apprch %	5.4	83.3	11.3		1.8	93.7	4.5		70.4	15.6	14.1		36.1	16.2	47.7		
Total %	2.4	38	5.2	45.5	0.8	39.8	1.9	42.5	4.2	0.9	0.8	6	2.1	1	2.8	5.9	
Car	464	7193	990	8647	149	7536	355	8040	813	179	163	1155	402	184	539	1125	18967
% Car	98.9	98.5	99.9	98.7	99.3	98.3	97	98.3	99.9	99.4	100	99.8	97.3	99.5	98.9	98.4	98.6
Truck	5	110	1	116	1	127	11	139	1	1	0	2	11	1	6	18	275
% Truck	1.1	1.5	0.1	1.3	0.7	1.7	3	1.7	0.1	0.6	0	0.2	2.7	0.5	1.1	1.6	1.4

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Collected by: MH7

File Name : Gibson & Carlisle
Site Code :
Start Date : 5/29/2019
Page No : 2

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Carlisle Blvd Northbound				Carlisle Blvd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:45																	
06:45	9	493	168	670	13	166	7	186	1	0	1	2	18	30	15	63	921
07:00	11	485	143	639	18	145	3	166	0	0	1	1	20	27	13	60	866
07:15	11	436	126	573	25	187	5	217	1	1	0	2	16	28	25	69	861
07:30	15	422	126	563	21	196	6	223	1	0	0	1	22	26	21	69	856
Total Volume	46	1836	563	2445	77	694	21	792	3	1	2	6	76	111	74	261	3504
% App. Total	1.9	75.1	23		9.7	87.6	2.7		50	16.7	33.3		29.1	42.5	28.4		
PHF	.767	.931	.838	.912	.770	.885	.750	.888	.750	.250	.500	.750	.864	.925	.740	.946	.951
Car	46	1817	563	2426	77	680	19	776	3	1	2	6	74	111	73	258	3466
% Car	100	99.0	100	99.2	100	98.0	90.5	98.0	100	100	100	100	97.4	100	98.6	98.9	98.9
Truck	0	19	0	19	0	14	2	16	0	0	0	0	2	0	1	3	38
% Truck	0	1.0	0	0.8	0	2.0	9.5	2.0	0	0	0	0	2.6	0	1.4	1.1	1.1
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	22	257	1	280	0	434	28	462	114	38	21	173	11	0	33	44	959
16:15	21	261	0	282	0	523	25	548	105	23	21	149	20	0	30	50	1029
16:30	21	309	2	332	0	480	24	504	116	21	22	159	13	0	22	35	1030
16:45	32	297	0	329	0	521	32	553	90	23	16	129	13	0	25	38	1049
Total Volume	96	1124	3	1223	0	1958	109	2067	425	105	80	610	57	0	110	167	4067
% App. Total	7.8	91.9	0.2		0	94.7	5.3		69.7	17.2	13.1		34.1	0	65.9		
PHF	.750	.909	.375	.921	.000	.936	.852	.934	.916	.691	.909	.882	.713	.000	.833	.835	.969
Car	96	1102	3	1201	0	1933	108	2041	425	105	80	610	56	0	110	166	4018
% Car	100	98.0	100	98.2	0	98.7	99.1	98.7	100	100	100	100	98.2	0	100	99.4	98.8
Truck	0	22	0	22	0	25	1	26	0	0	0	0	1	0	0	1	49
% Truck	0	2.0	0	1.8	0	1.3	0.9	1.3	0	0	0	0	1.8	0	0	0.6	1.2

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Collected by: MH10

File Name : Gibson & Jackson St
Site Code :
Start Date : 5/29/2019
Page No : 1

Groups Printed- Car - Truck

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Northbound				Jackson St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	0	414	0	414	0	164	1	165	0	0	0	0	1	0	1	2	581
06:45	2	520	0	522	0	188	2	190	0	0	0	0	0	0	3	3	715
Total	2	934	0	936	0	352	3	355	0	0	0	0	1	0	4	5	1296
07:00	2	465	0	467	0	150	1	151	0	0	0	0	0	0	5	5	623
07:15	0	469	0	469	0	231	0	231	0	0	0	0	0	0	2	2	702
07:30	1	428	0	429	0	197	2	199	0	0	0	0	0	0	7	7	635
07:45	1	396	0	397	0	330	2	332	0	0	0	0	1	0	2	3	732
Total	4	1758	0	1762	0	908	5	913	0	0	0	0	1	0	16	17	2692
08:00	0	330	0	330	0	226	0	226	0	0	0	0	0	0	1	1	557
08:15	4	302	0	306	0	203	2	205	0	0	0	0	0	0	1	1	512
08:30	3	320	0	323	0	206	0	206	0	0	0	0	1	0	4	5	534
08:45	1	350	0	351	0	195	0	195	0	0	0	0	0	0	3	3	549
Total	8	1302	0	1310	0	830	2	832	0	0	0	0	1	0	9	10	2152
09:00	2	252	0	254	0	181	0	181	0	0	0	0	0	0	0	0	435
09:15	1	258	0	259	0	176	0	176	0	0	0	0	1	0	0	1	436
*** BREAK ***																	
Total	3	510	0	513	0	357	0	357	0	0	0	0	1	0	0	1	871
*** BREAK ***																	
15:00	4	237	0	241	0	355	1	356	0	0	0	0	0	0	0	0	597
15:15	3	229	0	232	0	422	3	425	0	0	0	0	0	0	8	8	665
15:30	5	216	0	221	0	506	1	507	0	0	0	0	1	0	0	1	729
15:45	3	281	0	284	0	530	1	531	0	0	0	0	0	0	4	4	819
Total	15	963	0	978	0	1813	6	1819	0	0	0	0	1	0	12	13	2810
16:00	2	251	0	253	0	501	2	503	0	0	0	0	0	0	2	2	758
16:15	3	294	0	297	0	542	0	542	0	0	0	0	0	0	1	1	840
16:30	5	316	0	321	0	552	1	553	0	0	0	0	0	0	1	1	875
16:45	4	314	0	318	0	531	1	532	0	0	0	0	0	0	3	3	853
Total	14	1175	0	1189	0	2126	4	2130	0	0	0	0	0	0	7	7	3326
17:00	4	288	0	292	0	492	0	492	0	0	0	0	0	0	4	4	788
17:15	4	318	0	322	0	505	1	506	0	0	0	0	0	0	3	3	831
17:30	4	247	0	251	0	483	0	483	0	0	0	0	1	0	1	2	736
17:45	3	230	0	233	0	395	0	395	0	0	0	0	0	0	3	3	631
Total	15	1083	0	1098	0	1875	1	1876	0	0	0	0	1	0	11	12	2986
Grand Total	61	7725	0	7786	0	8261	21	8282	0	0	0	0	6	0	59	65	16133
Apprch %	0.8	99.2	0		0	99.7	0.3		0	0	0		9.2	0	90.8		
Total %	0.4	47.9	0	48.3	0	51.2	0.1	51.3	0	0	0	0	0	0	0.4	0.4	
Car	61	7614	0	7675	0	8115	21	8136	0	0	0	0	6	0	58	64	15875
% Car	100	98.6	0	98.6	0	98.2	100	98.2	0	0	0	0	100	0	98.3	98.5	98.4
Truck	0	111	0	111	0	146	0	146	0	0	0	0	0	0	1	1	258
% Truck	0	1.4	0	1.4	0	1.8	0	1.8	0	0	0	0	0	0	1.7	1.5	1.6

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Collected by: MH10

File Name : Gibson & Jackson St
Site Code :
Start Date : 5/29/2019
Page No : 2

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Northbound				Jackson St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	2	465	0	467	0	150	1	151	0	0	0	0	0	0	5	5	623
07:15	0	469	0	469	0	231	0	231	0	0	0	0	0	0	2	2	702
07:30	1	428	0	429	0	197	2	199	0	0	0	0	0	0	7	7	635
07:45	1	396	0	397	0	330	2	332	0	0	0	0	1	0	2	3	732
Total Volume	4	1758	0	1762	0	908	5	913	0	0	0	0	1	0	16	17	2692
% App. Total	0.2	99.8	0		0	99.5	0.5		0	0	0		5.9	0	94.1		
PHF	.500	.937	.000	.939	.000	.688	.625	.688	.000	.000	.000	.000	.250	.000	.571	.607	.919
Car	4	1741	0	1745	0	886	5	891	0	0	0	0	1	0	15	16	2652
% Car	100	99.0	0	99.0	0	97.6	100	97.6	0	0	0	0	100	0	93.8	94.1	98.5
Truck	0	17	0	17	0	22	0	22	0	0	0	0	0	0	1	1	40
% Truck	0	1.0	0	1.0	0	2.4	0	2.4	0	0	0	0	0	0	6.3	5.9	1.5
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	3	294	0	297	0	542	0	542	0	0	0	0	0	0	1	1	840
16:30	5	316	0	321	0	552	1	553	0	0	0	0	0	0	1	1	875
16:45	4	314	0	318	0	531	1	532	0	0	0	0	0	0	3	3	853
17:00	4	288	0	292	0	492	0	492	0	0	0	0	0	0	4	4	788
Total Volume	16	1212	0	1228	0	2117	2	2119	0	0	0	0	0	0	9	9	3356
% App. Total	1.3	98.7	0		0	99.9	0.1		0	0	0		0	0	100		
PHF	.800	.959	.000	.956	.000	.959	.500	.958	.000	.000	.000	.000	.000	.000	.563	.563	.959
Car	16	1193	0	1209	0	2096	2	2098	0	0	0	0	0	0	9	9	3316
% Car	100	98.4	0	98.5	0	99.0	100	99.0	0	0	0	0	0	0	100	100	98.8
Truck	0	19	0	19	0	21	0	21	0	0	0	0	0	0	0	0	40
% Truck	0	1.6	0	1.5	0	1.0	0	1.0	0	0	0	0	0	0	0	0	1.2

Mike Henderson Consulting, LLC

5301 Camino Sandia NE
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Collected by: MH6

File Name : Gibson & Maxwell
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Groups Printed- Car - Truck

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Maxwell St Northbound				Maxwell St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	6	400	0	406	0	174	6	180	0	0	0	0	17	0	12	29	615
06:45	6	482	0	488	0	179	5	184	0	0	0	0	15	0	7	22	694
Total	12	882	0	894	0	353	11	364	0	0	0	0	32	0	19	51	1309
07:00	11	481	0	492	0	160	6	166	0	0	0	0	8	0	11	19	677
07:15	8	419	0	427	0	214	6	220	0	0	0	0	12	0	10	22	669
07:30	10	432	0	442	0	217	13	230	0	0	0	0	17	0	13	30	702
07:45	13	349	0	362	0	308	24	332	0	0	0	0	23	0	15	38	732
Total	42	1681	0	1723	0	899	49	948	0	0	0	0	60	0	49	109	2780
08:00	10	332	0	342	0	226	21	247	0	0	0	0	8	0	11	19	608
08:15	8	267	0	275	0	191	13	204	0	0	0	0	22	0	7	29	508
08:30	9	320	0	329	0	220	10	230	0	0	0	0	10	0	5	15	574
08:45	4	336	0	340	0	184	7	191	0	0	0	0	17	0	4	21	552
Total	31	1255	0	1286	0	821	51	872	0	0	0	0	57	0	27	84	2242
09:00	3	245	0	248	0	173	8	181	0	0	0	0	14	0	3	17	446
09:15	3	242	0	245	0	184	6	190	0	0	0	0	10	0	4	14	449
*** BREAK ***																	
Total	6	487	0	493	0	357	14	371	0	0	0	0	24	0	7	31	895
*** BREAK ***																	
15:00	7	229	0	236	0	348	13	361	0	0	0	0	13	0	6	19	616
15:15	7	232	0	239	0	407	19	426	0	0	0	0	5	0	8	13	678
15:30	7	232	0	239	0	483	14	497	0	0	0	0	9	0	4	13	749
15:45	3	253	0	256	0	512	14	526	0	0	0	0	10	0	14	24	806
Total	24	946	0	970	0	1750	60	1810	0	0	0	0	37	0	32	69	2849
16:00	4	271	0	275	0	456	18	474	0	0	0	0	15	0	13	28	777
16:15	8	290	0	298	0	523	20	543	0	0	0	0	16	0	14	30	871
16:30	7	296	0	303	0	519	15	534	0	0	0	0	10	0	15	25	862
16:45	13	294	0	307	0	544	10	554	0	0	0	0	9	0	11	20	881
Total	32	1151	0	1183	0	2042	63	2105	0	0	0	0	50	0	53	103	3391
17:00	15	289	0	304	0	468	20	488	0	0	0	0	17	0	14	31	823
17:15	13	314	0	327	0	483	21	504	0	0	0	0	6	0	11	17	848
17:30	6	260	0	266	0	491	22	513	0	0	0	0	13	0	15	28	807
17:45	9	218	0	227	0	371	21	392	0	0	0	0	16	0	13	29	648
Total	43	1081	0	1124	0	1813	84	1897	0	0	0	0	52	0	53	105	3126
Grand Total	190	7483	0	7673	0	8035	332	8367	0	0	0	0	312	0	240	552	16592
Apprch %	2.5	97.5	0		0	96	4		0	0	0		56.5	0	43.5		
Total %	1.1	45.1	0	46.2	0	48.4	2	50.4	0	0	0	0	1.9	0	1.4	3.3	
Car	187	7372	0	7559	0	7891	330	8221	0	0	0	0	312	0	240	552	16332
% Car	98.4	98.5	0	98.5	0	98.2	99.4	98.3	0	0	0	0	100	0	100	100	98.4
Truck	3	111	0	114	0	144	2	146	0	0	0	0	0	0	0	0	260
% Truck	1.6	1.5	0	1.5	0	1.8	0.6	1.7	0	0	0	0	0	0	0	0	1.6

Mike Henderson Consulting, LLC
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	Gibson Blvd Eastbound				Gibson Blvd Westbound				Maxwell St Northbound				Maxwell St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	11	481	0	492	0	160	6	166	0	0	0	0	8	0	11	19	677
07:15	8	419	0	427	0	214	6	220	0	0	0	0	12	0	10	22	669
07:30	10	432	0	442	0	217	13	230	0	0	0	0	17	0	13	30	702
07:45	13	349	0	362	0	308	24	332	0	0	0	0	23	0	15	38	732
Total Volume	42	1681	0	1723	0	899	49	948	0	0	0	0	60	0	49	109	2780
% App. Total	2.4	97.6	0		0	94.8	5.2		0	0	0		55	0	45		
PHF	.808	.874	.000	.876	.000	.730	.510	.714	.000	.000	.000	.000	.652	.000	.817	.717	.949
Car	42	1664	0	1706	0	879	49	928	0	0	0	0	60	0	49	109	2743
% Car	100	99.0	0	99.0	0	97.8	100	97.9	0	0	0	0	100	0	100	100	98.7
Truck	0	17	0	17	0	20	0	20	0	0	0	0	0	0	0	0	37
% Truck	0	1.0	0	1.0	0	2.2	0	2.1	0	0	0	0	0	0	0	0	1.3
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	8	290	0	298	0	523	20	543	0	0	0	0	16	0	14	30	871
16:30	7	296	0	303	0	519	15	534	0	0	0	0	10	0	15	25	862
16:45	13	294	0	307	0	544	10	554	0	0	0	0	9	0	11	20	881
17:00	15	289	0	304	0	468	20	488	0	0	0	0	17	0	14	31	823
Total Volume	43	1169	0	1212	0	2054	65	2119	0	0	0	0	52	0	54	106	3437
% App. Total	3.5	96.5	0		0	96.9	3.1		0	0	0		49.1	0	50.9		
PHF	.717	.987	.000	.987	.000	.944	.813	.956	.000	.000	.000	.000	.765	.000	.900	.855	.975
Car	43	1150	0	1193	0	2029	64	2093	0	0	0	0	52	0	54	106	3392
% Car	100	98.4	0	98.4	0	98.8	98.5	98.8	0	0	0	0	100	0	100	100	98.7
Truck	0	19	0	19	0	25	1	26	0	0	0	0	0	0	0	0	45
% Truck	0	1.6	0	1.6	0	1.2	1.5	1.2	0	0	0	0	0	0	0	0	1.3

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Groups Printed- Car - Truck

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Northbound				Quincy St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	0	432	0	432	0	166	0	166	0	0	0	0	0	0	1	1	599
06:45	3	511	0	514	0	190	0	190	0	0	0	0	0	0	0	0	704
Total	3	943	0	946	0	356	0	356	0	0	0	0	0	0	1	1	1303
07:00	3	484	0	487	0	156	0	156	0	0	0	0	0	0	2	2	645
07:15	1	473	0	474	0	232	0	232	0	0	0	0	0	0	1	1	707
07:30	2	442	0	444	0	205	0	205	0	0	0	0	0	0	6	6	655
07:45	0	390	0	390	0	330	0	330	0	0	0	0	0	0	4	4	724
Total	6	1789	0	1795	0	923	0	923	0	0	0	0	0	0	13	13	2731
08:00	1	338	0	339	0	228	0	228	0	0	0	0	1	0	7	8	575
08:15	1	306	0	307	0	206	0	206	0	0	0	0	0	0	5	5	518
08:30	1	335	0	336	0	216	0	216	0	0	0	0	1	0	3	4	556
08:45	0	348	0	348	0	196	1	197	0	0	0	0	1	0	2	3	548
Total	3	1327	0	1330	0	846	1	847	0	0	0	0	3	0	17	20	2197
09:00	5	262	0	267	0	187	1	188	0	0	0	0	1	0	2	3	458
09:15	3	257	0	260	0	172	3	175	0	0	0	0	0	0	5	5	440
*** BREAK ***																	
Total	8	519	0	527	0	359	4	363	0	0	0	0	1	0	7	8	898
*** BREAK ***																	
15:00	1	247	0	248	0	364	2	366	0	0	0	0	1	0	3	4	618
15:15	2	238	0	240	0	418	3	421	0	0	0	0	0	0	5	5	666
15:30	0	225	0	225	0	499	1	500	0	0	0	0	0	0	2	2	727
15:45	3	291	0	294	0	538	2	540	0	0	0	0	0	0	1	1	835
Total	6	1001	0	1007	0	1819	8	1827	0	0	0	0	1	0	11	12	2846
16:00	2	254	0	256	0	496	1	497	0	0	0	0	0	0	1	1	754
16:15	2	302	0	304	0	544	2	546	0	0	0	0	1	0	2	3	853
16:30	6	327	0	333	0	547	0	547	0	0	0	0	1	0	5	6	886
16:45	3	325	0	328	0	533	2	535	0	0	0	0	0	0	6	6	869
Total	13	1208	0	1221	0	2120	5	2125	0	0	0	0	2	0	14	16	3362
17:00	3	296	0	299	0	483	0	483	0	0	0	0	0	0	2	2	784
17:15	3	324	0	327	0	500	2	502	0	0	0	0	0	0	2	2	831
17:30	4	258	0	262	0	489	0	489	0	0	0	0	0	0	1	1	752
17:45	4	235	0	239	0	399	2	401	0	0	0	0	0	0	0	0	640
Total	14	1113	0	1127	0	1871	4	1875	0	0	0	0	0	0	5	5	3007
Grand Total	53	7900	0	7953	0	8294	22	8316	0	0	0	0	7	0	68	75	16344
Apprch %	0.7	99.3	0		0	99.7	0.3		0	0	0		9.3	0	90.7		
Total %	0.3	48.3	0	48.7	0	50.7	0.1	50.9	0	0	0	0	0	0	0.4	0.5	
Car	51	7779	0	7830	0	8150	21	8171	0	0	0	0	7	0	68	75	16076
% Car	96.2	98.5	0	98.5	0	98.3	95.5	98.3	0	0	0	0	100	0	100	100	98.4
Truck	2	121	0	123	0	144	1	145	0	0	0	0	0	0	0	0	268
% Truck	3.8	1.5	0	1.5	0	1.7	4.5	1.7	0	0	0	0	0	0	0	0	1.6

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	Gibson Blvd Eastbound				Gibson Blvd Westbound				Northbound				Quincy St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	3	484	0	487	0	156	0	156	0	0	0	0	0	0	2	2	645
07:15	1	473	0	474	0	232	0	232	0	0	0	0	0	0	1	1	707
07:30	2	442	0	444	0	205	0	205	0	0	0	0	0	0	6	6	655
07:45	0	390	0	390	0	330	0	330	0	0	0	0	0	0	4	4	724
Total Volume	6	1789	0	1795	0	923	0	923	0	0	0	0	0	0	13	13	2731
% App. Total	0.3	99.7	0		0	100	0		0	0	0		0	0	100		
PHF	.500	.924	.000	.921	.000	.699	.000	.699	.000	.000	.000	.000	.000	.000	.542	.542	.943
Car	5	1770	0	1775	0	903	0	903	0	0	0	0	0	0	13	13	2691
% Car	83.3	98.9	0	98.9	0	97.8	0	97.8	0	0	0	0	0	0	100	100	98.5
Truck	1	19	0	20	0	20	0	20	0	0	0	0	0	0	0	0	40
% Truck	16.7	1.1	0	1.1	0	2.2	0	2.2	0	0	0	0	0	0	0	0	1.5
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	2	302	0	304	0	544	2	546	0	0	0	0	1	0	2	3	853
16:30	6	327	0	333	0	547	0	547	0	0	0	0	1	0	5	6	886
16:45	3	325	0	328	0	533	2	535	0	0	0	0	0	0	6	6	869
17:00	3	296	0	299	0	483	0	483	0	0	0	0	0	0	2	2	784
Total Volume	14	1250	0	1264	0	2107	4	2111	0	0	0	0	2	0	15	17	3392
% App. Total	1.1	98.9	0		0	99.8	0.2		0	0	0		11.8	0	88.2		
PHF	.583	.956	.000	.949	.000	.963	.500	.965	.000	.000	.000	.000	.500	.000	.625	.708	.957
Car	14	1227	0	1241	0	2083	4	2087	0	0	0	0	2	0	15	17	3345
% Car	100	98.2	0	98.2	0	98.9	100	98.9	0	0	0	0	100	0	100	100	98.6
Truck	0	23	0	23	0	24	0	24	0	0	0	0	0	0	0	0	47
% Truck	0	1.8	0	1.8	0	1.1	0	1.1	0	0	0	0	0	0	0	0	1.4

Mike Henderson Consulting, LLC

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Collected by: MH17

File Name : Gibson & San Mateo
Site Code :
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Groups Printed- Car - Truck

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Ridgecrest Dr Northbound				San Mateo Blvd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	25	156	75	256	16	168	10	194	5	3	2	10	20	30	62	112	572
06:45	40	229	131	400	16	182	10	208	5	5	3	13	16	58	62	136	757
Total	65	385	206	656	32	350	20	402	10	8	5	23	36	88	124	248	1329
07:00	31	176	122	329	19	135	13	167	14	12	7	33	25	83	44	152	681
07:15	46	189	125	360	20	195	10	225	9	8	7	24	8	66	81	155	764
07:30	37	203	90	330	20	172	17	209	15	16	5	36	35	53	59	147	722
07:45	60	173	101	334	27	283	13	323	29	5	10	44	26	52	75	153	854
Total	174	741	438	1353	86	785	53	924	67	41	29	137	94	254	259	607	3021
08:00	42	139	67	248	17	165	10	192	38	17	8	63	19	45	85	149	652
08:15	36	165	59	260	11	162	19	192	25	16	7	48	19	35	54	108	608
08:30	47	119	57	223	7	160	19	186	24	14	7	45	11	35	63	109	563
08:45	42	159	74	275	10	149	11	170	29	9	6	44	19	25	50	94	583
Total	167	582	257	1006	45	636	59	740	116	56	28	200	68	140	252	460	2406
09:00	31	114	48	193	12	123	26	161	36	19	15	70	9	21	54	84	508
09:15	32	113	47	192	9	124	25	158	26	23	7	56	24	30	47	101	507
*** BREAK ***																	
Total	63	227	95	385	21	247	51	319	62	42	22	126	33	51	101	185	1015
*** BREAK ***																	
15:00	67	187	21	275	3	167	32	202	65	34	10	109	10	17	62	89	675
15:15	59	158	21	238	6	187	32	225	69	39	17	125	13	19	58	90	678
15:30	53	181	25	259	5	267	37	309	78	34	12	124	10	9	73	92	784
15:45	47	208	18	273	3	277	29	309	79	42	23	144	16	12	69	97	823
Total	226	734	85	1045	17	898	130	1045	291	149	62	502	49	57	262	368	2960
16:00	74	234	4	312	3	268	42	313	67	38	17	122	16	8	55	79	826
16:15	71	212	17	300	3	277	33	313	80	45	10	135	11	11	60	82	830
16:30	70	280	18	368	0	286	44	330	74	57	27	158	17	8	74	99	955
16:45	57	278	14	349	4	290	49	343	64	46	19	129	26	15	63	104	925
Total	272	1004	53	1329	10	1121	168	1299	285	186	73	544	70	42	252	364	3536
17:00	62	238	6	306	1	282	37	320	46	25	9	80	12	5	83	100	806
17:15	72	284	10	366	4	301	33	338	31	24	8	63	12	9	82	103	870
17:30	68	216	12	296	3	275	48	326	28	14	7	49	20	6	77	103	774
17:45	58	196	11	265	7	205	26	238	21	6	8	35	19	6	82	107	645
Total	260	934	39	1233	15	1063	144	1222	126	69	32	227	63	26	324	413	3095
Grand Total	1227	4607	1173	7007	226	5100	625	5951	957	551	251	1759	413	658	1574	2645	17362
Apprch %	17.5	65.7	16.7		3.8	85.7	10.5		54.4	31.3	14.3		15.6	24.9	59.5		
Total %	7.1	26.5	6.8	40.4	1.3	29.4	3.6	34.3	5.5	3.2	1.4	10.1	2.4	3.8	9.1	15.2	
Car	1210	4538	1154	6902	222	5014	622	5858	940	524	247	1711	407	629	1547	2583	17054
% Car	98.6	98.5	98.4	98.5	98.2	98.3	99.5	98.4	98.2	95.1	98.4	97.3	98.5	95.6	98.3	97.7	98.2
Truck	17	69	19	105	4	86	3	93	17	27	4	48	6	29	27	62	308
% Truck	1.4	1.5	1.6	1.5	1.8	1.7	0.5	1.6	1.8	4.9	1.6	2.7	1.5	4.4	1.7	2.3	1.8

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File Name : Gibson & San Mateo
Site Code :
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Page No : 2

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Ridgecrest Dr Northbound				San Mateo Blvd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	31	176	122	329	19	135	13	167	14	12	7	33	25	83	44	152	681
07:15	46	189	125	360	20	195	10	225	9	8	7	24	8	66	81	155	764
07:30	37	203	90	330	20	172	17	209	15	16	5	36	35	53	59	147	722
07:45	60	173	101	334	27	283	13	323	29	5	10	44	26	52	75	153	854
Total Volume	174	741	438	1353	86	785	53	924	67	41	29	137	94	254	259	607	3021
% App. Total	12.9	54.8	32.4		9.3	85	5.7		48.9	29.9	21.2		15.5	41.8	42.7		
PHF	.725	.913	.876	.940	.796	.693	.779	.715	.578	.641	.725	.778	.671	.765	.799	.979	.884
Car	172	730	433	1335	86	773	52	911	65	37	27	129	94	249	257	600	2975
% Car	98.9	98.5	98.9	98.7	100	98.5	98.1	98.6	97.0	90.2	93.1	94.2	100	98.0	99.2	98.8	98.5
Truck	2	11	5	18	0	12	1	13	2	4	2	8	0	5	2	7	46
% Truck	1.1	1.5	1.1	1.3	0	1.5	1.9	1.4	3.0	9.8	6.9	5.8	0	2.0	0.8	1.2	1.5
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	70	280	18	368	0	286	44	330	74	57	27	158	17	8	74	99	955
16:45	57	278	14	349	4	290	49	343	64	46	19	129	26	15	63	104	925
17:00	62	238	6	306	1	282	37	320	46	25	9	80	12	5	83	100	806
17:15	72	284	10	366	4	301	33	338	31	24	8	63	12	9	82	103	870
Total Volume	261	1080	48	1389	9	1159	163	1331	215	152	63	430	67	37	302	406	3556
% App. Total	18.8	77.8	3.5		0.7	87.1	12.2		50	35.3	14.7		16.5	9.1	74.4		
PHF	.906	.951	.667	.944	.563	.963	.832	.970	.726	.667	.583	.680	.644	.617	.910	.976	.931
Car	257	1071	45	1373	9	1146	163	1318	212	148	63	423	66	33	295	394	3508
% Car	98.5	99.2	93.8	98.8	100	98.9	100	99.0	98.6	97.4	100	98.4	98.5	89.2	97.7	97.0	98.7
Truck	4	9	3	16	0	13	0	13	3	4	0	7	1	4	7	12	48
% Truck	1.5	0.8	6.3	1.2	0	1.1	0	1.0	1.4	2.6	0	1.6	1.5	10.8	2.3	3.0	1.3

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Groups Printed- Car - Truck

	Gibson Blvd Eastbound				Gibson Blvd Westbound				Truman St Northbound				Truman St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	1	256	132	389	63	165	1	229	7	0	4	11	0	22	1	23	652
06:45	3	386	150	539	73	183	1	257	6	1	5	12	3	21	2	26	834
Total	4	642	282	928	136	348	2	486	13	1	9	23	3	43	3	49	1486
07:00	4	314	131	449	59	136	2	197	10	0	6	16	4	24	5	33	695
07:15	3	350	143	496	63	220	2	285	13	0	8	21	1	26	3	30	832
07:30	1	322	94	417	58	188	0	246	12	0	10	22	1	17	5	23	708
07:45	2	325	92	419	63	307	0	370	21	1	8	30	2	14	6	22	841
Total	10	1311	460	1781	243	851	4	1098	56	1	32	89	8	81	19	108	3076
08:00	5	233	79	317	77	202	1	280	24	0	15	39	4	15	3	22	658
08:15	4	239	70	313	47	193	2	242	14	1	16	31	2	7	7	16	602
08:30	5	211	92	308	63	178	1	242	20	1	13	34	4	17	6	27	611
08:45	4	240	124	368	57	161	3	221	23	0	19	42	4	7	3	14	645
Total	18	923	365	1306	244	734	7	985	81	2	63	146	14	46	19	79	2516
09:00	1	175	71	247	41	158	1	200	17	1	19	37	1	10	4	15	499
09:15	4	188	64	256	31	158	4	193	17	0	12	29	2	6	4	12	490
*** BREAK ***																	
Total	5	363	135	503	72	316	5	393	34	1	31	66	3	16	8	27	989
*** BREAK ***																	
15:00	2	219	31	252	14	271	5	290	100	1	55	156	1	0	5	6	704
15:15	10	185	19	214	15	301	7	323	117	4	50	171	1	2	10	13	721
15:30	7	214	12	233	18	380	5	403	121	4	38	163	2	1	12	15	814
15:45	8	227	25	260	15	407	1	423	114	11	47	172	6	2	10	18	873
Total	27	845	87	959	62	1359	18	1439	452	20	190	662	10	5	37	52	3112
16:00	2	252	9	263	7	360	0	367	137	11	68	216	3	0	5	8	854
16:15	12	259	18	289	7	394	1	402	148	9	52	209	3	2	3	8	908
16:30	10	291	15	316	4	407	3	414	148	12	61	221	2	2	6	10	961
16:45	8	282	11	301	7	376	8	391	150	9	36	195	3	2	10	15	902
Total	32	1084	53	1169	25	1537	12	1574	583	41	217	841	11	6	24	41	3625
17:00	3	275	8	286	7	386	5	398	109	13	40	162	2	3	6	11	857
17:15	8	295	7	310	4	392	7	403	110	12	59	181	6	2	16	24	918
17:30	8	237	7	252	16	355	3	374	119	20	52	191	2	3	17	22	839
17:45	3	216	13	232	3	288	6	297	87	9	37	133	4	0	8	12	674
Total	22	1023	35	1080	30	1421	21	1472	425	54	188	667	14	8	47	69	3288
Grand Total	118	6191	1417	7726	812	6566	69	7447	1644	120	730	2494	63	205	157	425	18092
Apprch %	1.5	80.1	18.3		10.9	88.2	0.9		65.9	4.8	29.3		14.8	48.2	36.9		
Total %	0.7	34.2	7.8	42.7	4.5	36.3	0.4	41.2	9.1	0.7	4	13.8	0.3	1.1	0.9	2.3	
Car	115	6086	1407	7608	805	6442	68	7315	1621	120	723	2464	63	205	151	419	17806
% Car	97.5	98.3	99.3	98.5	99.1	98.1	98.6	98.2	98.6	100	99	98.8	100	100	96.2	98.6	98.4
Truck	3	105	10	118	7	124	1	132	23	0	7	30	0	0	6	6	286
% Truck	2.5	1.7	0.7	1.5	0.9	1.9	1.4	1.8	1.4	0	1	1.2	0	0	3.8	1.4	1.6

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	Gibson Blvd Eastbound				Gibson Blvd Westbound				Truman St Northbound				Truman St Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	4	314	131	449	59	136	2	197	10	0	6	16	4	24	5	33	695
07:15	3	350	143	496	63	220	2	285	13	0	8	21	1	26	3	30	832
07:30	1	322	94	417	58	188	0	246	12	0	10	22	1	17	5	23	708
07:45	2	325	92	419	63	307	0	370	21	1	8	30	2	14	6	22	841
Total Volume	10	1311	460	1781	243	851	4	1098	56	1	32	89	8	81	19	108	3076
% App. Total	0.6	73.6	25.8		22.1	77.5	0.4		62.9	1.1	36		7.4	75	17.6		
PHF	.625	.936	.804	.898	.964	.693	.500	.742	.667	.250	.800	.742	.500	.779	.792	.818	.914
Car	10	1293	460	1763	243	836	3	1082	50	1	31	82	8	81	19	108	3035
% Car	100	98.6	100	99.0	100	98.2	75.0	98.5	89.3	100	96.9	92.1	100	100	100	100	98.7
Truck	0	18	0	18	0	15	1	16	6	0	1	7	0	0	0	0	41
% Truck	0	1.4	0	1.0	0	1.8	25.0	1.5	10.7	0	3.1	7.9	0	0	0	0	1.3
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	10	291	15	316	4	407	3	414	148	12	61	221	2	2	6	10	961
16:45	8	282	11	301	7	376	8	391	150	9	36	195	3	2	10	15	902
17:00	3	275	8	286	7	386	5	398	109	13	40	162	2	3	6	11	857
17:15	8	295	7	310	4	392	7	403	110	12	59	181	6	2	16	24	918
Total Volume	29	1143	41	1213	22	1561	23	1606	517	46	196	759	13	9	38	60	3638
% App. Total	2.4	94.2	3.4		1.4	97.2	1.4		68.1	6.1	25.8		21.7	15	63.3		
PHF	.725	.969	.683	.960	.786	.959	.719	.970	.862	.885	.803	.859	.542	.750	.594	.625	.946
Car	29	1127	37	1193	20	1540	23	1583	517	46	195	758	13	9	37	59	3593
% Car	100	98.6	90.2	98.4	90.9	98.7	100	98.6	100	100	99.5	99.9	100	100	97.4	98.3	98.8
Truck	0	16	4	20	2	21	0	23	0	0	1	1	0	0	1	1	45
% Truck	0	1.4	9.8	1.6	9.1	1.3	0	1.4	0	0	0.5	0.1	0	0	2.6	1.7	1.2

APPENDIX B:
2019 EXISTING INTERSECTION CAPACITY ANALYSIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1836	563	77	694	21	3	1	2	76	111	74
Future Volume (veh/h)	46	1836	563	77	694	21	3	1	2	76	111	74
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	1933	593	81	731	22	3	1	2	80	117	78
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	493	2770	1107	156	2812	922	411	459	409	302	281	174
Arrive On Green	0.03	0.54	0.54	0.07	1.00	1.00	0.16	0.26	0.26	0.03	0.13	0.13
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	1781	1777	1585	1781	2104	1308
Grp Volume(v), veh/h	48	1933	593	81	731	22	3	1	2	80	97	98
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1781	1777	1585	1781	1777	1635
Q Serve(g_s), s	1.4	33.5	4.9	2.4	0.0	0.0	0.0	0.1	0.1	0.0	6.0	6.6
Cycle Q Clear(g_c), s	1.4	33.5	4.9	2.4	0.0	0.0	0.0	0.1	0.1	0.0	6.0	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	493	2770	1107	156	2812	922	411	459	409	302	237	218
V/C Ratio(X)	0.10	0.70	0.54	0.52	0.26	0.02	0.01	0.00	0.00	0.26	0.41	0.45
Avail Cap(c_a), veh/h	505	2770	1107	212	2812	922	445	459	409	336	237	218
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	20.2	3.1	21.3	0.0	0.0	36.8	33.0	33.1	44.5	47.7	47.9
Incr Delay (d2), s/veh	0.1	1.5	1.9	2.6	0.2	0.0	0.0	0.0	0.0	0.5	5.2	6.5
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(95%),veh/ln	1.0	19.2	5.6	2.3	0.1	0.0	0.1	0.0	0.1	3.9	5.4	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	21.7	5.0	23.8	0.2	0.0	36.8	33.0	33.1	45.0	52.9	54.4
LnGrp LOS	B	C	A	C	A	A	D	C	C	D	D	D
Approach Vol, veh/h		2574			834			6			275	
Approach Delay, s/veh		17.7			2.5			34.9			51.1	
Approach LOS		B			A			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	35.0	8.2	69.1	22.7	20.0	7.2	70.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	31.0	8.0	59.0	21.0	16.0	4.0	63.0
Max Q Clear Time (g_c+I1), s	2.0	2.1	4.4	35.5	2.0	8.6	3.4	2.0
Green Ext Time (p_c), s	0.0	0.0	0.0	18.4	0.0	0.6	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	42	1681	899	49	60	49
Future Volume (vph)	42	1681	899	49	60	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5046		1770	1583
Flt Permitted	0.24	1.00	1.00		0.95	1.00
Satd. Flow (perm)	448	5085	5046		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	1769	946	52	63	52
RTOR Reduction (vph)	0	0	7	0	0	46
Lane Group Flow (vph)	44	1769	991	0	63	6
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	7	4	8			
Permitted Phases	4				6	6
Actuated Green, G (s)	45.5	45.5	39.0		6.5	6.5
Effective Green, g (s)	45.5	45.5	39.0		6.5	6.5
Actuated g/C Ratio	0.76	0.76	0.65		0.11	0.11
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	394	3856	3279		191	171
v/s Ratio Prot	0.00	c0.35	0.20			
v/s Ratio Perm	0.08				c0.04	0.00
v/c Ratio	0.11	0.46	0.30		0.33	0.03
Uniform Delay, d1	2.1	2.7	4.6		24.7	23.9
Progression Factor	0.60	0.50	0.39		1.00	1.00
Incremental Delay, d2	0.1	0.3	0.2		1.0	0.1
Delay (s)	1.3	1.6	2.0		25.8	24.0
Level of Service	A	A	A		C	C
Approach Delay (s)		1.6	2.0		25.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	1789	923	0	0	13
Future Vol, veh/h	6	1789	923	0	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	1903	982	0	0	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	982	0	-	0	1755	491
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	773	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	399	-	-	-	127	448
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	378	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	399	-	-	-	125	448
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	244	-
Stage 2	-	-	-	-	378	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	399	-	-	-	448
HCM Lane V/C Ratio	0.016	-	-	-	0.031
HCM Control Delay (s)	14.2	-	-	-	13.3
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	1758	908	5	1	16
Future Vol, veh/h	4	1758	908	5	1	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	6
Mvmt Flow	4	1911	987	5	1	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	992	0	-	0	1762	496
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	772	-
Critical Hdwy	5.34	-	-	-	5.82	7.22
Critical Hdwy Stg 1	-	-	-	-	6.72	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	3.12	-	-	-	3.86	3.96
Pot Cap-1 Maneuver	395	-	-	-	120	436
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	369	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	395	-	-	-	119	436
Mov Cap-2 Maneuver	-	-	-	-	119	-
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	369	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	395	-	-	-	377
HCM Lane V/C Ratio	0.011	-	-	-	0.049
HCM Control Delay (s)	14.2	-	-	-	15
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1311	460	243	851	4	56	1	32	8	81	19
Future Volume (veh/h)	10	1311	460	243	851	4	56	1	32	8	81	19
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1490	523	276	967	5	64	1	36	9	92	22
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	2493	861	304	4107	21	229	3	372	41	212	48
Arrive On Green	0.67	0.67	0.67	0.17	1.00	1.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	578	3748	1294	1781	5242	27	1129	21	1585	57	1414	320
Grp Volume(v), veh/h	11	1351	662	276	628	344	65	0	36	123	0	0
Grp Sat Flow(s),veh/h/ln	578	1702	1637	1781	1702	1865	1150	0	1585	1792	0	0
Q Serve(g_s), s	0.8	26.4	27.2	7.4	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	26.4	27.2	7.4	0.0	0.0	7.4	0.0	2.1	7.4	0.0	0.0
Prop In Lane	1.00		0.79	1.00		0.01	0.98		1.00	0.07		0.18
Lane Grp Cap(c), veh/h	445	2265	1090	304	2667	1461	232	0	372	301	0	0
V/C Ratio(X)	0.02	0.60	0.61	0.91	0.24	0.24	0.28	0.00	0.10	0.41	0.00	0.00
Avail Cap(c_a), veh/h	445	2265	1090	539	2667	1461	232	0	372	301	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	11.1	11.3	22.2	0.0	0.0	46.5	0.0	36.0	46.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.2	2.5	8.4	0.2	0.3	3.0	0.0	0.5	4.1	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(95%),veh/ln	0.2	14.7	15.1	9.1	0.1	0.2	3.5	0.0	1.6	6.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	12.3	13.8	30.7	0.2	0.3	49.5	0.0	36.5	50.6	0.0	0.0
LnGrp LOS	A	B	B	C	A	A	D	A	D	D	A	A
Approach Vol, veh/h		2024			1248			101			123	
Approach Delay, s/veh		12.8			6.9			44.8			50.6	
Approach LOS		B			A			D			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		22.0	14.2	83.8		22.0		98.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0	26.0	64.0		18.0		94.0				
Max Q Clear Time (g_c+I1), s		9.4	9.4	29.2		9.4		2.0				
Green Ext Time (p_c), s		0.2	0.7	21.7		0.3		8.2				

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	741	438	86	785	53	67	41	29	94	254	259
Future Volume (veh/h)	174	741	438	86	785	53	67	41	29	94	254	259
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1811	1811	1811	1870	1870	1870
Adj Flow Rate, veh/h	198	842	498	98	892	60	76	47	0	107	289	294
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	2	2	2
Cap, veh/h	390	1078	502	250	1303	87	95	483		137	1078	652
Arrive On Green	0.04	0.10	0.10	0.07	0.27	0.27	0.06	0.27	0.00	0.08	0.29	0.29
Sat Flow, veh/h	1781	3404	1585	1781	4888	328	1725	1811	1535	1781	3741	1585
Grp Volume(v), veh/h	198	842	498	98	621	331	76	47	0	107	289	294
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1811	1725	1811	1535	1781	1870	1585
Q Serve(g_s), s	0.7	14.5	18.8	0.0	9.8	9.9	2.6	1.2	0.0	3.5	3.6	1.7
Cycle Q Clear(g_c), s	0.7	14.5	18.8	0.0	9.8	9.9	2.6	1.2	0.0	3.5	3.6	1.7
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	1078	502	250	908	483	95	483		137	1078	652
V/C Ratio(X)	0.51	0.78	0.99	0.39	0.68	0.69	0.80	0.10		0.78	0.27	0.45
Avail Cap(c_a), veh/h	390	1078	502	250	908	483	144	483		148	1078	652
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	24.8	26.8	25.8	19.7	19.7	28.0	16.6	0.0	27.2	16.5	4.6
Incr Delay (d2), s/veh	0.7	4.0	31.5	1.0	4.2	7.7	16.4	0.4	0.0	21.7	0.6	2.2
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(95%),veh/ln	4.7	10.6	16.9	2.3	7.3	8.4	2.6	0.9	0.0	4.0	2.7	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	28.8	58.3	26.8	23.9	27.5	44.4	17.0	0.0	48.9	17.1	6.9
LnGrp LOS	C	C	E	C	C	C	D	B		D	B	A
Approach Vol, veh/h		1538			1050			123	A		690	
Approach Delay, s/veh		37.9			25.3			33.9			17.7	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	20.0	8.4	23.0	7.3	21.3	11.4	20.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	16.0	4.0	19.0	5.0	16.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.5	3.2	2.0	20.8	4.6	5.6	2.7	11.9
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	2.2	0.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	1124	3	0	1958	109	425	105	80	57	0	110
Future Volume (veh/h)	96	1124	3	0	1958	109	425	105	80	57	0	110
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	1159	3	0	2019	112	438	108	82	59	0	113
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	2875	1215	225	2383	785	487	616	431	219	237	211
Arrive On Green	0.06	0.56	0.56	0.00	0.93	0.93	0.20	0.31	0.31	0.03	0.00	0.13
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	1781	1997	1399	1781	1777	1585
Grp Volume(v), veh/h	99	1159	3	0	2019	112	438	95	95	59	0	113
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1781	1777	1619	1781	1777	1585
Q Serve(g_s), s	0.0	15.4	0.0	0.0	15.1	0.0	20.1	4.7	5.2	0.0	0.0	8.0
Cycle Q Clear(g_c), s	0.0	15.4	0.0	0.0	15.1	0.0	20.1	4.7	5.2	0.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	234	2875	1215	225	2383	785	487	548	499	219	237	211
V/C Ratio(X)	0.42	0.40	0.00	0.00	0.85	0.14	0.90	0.17	0.19	0.27	0.00	0.53
Avail Cap(c_a), veh/h	234	2875	1215	283	2383	785	510	548	499	242	237	211
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.79	0.79	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	14.8	1.7	0.0	2.6	1.9	42.8	30.3	30.5	49.0	0.0	48.5
Incr Delay (d2), s/veh	1.2	0.4	0.0	0.0	3.2	0.3	18.3	0.7	0.8	0.7	0.0	9.4
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(95%),veh/ln	5.2	10.0	0.0	0.0	3.6	0.5	21.2	3.8	3.9	3.0	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	15.2	1.7	0.0	5.8	2.2	61.1	31.0	31.3	49.7	0.0	57.9
LnGrp LOS	D	B	A	A	A	A	E	C	C	D	A	E
Approach Vol, veh/h		1261			2131			628			172	
Approach Delay, s/veh		17.3			5.6			52.0			55.1	
Approach LOS		B			A			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	41.0	0.0	71.6	28.4	20.0	11.6	60.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	37.0	4.0	58.0	26.0	16.0	6.0	56.0
Max Q Clear Time (g_c+I1), s	2.0	7.2	0.0	17.4	22.1	10.0	2.0	17.1
Green Ext Time (p_c), s	0.0	1.1	0.0	10.9	0.6	0.2	0.1	24.4

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	1169	2054	65	52	54
Future Volume (vph)	43	1169	2054	65	52	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5062		1770	1583
Flt Permitted	0.09	1.00	1.00		0.95	1.00
Satd. Flow (perm)	172	5085	5062		1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	1193	2096	66	53	55
RTOR Reduction (vph)	0	0	3	0	0	49
Lane Group Flow (vph)	44	1193	2159	0	53	6
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	7	4	8			
Permitted Phases	4				6	6
Actuated Green, G (s)	45.8	45.8	39.3		6.2	6.2
Effective Green, g (s)	45.8	45.8	39.3		6.2	6.2
Actuated g/C Ratio	0.76	0.76	0.65		0.10	0.10
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	197	3881	3315		182	163
v/s Ratio Prot	0.01	c0.23	c0.43			
v/s Ratio Perm	0.16				c0.03	0.00
v/c Ratio	0.22	0.31	0.65		0.29	0.03
Uniform Delay, d1	4.3	2.2	6.2		24.9	24.2
Progression Factor	2.29	1.12	1.26		1.00	1.00
Incremental Delay, d2	0.5	0.2	0.6		0.9	0.1
Delay (s)	10.5	2.7	8.5		25.8	24.3
Level of Service	B	A	A		C	C
Approach Delay (s)		2.9	8.5		25.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	1250	2107	4	2	15
Future Vol, veh/h	14	1250	2107	4	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	1302	2195	4	2	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2199	0	-	0	2748	1100
Stage 1	-	-	-	-	2197	-
Stage 2	-	-	-	-	551	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	99	-	-	-	36	178
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	494	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	99	-	-	-	31	178
Mov Cap-2 Maneuver	-	-	-	-	31	-
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	494	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	42.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	99	-	-	-	114
HCM Lane V/C Ratio	0.147	-	-	-	0.155
HCM Control Delay (s)	47.5	-	-	-	42.3
HCM Lane LOS	E	-	-	-	E
HCM 95th %tile Q(veh)	0.5	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	1212	2117	2	0	9
Future Vol, veh/h	16	1212	2117	2	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	1263	2205	2	0	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2207	0	-	0	2745	1104
Stage 1	-	-	-	-	2206	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	98	-	-	-	36	177
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	98	-	-	-	30	177
Mov Cap-2 Maneuver	-	-	-	-	30	-
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	501	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	26.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	98	-	-	-	177
HCM Lane V/C Ratio	0.17	-	-	-	0.053
HCM Control Delay (s)	49.1	-	-	-	26.5
HCM Lane LOS	E	-	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1143	41	22	1561	23	517	46	196	13	9	38
Future Volume (veh/h)	29	1143	41	22	1561	23	517	46	196	13	9	38
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	1166	42	22	1593	23	528	47	200	13	9	39
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1686	61	173	2074	30	269	19	898	36	37	66
Arrive On Green	0.33	0.33	0.33	0.07	0.80	0.80	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	313	5059	182	1781	5186	75	397	35	1585	0	70	124
Grp Volume(v), veh/h	30	784	424	22	1046	570	575	0	200	61	0	0
Grp Sat Flow(s),veh/h/ln	313	1702	1838	1781	1702	1857	432	0	1585	193	0	0
Q Serve(g_s), s	10.5	24.0	24.0	0.0	19.1	19.1	0.0	0.0	3.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	29.6	24.0	24.0	0.0	19.1	19.1	64.0	0.0	3.5	64.0	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.04	0.92		1.00	0.21		0.64
Lane Grp Cap(c), veh/h	114	1135	613	173	1362	743	288	0	898	140	0	0
V/C Ratio(X)	0.26	0.69	0.69	0.13	0.77	0.77	2.00	0.00	0.22	0.44	0.00	0.00
Avail Cap(c_a), veh/h	114	1135	613	173	1362	743	288	0	898	140	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.3	34.7	34.7	43.8	9.1	9.1	34.4	0.0	12.9	26.9	0.0	0.0
Incr Delay (d2), s/veh	5.5	3.5	6.3	0.2	2.4	4.2	460.8	0.0	0.6	9.6	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(95%),veh/ln	1.8	15.7	17.3	1.0	6.1	7.1	78.3	0.0	5.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	38.1	41.0	44.0	11.5	13.4	495.2	0.0	13.5	36.6	0.0	0.0
LnGrp LOS	D	D	D	D	B	B	F	A	B	D	A	A
Approach Vol, veh/h		1238			1638			775			61	
Approach Delay, s/veh		39.4			12.6			370.9			36.6	
Approach LOS		D			B			F			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		68.0	8.0	44.0		68.0		52.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		64.0	4.0	40.0		64.0		48.0				
Max Q Clear Time (g_c+I1), s		66.0	2.0	31.6		66.0		21.1				
Green Ext Time (p_c), s		0.0	0.0	5.1		0.0		13.8				

Intersection Summary	
HCM 6th Ctrl Delay	96.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	1080	48	9	1159	163	215	152	63	67	37	302
Future Volume (veh/h)	261	1080	48	9	1159	163	215	152	63	67	37	302
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	281	1161	52	10	1246	175	231	163	0	72	40	325
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, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	488	2790	125	214	1546	217	261	499		119	286	595
Arrive On Green	0.45	1.00	1.00	0.01	0.34	0.34	0.15	0.27	0.00	0.03	0.15	0.15
Sat Flow, veh/h	1781	5010	224	1781	4525	635	1781	1870	1585	3534	1856	1572
Grp Volume(v), veh/h	281	789	424	10	937	484	231	163	0	72	40	325
Grp Sat Flow(s),veh/h/ln	1781	1702	1830	1781	1702	1756	1781	1870	1585	1767	1856	1572
Q Serve(g_s), s	6.5	0.0	0.0	0.5	30.0	30.0	15.3	8.4	0.0	2.4	2.2	5.6
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.5	30.0	30.0	15.3	8.4	0.0	2.4	2.2	5.6
Prop In Lane	1.00		0.12	1.00		0.36	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	488	1896	1019	214	1163	600	261	499		119	286	595
V/C Ratio(X)	0.58	0.42	0.42	0.05	0.81	0.81	0.89	0.33		0.60	0.14	0.55
Avail Cap(c_a), veh/h	488	1896	1019	257	1163	600	341	499		206	286	595
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	27.5	35.9	35.9	50.2	35.3	0.0	57.2	43.9	13.1
Incr Delay (d2), s/veh	1.2	0.5	0.9	0.1	6.0	11.1	19.2	1.7	0.0	4.9	1.0	3.6
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(95%),veh/ln	8.0	0.2	0.5	0.4	19.3	20.8	12.9	7.4	0.0	2.1	2.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	0.5	0.9	27.6	41.9	47.0	69.4	37.1	0.0	62.1	44.9	16.7
LnGrp LOS	C	A	A	C	D	D	E	D		E	D	B
Approach Vol, veh/h		1494			1431			394	A		437	
Approach Delay, s/veh		5.6			43.5			56.0			26.7	
Approach LOS		A			D			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	36.0	5.1	70.8	21.6	22.5	31.0	45.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	32.0	4.0	61.0	23.0	16.0	24.0	41.0
Max Q Clear Time (g_c+I1), s	14.4	10.4	2.5	2.0	17.3	7.6	8.5	32.0
Green Ext Time (p_c), s	0.0	0.8	0.0	11.4	0.3	0.9	0.7	5.9

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX C:
FORECAST TURNING MOVEMENTS AND TRIP DISTRIBUTION

EUL Trip Distribution - Residential Trips
Employment by Subarea

Subarea	Employment* 2016	2040	2030	Distance	Employment / distance 2030	% Emp / Dist	GW Gibson to/from West			GE Gibson to/from East			CN Carlisle to/from No	
							% Utililizing	% Population/ Dist. Utilizing	Population	% Utililizing	% Population/ Dist. Utilizing	Population	% Utililizing	% Population/ Dist. Utilizing
1	8373	15712	12,654	22.34	566	0.64%	100%	0.64%	12,654					
2	16177	23840	20,647	14.65	1,409	1.58%	100%	1.58%	20,647					
3	1579	1575	1,577	12.65	125	0.14%	100%	0.14%	1,577					
4	3725	5356	4,676	17.19	272	0.31%	100%	0.31%	4,676					
5	14923	16384	15,775	11.27	1,400	1.57%	100%	1.57%	15,775					
6	2051	2558	2,347	14.94	157	0.18%	100%	0.18%	2,347					
7	9234	12241	10,988	8.74	1,257	1.41%	100%	1.41%	10,988					
8	9101	11613	10,566	6.92	1,526	1.71%	100%	1.71%	10,566					
9	671	1105	924	25.38	36	0.04%	100%	0.04%	924					
10	3409	4902	4,280	9.52	450	0.50%	100%	0.50%	4,280					
11	5699	6261	6,027	6.46	932	1.05%	100%	1.05%	6,027					
12	6287	7387	6,929	8.34	831	0.93%	100%	0.93%	6,929					
13	38387	39436	38,999	7.90	4,935	5.53%	100%	5.53%	38,999					
14	37516	39753	38,821	9.38	4,138	4.64%	100%	4.64%	38,821					
15	17358	18307	17,912	5.67	3,159	3.54%	100%	3.54%	17,912					
16	54135	57436	56,061	4.72	11,866	13.30%	20%	2.66%	11,212	30%	3.99%	16,818	20%	2.66%
17	39647	41582	40,776	4.25	9,604	10.77%	100%	10.77%	40,776					
18	47403	52860	50,586	1.62	31,201	34.98%	76%	26.65%	38,540				15%	5.26%
19	26057	30173	28,458	4.05	7,022	7.87%				60%	4.72%	17,075		
20	5978	7006	6,578	5.17	1,271	1.43%	100%	1.43%	6,578					
21	1755	3975	3,050	5.37	568	0.64%	100%	0.64%	3,050					
22	28349	26449	27,241	5.10	5,343	5.99%	25%	1.50%	6,810	75%	4.49%	20,431		
23	2923	2747	2,820	14.97	188	0.21%	90%	0.19%	2,538	10%	0.02%	282		
24	1271	1391	1,341	14.57	92	0.10%	100%	0.10%	1,341					
25	112	106	109	14.16	8	0.01%	100%	0.01%	109					
26	18011	17772	17,872	28.28	632	0.71%	100%	0.71%	17,872					
27	5846	6027	5,952	49.43	120	0.13%	100%	0.13%	5,952					
28	4322	4296	4,307	51.17	84	0.09%	90%	0.08%	3,876	10%	0.01%	431		
29	1784	1771	1,776	34.38	52	0.06%	90%	0.05%	1,599	10%	0.01%	178		
Total	412,083	460,021			89,194	100.00%		68.68%			13.24%			7.92%

* - Subarea Population from MRCOG 2030 Socioeconomic Forecasts
from MRCOG website

EUL Trip Distribution - Residential Trips
Employment by Subarea

Subarea	Employment* 2016	2040	2030	Distance	Employment / distance 2030	% Emp / Dist	rth Population
1	8373	15712	12,654	22.34	566	0.64%	
2	16177	23840	20,647	14.65	1,409	1.58%	
3	1579	1575	1,577	12.65	125	0.14%	
4	3725	5356	4,676	17.19	272	0.31%	
5	14923	16384	15,775	11.27	1,400	1.57%	
6	2051	2558	2,347	14.94	157	0.18%	
7	9234	12241	10,988	8.74	1,257	1.41%	
8	9101	11613	10,566	6.92	1,526	1.71%	
9	671	1105	924	25.38	36	0.04%	
10	3409	4902	4,280	9.52	450	0.50%	
11	5699	6261	6,027	6.46	932	1.05%	
12	6287	7387	6,929	8.34	831	0.93%	
13	38387	39436	38,999	7.90	4,935	5.53%	
14	37516	39753	38,821	9.38	4,138	4.64%	
15	17358	18307	17,912	5.67	3,159	3.54%	
16	54135	57436	56,061	4.72	11,866	13.30%	11,212
17	39647	41582	40,776	4.25	9,604	10.77%	
18	47403	52860	50,586	1.62	31,201	34.98%	7,610
19	26057	30173	28,458	4.05	7,022	7.87%	
20	5978	7006	6,578	5.17	1,271	1.43%	
21	1755	3975	3,050	5.37	568	0.64%	
22	28349	26449	27,241	5.10	5,343	5.99%	
23	2923	2747	2,820	14.97	188	0.21%	
24	1271	1391	1,341	14.57	92	0.10%	
25	112	106	109	14.16	8	0.01%	
26	18011	17772	17,872	28.28	632	0.71%	
27	5846	6027	5,952	49.43	120	0.13%	
28	4322	4296	4,307	51.17	84	0.09%	
29	1784	1771	1,776	34.38	52	0.06%	
Total	412,083	460,021			89,194	100.00%	

* - Subarea Population from MRCOG 2030 Socioeconomic Forecasts
from MRCOG website

EUL Trip Distribution - Residential Trips
Employment by Subarea

Subarea	Employment* 2016	2040	2030	Distance	Employment / distance 2030	% Emp / Dist	SMN San Mateo to/from North % Utililizing	% Population/ Dist. Utilizing	Population
1	8373	15712	12,654	22.34	566	0.64%			
2	16177	23840	20,647	14.65	1,409	1.58%			
3	1579	1575	1,577	12.65	125	0.14%			
4	3725	5356	4,676	17.19	272	0.31%			
5	14923	16384	15,775	11.27	1,400	1.57%			
6	2051	2558	2,347	14.94	157	0.18%			
7	9234	12241	10,988	8.74	1,257	1.41%			
8	9101	11613	10,566	6.92	1,526	1.71%			
9	671	1105	924	25.38	36	0.04%			
10	3409	4902	4,280	9.52	450	0.50%			
11	5699	6261	6,027	6.46	932	1.05%			
12	6287	7387	6,929	8.34	831	0.93%			
13	38387	39436	38,999	7.90	4,935	5.53%			
14	37516	39753	38,821	9.38	4,138	4.64%			
15	17358	18307	17,912	5.67	3,159	3.54%			
16	54135	57436	56,061	4.72	11,866	13.30%	30%	3.99%	16,818
17	39647	41582	40,776	4.25	9,604	10.77%			
18	47403	52860	50,586	1.62	31,201	34.98%	7%	2.55%	3,680
19	26057	30173	28,458	4.05	7,022	7.87%	40%	3.15%	11,383
20	5978	7006	6,578	5.17	1,271	1.43%			
21	1755	3975	3,050	5.37	568	0.64%			
22	28349	26449	27,241	5.10	5,343	5.99%			
23	2923	2747	2,820	14.97	188	0.21%			
24	1271	1391	1,341	14.57	92	0.10%			
25	112	106	109	14.16	8	0.01%			
26	18011	17772	17,872	28.28	632	0.71%			
27	5846	6027	5,952	49.43	120	0.13%			
28	4322	4296	4,307	51.17	84	0.09%			
29	1784	1771	1,776	34.38	52	0.06%			
Total	412,083	460,021			89,194	100.00%		9.69%	

* - Subarea Population from MRCOG 2030 Socioeconomic Forecasts
from MRCOG website

EUL Trip Distribution - Retail Trips - 2 mile radius
DASZ's within a 2-mile radius of site

DASZ	% of DASZ in Study Area	2016 Population DASZ	2040 Population In Study Area	2030	2030 Pop%	GW Gibson to/from West % Utililizing	GW % Population/ Dist. Utilizing	GW Population	GE Gibson to/from East % Utililizing	GE % Population/ Dist. Utilizing	GE Population	CN Carlisle to/from North % Utililizing	CN % Population/ Dist. Utilizing	CN Population
8011	5.03	1701	2396	2,106	3.18%	30%	0.95%	32				70%	2.22%	74
8171	64.19	999	1112	1,065	1.61%	15%	0.24%	103				85%	1.37%	581
8172	93.43	1591	1793	1,709	2.58%							100%	2.58%	1,597
8161	94.55	1862	2531	2,252	3.40%							3%	0.10%	64
8151	76.13	1742	2069	1,933	2.91%				5%	0.15%	74			
8221	38.86	10	16	14	0.02%				25%	0.01%	1			
8041	76.68	2913	3783	3,421	5.16%	75%	3.87%	1,967				25%	1.29%	656
8511	100.00	1092	1213	1,163	1.75%	15%	0.26%	174				85%	1.49%	988
8231	2.51	1371	1691	1,558	2.35%				80%	1.88%	31			
8512	100.00	372	579	493	0.74%							100%	0.74%	493
8521	100.00	968	1309	1,167	1.76%							50%	0.88%	583
8532	100.00	817	1296	1,096	1.65%				15%	0.25%	164			
8533	100.00	695	806	760	1.15%				7%	0.08%	53			
8243	21.98	949	2108	1,625	2.45%				90%	2.21%	321			
8062	100.00	3074	3174	3,132	4.72%	100%	4.72%	3,132						
8502	100.00	1215	1324	1,279	1.93%	40%	0.77%	511				60%	1.16%	767
8531	100.00	2161	2211	2,190	3.30%				20%	0.66%	438			
8242	59.86	3678	3981	3,855	5.81%				100%	5.81%	2,307			
8534	100.00	2055	2561	2,350	3.54%				85%	3.01%	1,998			
8501	100.00	1978	2179	2,095	3.16%	40%	1.26%	838				60%	1.90%	1,257
8061	100.00	1252	2527	1,996	3.01%	100%	3.01%	1,996						
8081	100.00	63	63	63	0.10%	100%	0.10%	63						
8413	0.05	0	0	0	0.00%	100%	0.00%	0						
8601	0.65	0	0	0	0.00%	100%	0.00%	0						
8052	50.55	436	514	482	0.73%	100%	0.73%	243						
8561	100.00	2625	3001	2,844	4.29%							4%	0.17%	114
8553	100.00	2497	2707	2,620	3.95%							15%	0.59%	393
8241	91.79	1398	1471	1,441	2.17%				100%	2.17%	1,322			
8442	40.37	705	754	734	1.11%				100%	1.11%	296			
8541	100.00	3349	4263	3,882	5.85%				25%	1.46%	971			
8542	100.00	1637	1835	1,753	2.64%				60%	1.59%	1,052			
8411	97.40	0	0	0	0.00%									
8422	100.00	534	664	610	0.92%				100%	0.92%	610			
8421	100.00	141	141	141	0.21%				100%	0.21%	141			
8423	100.00	363	463	421	0.64%				100%	0.64%	421			
8441	85.20	0	0	0	0.00%				100%	0.00%	0			
8072	83.96	1225	2935	2,223	3.35%	100%	3.35%	1,866						
8082	66.77	989	8082	5,127	7.73%	100%	7.73%	3,423						
8412	66.40	0	8412	4,907	7.40%	100%	7.40%	3,258						
8432	1.80	1,796	1,818	1,809	2.73%				100%	2.73%	33			
		50,253	77,782	66,312	100.00%		34.40%			24.87%			14.49%	

* - DASZ Population from MRCOG Website data

EUL Trip Distribution - Retail Trips - 2 mile radius
DASZ's within a 2-mile radius of site

DASZ	% of DASZ in Study Area	2016 Population DASZ	2040 Population In Study Area	2030	2030 Pop%	CS Carlisle to/from South % Utililizing	CS % Population/ Dist. Utilizing	CS Population	SMN San Mateo to/from North % Utililizing	SMN % Population/ Dist. Utilizing	SMN Population	TN Truman to/from North % Utililizing	TN % Population/ Dist. Utilizing	TN Population
8011	5.03	1701	2396	2,106	3.18%									
8171	64.19	999	1112	1,065	1.61%									
8172	93.43	1591	1793	1,709	2.58%									
8161	94.55	1862	2531	2,252	3.40%				97%	3.29%	2,066			
8151	76.13	1742	2069	1,933	2.91%				95%	2.77%	1,398			
8221	38.86	10	16	14	0.02%				75%	0.02%	4			
8041	76.68	2913	3783	3,421	5.16%									
8511	100.00	1092	1213	1,163	1.75%									
8231	2.51	1371	1691	1,558	2.35%				20%	0.47%	8			
8512	100.00	372	579	493	0.74%									
8521	100.00	968	1309	1,167	1.76%				50%	0.88%	583			
8532	100.00	817	1296	1,096	1.65%				85%	1.41%	932			
8533	100.00	695	806	760	1.15%				93%	1.07%	707			
8243	21.98	949	2108	1,625	2.45%				10%	0.25%	36			
8062	100.00	3074	3174	3,132	4.72%									
8502	100.00	1215	1324	1,279	1.93%									
8531	100.00	2161	2211	2,190	3.30%				80%	2.64%	1,752			
8242	59.86	3678	3981	3,855	5.81%									
8534	100.00	2055	2561	2,350	3.54%				15%	0.53%	353			
8501	100.00	1978	2179	2,095	3.16%									
8061	100.00	1252	2527	1,996	3.01%									
8081	100.00	63	63	63	0.10%									
8413	0.05	0	0	0	0.00%									
8601	0.65	0	0	0	0.00%									
8052	50.55	436	514	482	0.73%									
8561	100.00	2625	3001	2,844	4.29%				35%	1.50%	996	61%	2.62%	1,735
8553	100.00	2497	2707	2,620	3.95%							75%	2.96%	1,965
8241	91.79	1398	1471	1,441	2.17%									
8442	40.37	705	754	734	1.11%									
8541	100.00	3349	4263	3,882	5.85%				75%	4.39%	2,912			
8542	100.00	1637	1835	1,753	2.64%				40%	1.06%	701			
8411	97.40	0	0	0	0.00%	50%	0.00%	0						
8422	100.00	534	664	610	0.92%									
8421	100.00	141	141	141	0.21%									
8423	100.00	363	463	421	0.64%									
8441	85.20	0	0	0	0.00%									
8072	83.96	1225	2935	2,223	3.35%									
8082	66.77	989	8082	5,127	7.73%									
8412	66.40	0	8412	4,907	7.40%									
8432	1.80	1,796	1,818	1,809	2.73%									
		50,253	77,782	66,312	100.00%		0.00%			20.27%			5.58%	

* - DASZ Population from MRCOG Website data

EUL Trip Distribution - Retail Trips - 2 mile radius
DASZ's within a 2-mile radius of site

DASZ	% of DASZ in Study Area	2016 Population DASZ	2040 Population In Study Area	2030	2030 Pop%	TS Truman to/from South % Utililizing	TS % Population/ Dist. Utilizing	TS Population	WN Washington to/from North % Utililizing	WN % Population/ Dist. Utilizing	WN Population	MN Maxwell to/from the North % Utililizing	MN % Population/ Dist. Utilizing	MN Population
8011	5.03	1701	2396	2,106	3.18%									
8171	64.19	999	1112	1,065	1.61%									
8172	93.43	1591	1793	1,709	2.58%									
8161	94.55	1862	2531	2,252	3.40%									
8151	76.13	1742	2069	1,933	2.91%									
8221	38.86	10	16	14	0.02%									
8041	76.68	2913	3783	3,421	5.16%									
8511	100.00	1092	1213	1,163	1.75%									
8231	2.51	1371	1691	1,558	2.35%									
8512	100.00	372	579	493	0.74%									
8521	100.00	968	1309	1,167	1.76%									
8532	100.00	817	1296	1,096	1.65%									
8533	100.00	695	806	760	1.15%									
8243	21.98	949	2108	1,625	2.45%									
8062	100.00	3074	3174	3,132	4.72%									
8502	100.00	1215	1324	1,279	1.93%									
8531	100.00	2161	2211	2,190	3.30%									
8242	59.86	3678	3981	3,855	5.81%									
8534	100.00	2055	2561	2,350	3.54%									
8501	100.00	1978	2179	2,095	3.16%									
8061	100.00	1252	2527	1,996	3.01%									
8081	100.00	63	63	63	0.10%									
8413	0.05	0	0	0	0.00%									
8601	0.65	0	0	0	0.00%									
8052	50.55	436	514	482	0.73%									
8561	100.00	2625	3001	2,844	4.29%									
8553	100.00	2497	2707	2,620	3.95%				5%	0.20%	131	5%	0.20%	131
8241	91.79	1398	1471	1,441	2.17%									
8442	40.37	705	754	734	1.11%									
8541	100.00	3349	4263	3,882	5.85%									
8542	100.00	1637	1835	1,753	2.64%									
8411	97.40	0	0	0	0.00%	50%	0.00%	0						
8422	100.00	534	664	610	0.92%									
8421	100.00	141	141	141	0.21%									
8423	100.00	363	463	421	0.64%									
8441	85.20	0	0	0	0.00%									
8072	83.96	1225	2935	2,223	3.35%									
8082	66.77	989	8082	5,127	7.73%									
8412	66.40	0	8412	4,907	7.40%									
8432	1.80	1,796	1,818	1,809	2.73%									
		50,253	77,782	66,312	100.00%		0.00%			0.20%			0.20%	

* - DASZ Population from MRCOG Website data

EUL Trip Distribution - Office Trips
Population by Subarea

Subarea	Population* 2016	2040	2030	Distance	Population / distance 2030	% Pop. / Dist	GW Gibson to/from West			GE Gibson to/from East			CN Carlisle to/from No	
							% Utililizing	% Population/ Dist. Utilizing	Population	% Utililizing	% Population/ Dist. Utilizing	Population	% Utililizing	% Population/ Dist. Utilizing
1	44753	62772	55,264	22.34	2,474	1.64%	100%	1.64%	55,264					
2	55060	62691	59,511	14.65	4,062	2.69%	100%	2.69%	59,511					
3	7709	8230	8,013	12.65	633	0.42%	100%	0.42%	8,013					
4	13817	15919	15,043	17.19	875	0.58%	100%	0.58%	15,043					
5	59541	67836	64,380	11.27	5,712	3.78%	100%	3.78%	64,380					
6	7380	15723	12,247	14.94	820	0.54%	100%	0.54%	12,247					
7	59485	71876	66,713	8.74	7,634	5.05%	100%	5.05%	66,713					
8	31699	35067	33,664	6.92	4,861	3.22%	100%	3.22%	33,664					
9	1534	1964	1,785	25.38	70	0.05%	100%	0.05%	1,785					
10	64323	70625	67,999	9.52	7,145	4.73%	100%	4.73%	67,999					
11	33210	34008	33,676	6.46	5,209	3.45%	100%	3.45%	33,676					
12	15936	16874	16,483	8.34	1,977	1.31%	100%	1.31%	16,483					
13	9888	12796	11,584	7.90	1,466	0.97%	100%	0.97%	11,584					
14	100318	111194	106,662	9.38	11,368	7.53%	100%	7.53%	106,662					
15	24829	27181	26,201	5.67	4,621	3.06%	100%	3.06%	26,201					
16	107114	121505	115,509	4.72	24,449	16.19%	20%	3.24%	23,102	30%	4.86%	34,653	20%	3.24%
17	21499	31843	27,533	4.25	6,485	4.29%	100%	4.29%	27,533					
18	44016	56809	51,479	1.62	31,751	21.02%	59%	12.37%	30,298				24%	5.06%
19	66483	78019	73,212	4.05	18,065	11.96%				60%	7.18%	43,927		
20	9636	10849	10,344	5.17	1,999	1.32%	100%	1.32%	10,344					
21	559	28221	16,695	5.37	3,112	2.06%	100%	2.06%	16,695					
22	3511	3614	3,571	5.10	700	0.46%	25%	0.12%	893	75%	0.35%	2,678		
23	19163	23052	21,432	14.97	1,431	0.95%	90%	0.85%	19,288	10%	0.09%	2,143		
24	2531	2832	2,707	14.57	186	0.12%	100%	0.12%	2,707					
25	863	1012	950	14.16	67	0.04%	100%	0.04%	950					
26	75621	96755	87,949	28.28	3,110	2.06%	100%	2.06%	87,949					
27	19926	20855	20,468	49.43	414	0.27%	100%	0.27%	20,468					
28	15584	18484	17,276	51.17	338	0.22%	90%	0.20%	15,548	10%	0.02%	1,728		
29	10397	12329	11,524	34.38	335	0.22%	90%	0.20%	10,372	10%	0.02%	1,152		
Total	926,385	1,120,935			151,036	100.00%		66.17%			12.52%			8.30%

* - Subarea Population from MRCOG 2030 Socioeconomic Forecasts
from MRCOG website

EUL Trip Distribution - Office Trips
Population by Subarea

Subarea	Population* 2016	2040	2030	Distance	Population / distance 2030	% Pop. / Dist	rth Population
1	44753	62772	55,264	22.34	2,474	1.64%	
2	55060	62691	59,511	14.65	4,062	2.69%	
3	7709	8230	8,013	12.65	633	0.42%	
4	13817	15919	15,043	17.19	875	0.58%	
5	59541	67836	64,380	11.27	5,712	3.78%	
6	7380	15723	12,247	14.94	820	0.54%	
7	59485	71876	66,713	8.74	7,634	5.05%	
8	31699	35067	33,664	6.92	4,861	3.22%	
9	1534	1964	1,785	25.38	70	0.05%	
10	64323	70625	67,999	9.52	7,145	4.73%	
11	33210	34008	33,676	6.46	5,209	3.45%	
12	15936	16874	16,483	8.34	1,977	1.31%	
13	9888	12796	11,584	7.90	1,466	0.97%	
14	100318	111194	106,662	9.38	11,368	7.53%	
15	24829	27181	26,201	5.67	4,621	3.06%	
16	107114	121505	115,509	4.72	24,449	16.19%	23,102
17	21499	31843	27,533	4.25	6,485	4.29%	
18	44016	56809	51,479	1.62	31,751	21.02%	12,386
19	66483	78019	73,212	4.05	18,065	11.96%	
20	9636	10849	10,344	5.17	1,999	1.32%	
21	559	28221	16,695	5.37	3,112	2.06%	
22	3511	3614	3,571	5.10	700	0.46%	
23	19163	23052	21,432	14.97	1,431	0.95%	
24	2531	2832	2,707	14.57	186	0.12%	
25	863	1012	950	14.16	67	0.04%	
26	75621	96755	87,949	28.28	3,110	2.06%	
27	19926	20855	20,468	49.43	414	0.27%	
28	15584	18484	17,276	51.17	338	0.22%	
29	10397	12329	11,524	34.38	335	0.22%	
Total	926,385	1,120,935			151,036	100.00%	

* - Subarea Population from MRCOG 2030 Socioeconomic Forecasts
from MRCOG website

EUL Trip Distribution - Office Trips
Population by Subarea

Subarea	Population* 2016	2040	2030	Distance	Population / distance 2030	% Pop. / Dist	SMN San Mateo to/from North % Utililizing	% Population/ Dist. Utilizing	Population
1	44753	62772	55,264	22.34	2,474	1.64%			
2	55060	62691	59,511	14.65	4,062	2.69%			
3	7709	8230	8,013	12.65	633	0.42%			
4	13817	15919	15,043	17.19	875	0.58%			
5	59541	67836	64,380	11.27	5,712	3.78%			
6	7380	15723	12,247	14.94	820	0.54%			
7	59485	71876	66,713	8.74	7,634	5.05%			
8	31699	35067	33,664	6.92	4,861	3.22%			
9	1534	1964	1,785	25.38	70	0.05%			
10	64323	70625	67,999	9.52	7,145	4.73%			
11	33210	34008	33,676	6.46	5,209	3.45%			
12	15936	16874	16,483	8.34	1,977	1.31%			
13	9888	12796	11,584	7.90	1,466	0.97%			
14	100318	111194	106,662	9.38	11,368	7.53%			
15	24829	27181	26,201	5.67	4,621	3.06%			
16	107114	121505	115,509	4.72	24,449	16.19%	30%	4.86%	34,653
17	21499	31843	27,533	4.25	6,485	4.29%			
18	44016	56809	51,479	1.62	31,751	21.02%	11%	2.38%	5,835
19	66483	78019	73,212	4.05	18,065	11.96%	40%	4.78%	29,285
20	9636	10849	10,344	5.17	1,999	1.32%			
21	559	28221	16,695	5.37	3,112	2.06%			
22	3511	3614	3,571	5.10	700	0.46%			
23	19163	23052	21,432	14.97	1,431	0.95%			
24	2531	2832	2,707	14.57	186	0.12%			
25	863	1012	950	14.16	67	0.04%			
26	75621	96755	87,949	28.28	3,110	2.06%			
27	19926	20855	20,468	49.43	414	0.27%			
28	15584	18484	17,276	51.17	338	0.22%			
29	10397	12329	11,524	34.38	335	0.22%			
Total	926,385	1,120,935			151,036	100.00%		12.02%	

* - Subarea Population from MRCOG 2030 Socioeconomic Forecasts
from MRCOG website

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Max-Q	**Organization:**	BHI
Project Location:	KAFB	**Performed By:**	MB
Scenario Description:	Option 1	**Date:**	7/26/2019
Analysis Year:	Existing	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	714,250	1000 sf GFA	698	601	97
Retail	826	111,700	1000 sf GFA	0	0	0
Restaurant	932/934	49,400	1000 sf GLA	1284	666	618
Cinema/Entertainment				0		
Residential	220	108	DU	52	12	40
Hotel	310	200	Rooms	95	57	38
All Other Land Uses[2]	130	219,500	1000 GFA	88	72	16
Total				2217	1408	809

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	61	0	0	0
Retail	0		0	0	0	0
Restaurant	84	0		0	1	2
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	8	0		0
Hotel	18	0	3	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	2,217	1,408	809
Internal Capture Percentage	16%	13%	22%
External Vehicle-Trips[3]	1,861	1,230	631
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	17%	63%
Retail	N/A	N/A
Restaurant	11%	14%
Cinema/Entertainment	N/A	N/A
Residential	8%	23%
Hotel	4%	55%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Max-Q
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	601	601	1.00	97	97
Retail	1.00	0	0	1.00	0	0
Restaurant	1.00	666	666	1.00	618	618
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	12	12	1.00	40	40
Hotel	1.00	57	57	1.00	38	38

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		27	61	0	1	0
Retail	0		0	0	0	0
Restaurant	192	87		0	25	19
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	8	0		0
Hotel	29	5	3	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	153	0	0	0
Retail	24		333	0	0	0
Restaurant	84	0		0	1	2
Cinema/Entertainment	0	0	0		0	0
Residential	18	0	133	0		0
Hotel	18	0	40	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	103	498	601	498	0	0
Retail	0	0	0	0	0	0
Restaurant	72	594	666	594	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	11	12	11	0	0
Hotel	2	55	57	55	0	0
All Other Land Uses[3]	0	72	72	72	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	61	36	97	36	0	0
Retail	0	0	0	0	0	0
Restaurant	87	531	618	531	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	9	31	40	31	0	0
Hotel	21	17	38	17	0	0
All Other Land Uses[3]	0	16	16	16	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Max Q	**Organization:**	BHI
Project Location:	KAFB	**Performed By:**	MB
Scenario Description:	Option 1	**Date:**	7/26/2019
Analysis Year:	Existing	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	714,250	1000 sf GFA	738	119	619
Retail	826	111,700	1000 sf GFA	290	128	162
Restaurant	932/934	49,400	1000 sf GLA	1083	587	496
Cinema/Entertainment				0		
Residential	220	108	DU	64	41	23
Hotel	310	200	Rooms	124	64	60
All Other Land Uses[2]	130	219,500	1000 GFA	88	19	69
Total				2387	958	1429

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office		2%			2%	
Retail		2%			2%	
Restaurant		2%			2%	
Cinema/Entertainment						
Residential		2%			2%	
Hotel						
All Other Land Uses[2]		2%			2%	

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		800	800		800	
Retail					800	
Restaurant					800	
Cinema/Entertainment						
Residential		800	800			
Hotel					800	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	10	0	2	0
Retail	3		47	0	19	8
Restaurant	15	64		0	7	35
Cinema/Entertainment	0	0	0		0	0
Residential	1	8	4	0		1
Hotel	0	3	29	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	2,387	958	1,429
Internal Capture Percentage	22%	28%	18%
External Vehicle-Trips[3]	1,823	681	1,142
External Transit-Trips[4]	36	13	23
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	16%	3%
Retail	65%	48%
Restaurant	15%	24%
Cinema/Entertainment	N/A	N/A
Residential	68%	61%
Hotel	69%	53%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Max Q
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	119	119	1.00	619	619
Retail	1.00	128	128	1.00	162	162
Restaurant	1.00	587	587	1.00	496	496
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	41	41	1.00	23	23
Hotel	1.00	64	64	1.00	60	60

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		102	20	0	12	0
Retail	3		47	6	42	8
Restaurant	15	203		40	88	35
Cinema/Entertainment	0	0	0		0	0
Residential	1	8	4	0		1
Hotel	0	10	41	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	10	0	2	0
Retail	37		170	0	19	11
Restaurant	36	64		0	7	45
Cinema/Entertainment	7	5	18		2	1
Residential	68	10	67	0		8
Hotel	0	3	29	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	19	100	119	98	2	0
Retail	83	45	128	44	1	0
Restaurant	90	497	587	487	10	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	28	13	41	13	0	0
Hotel	44	20	64	20	0	0
All Other Land Uses[3]	0	19	19	19	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	20	599	619	587	12	0
Retail	77	85	162	83	2	0
Restaurant	121	375	496	367	8	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	14	9	23	9	0	0
Hotel	32	28	60	28	0	0
All Other Land Uses[3]	0	69	69	68	1	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

KAFB EUL/Max Q @ Kirtland Trip Generation - SDL 1 - 5 - May 2, 2019 Overall Conceptual Site Plan 17-P005 - Option 1

TRIP GENERATION

Land Use	ITE Land Use	ITE Code	Size	Parameter	24-hour	AM Enter	AM Exit	PM Enter	PM Exit	AM	PM
Hotel	Hotel	310	200	Rooms	1,832	57	38	64	60	95	124
Retail	Specialty Retail	826	111,700	GLA	4,817	0	0	128	162	0	290
Retail	HTO Restaurant	932	23,200	GFA	2,603	128	103	141	86	231	227
Retail	Fast Food w/Drive-Thru	934	26,200	GLA	12,339	538	515	446	410	1,053	856
Residential	MXD - Apartments/Corporate Extended Stay	220	108	DUs	776	12	40	41	23	52	64
Employment	Office	710	714,250	GFA	7,145	601	97	119	619	698	738
Employment	Manufacturing/Industrial Park	130	219,500	GFA	1,414	72	16	19	69	88	88
Total Trip Generation					**30,926**	**1,408**	**809**	**958**	**1,429**	**2,217**	**2,387**

INTERNAL TRIP CAPTURE (TRIP REDUCTION) (NCHRP 684 TRIP CAPTURE ESTIMATION TOOL)

Land Use	AM Enter	AM Exit	PM Enter	PM Exit
Hotel	2	21	44	32
Retail	72	87	173	198
Residential	1	9	28	14
Employment	103	61	19	20
Total	**178**	**178**	**264**	**264**

TOTAL NEW TRIPS BEFORE PASS-BY REDUCTION

Land Use	AM Enter	AM Exit	PM Enter	PM Exit
Hotel	55	17	20	28
Retail	594	531	542	460
Residential	11	31	13	9
Employment	570	52	119	668
Total	**1,230**	**631**	**694**	**1,165**

NEW PASS-BY TRIPS

Land Use	AM Enter	AM Exit	PM Enter	PM Exit
Hotel	0	0	0	0
Retail	291	260	244	207
Residential	0	0	0	0
Employment	0	0	0	0
Total	**291**	**260**	**244**	**207**

TOTAL NEW TRIPS BEFORE TRANSIT REDUCTION

Land Use	AM Enter	AM Exit	PM Enter	PM Exit
Hotel	55	17	20	28
Retail	303	271	298	253
Residential	11	31	13	9
Employment	570	52	119	668
Total	**939**	**371**	**450**	**958**

2% TRANSIT (TRIP REDUCTION)

Land Use	AM Enter	AM Exit	PM Enter	PM Exit
Residential Ratio	2%	37%	10%	1%
Employment Ratio	98%	63%	90%	99%
Residential	0	3	1	0
Employment	18	5	8	19
Total	**20**	**8**	**10**	**20**

TOTAL NEW TRIPS

Land Use	AM Enter	AM Exit	PM Enter	PM Exit
Hotel	55	17	20	28
Retail	303	271	298	253
Residential	11	28	12	9
Employment	552	47	111	649
Total	**920**	**363**	**441**	**939**

MAX Q
Growth Rate Determination

AWDT on Carlisle
(N of Gibson)

Year	AWDT
2013	5,933
2014	5,298
2015	5,319
2016	5,335
2017	5,921

Linear Growth Rate = {[(5,921 - 5,933)/4]/5,921}x100= -0.05%

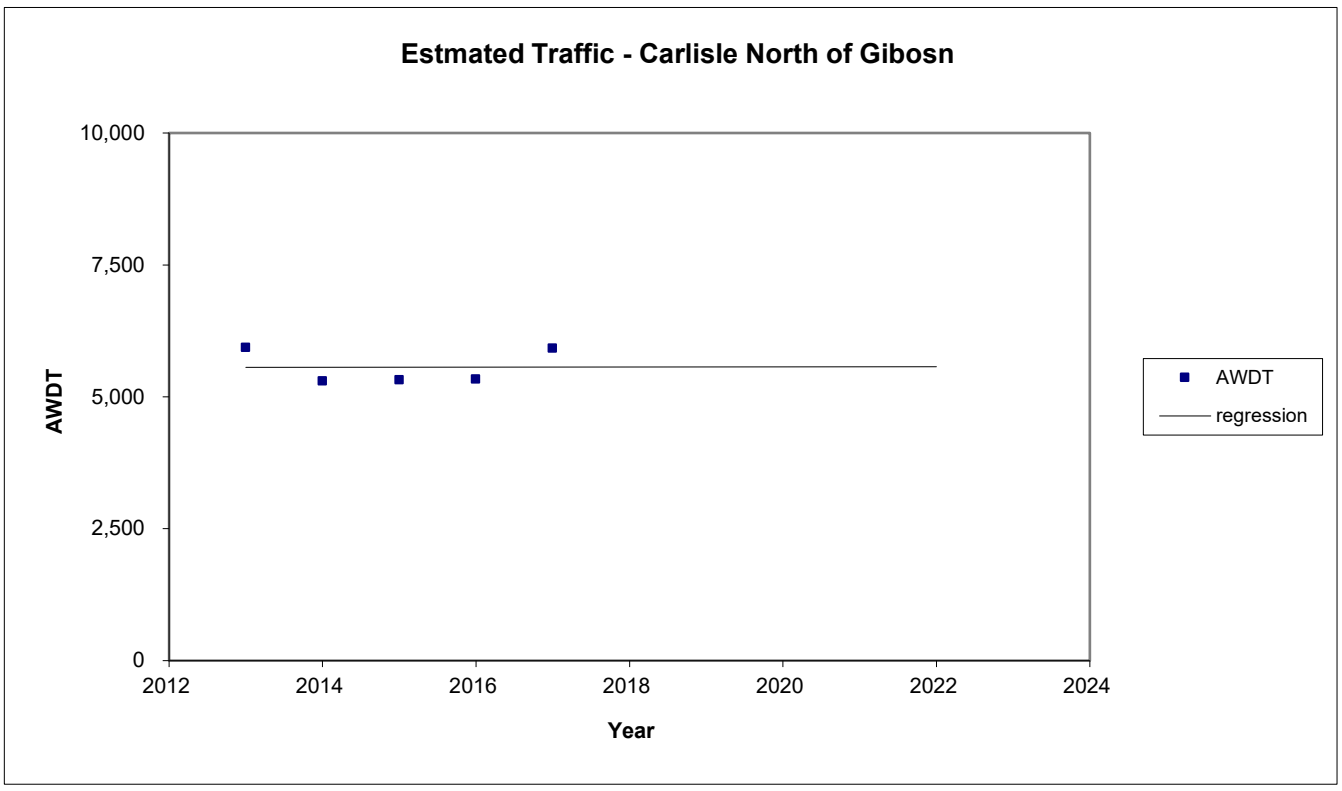
Regression Output	
R Square	0.00
Standard Error	3.86E+02
Observations	5
Intercept	2,942
Std Err of Intercept	2.E+05
Coefficient	1.30
Std Err of Coefficient	122

Regression Equation
AWDT = 1.30 x Year + 2,942

Coefficient Growth Rate 0.02%

Projected AWDT	
2013	5,559
2014	5,560
2015	5,561
2016	5,563
2017	5,564
2018	5,565
2019	5,566
2020	5,568
2021	5,569
2022	5,570

Estimated Annual Growth Rate
[(5,570-5,921)/5,921) x 100% = -5.92%
-5.92%/5 = -1.18%



MAX Q
Growth Rate Determination

AWDT on Gibson
(Between Carlisle and an Mateo)

Year	AWDT
2013	31,881
2014	30,915
2015	31,038
2016	31,131
2017	35,133

Linear Growth Rate = {[(35,133 -31,881)/4]/35,133}x100= 2.31%

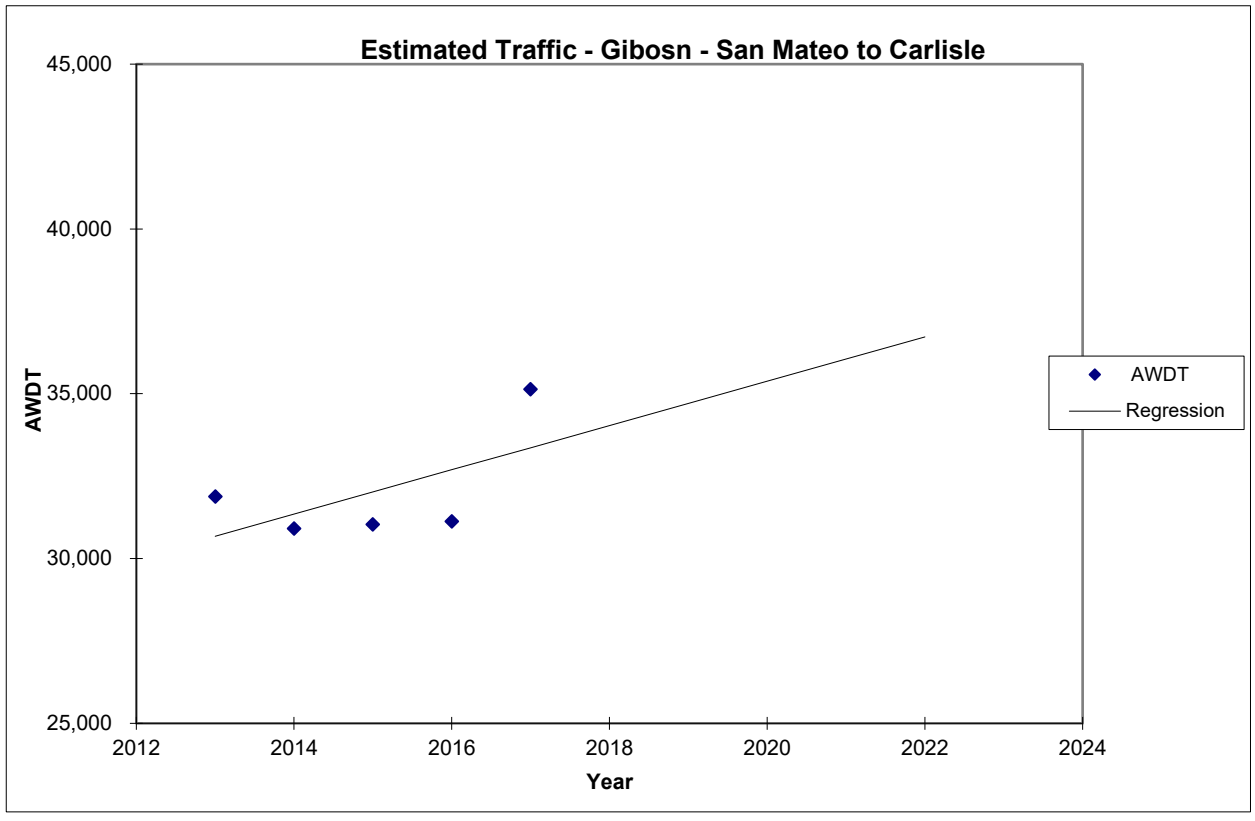
Regression Output	
R Square	0.356
Standard Error	1.65E+03
Observations	5
Intercept	-1,322,060
Std Err of Intercept	1.05E+06
Coefficient	672
Std Err of Coefficient	522

Projected AWDT	
2013	30,676
2014	31,348
2015	32,020
2016	32,692
2017	33,364
2018	34,036
2019	34,708
2020	35,380
2021	36,052
2022	36,724

Regression Equation
AWDT = 672 x Year - 1,322,060

Coefficient Growth Rate 1.91%

Estimated Annual Growth Rate
((36,724-35,133))/35,133) x 100% = 4.53%
4.53%/5 = 0.91%



MAX Q
Growth Rate Determination

AWDT on San Mateo
(N of Gibson)

Year	AWDT
2013	13,154
2014	13,101
2015	13,153
2016	14,105
2017	14,204

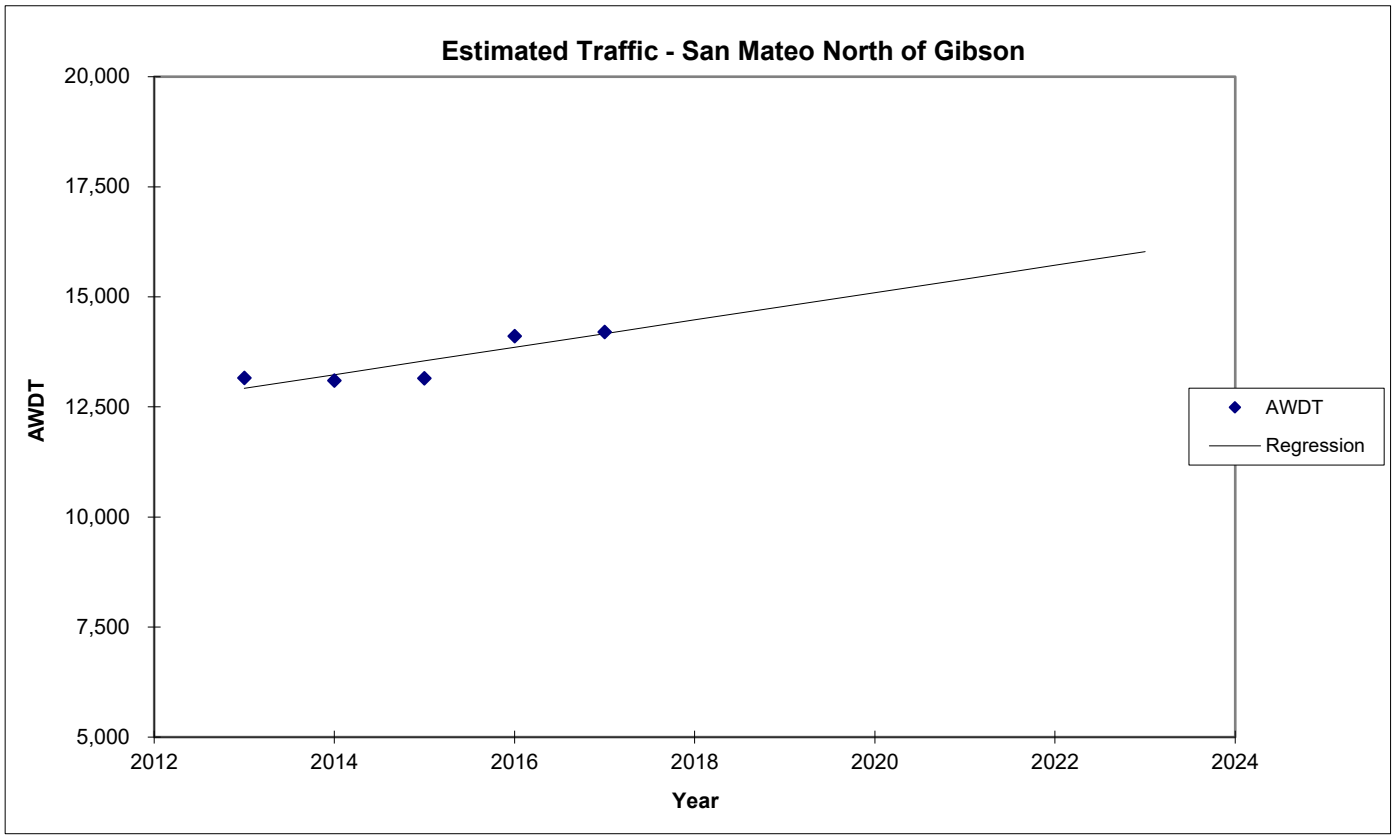
Linear Growth Rate = {[(14,204-13,154)/4]/14,204}x100= 1.85%

Regression Output	
R Square	0.77
Standard Error	3.10E+02
Observations	5
Intercept	-611,913
Std Err of Intercept	197,452
Coefficient	310
Std Err of Coefficient	9.80E+01

Projected AWDT	
2013	12,923
2014	13,233
2015	13,543
2016	13,854
2017	14,164
2018	14,475
2019	14,785
2020	15,095
2021	15,406
2022	15,716
2023	16,027

Regression Equation
AWDT = 310 x Year - 611,913 Coefficient Growth Rate 2.19%

Estimated Annual Growth Rate
[(16,027 - 14,204)/14,204) x 100% = 12.83%
12.83%/5 = 2.57%



MAX Q
Growth Rate Determination

AWDT
ALL

Year	AWDT
2013	50,968
2014	49,314
2015	49,510
2016	50,571
2017	55,258

Linear Growth Rate = {[55,258-50,968)/4]/55,258}x100= 1.94%

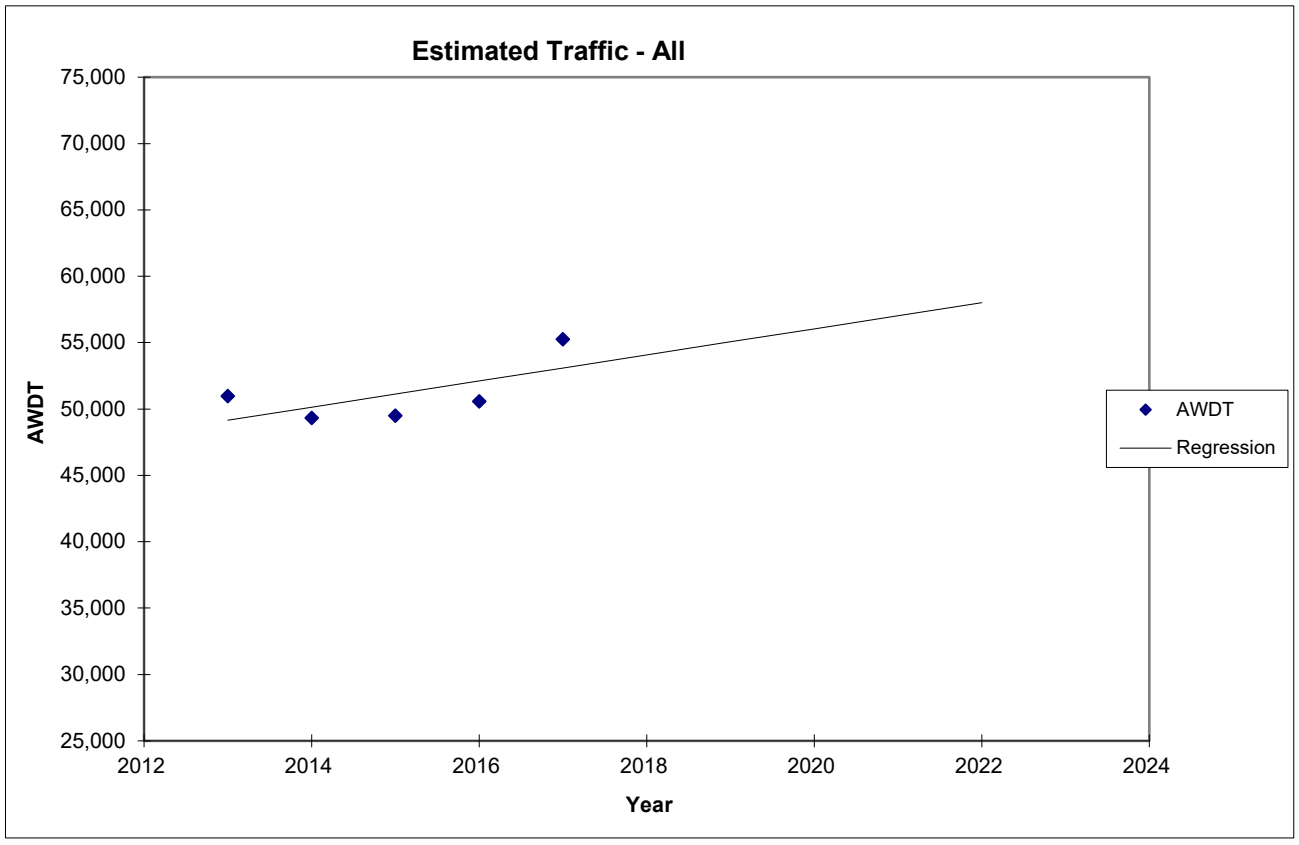
Regression Output	
R Square	0.42
Standard Error	2.13E+03
Observations	5
Intercept	-1,931,031
Std Err of Intercept	1,357,924
Coefficient	984
Std Err of Coefficient	6.74E+02

Projected AWDT	
2013	49,157
2014	50,141
2015	51,124
2016	52,108
2017	53,092
2018	54,075
2019	55,059
2020	56,043
2021	57,026
2022	58,010

Regression Equation
AWDT = 984 x Year - 1,931,031

USE
Coefficient Growth Rate 1.78%

Estimated Annual Growth Rate
[(58,010 - 55,258)/55,258) x 100% = 4.98%
4.98%/% = 1.00%



KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND CARLISLE

AM Peak Hour

	Southbound CARLISLE			Westbound GIBSON			Northbound CARLISLE			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**76**	**111**	**74**	**77**	**694**	**21**	**3**	**1**	**2**	**46**	**1,836**	**563**
Background Growth	15	22	15	15	137	4	1	0	0	9	364	111
Approved Development			98		151		1			59	65	1
2030 No Build	**91**	**133**	**187**	**92**	**982**	**25**	**5**	**1**	**2**	**114**	**2,265**	**675**
Employment Enter	39	6									314	50
Employment Exit	0	0	0	0	27	3	4	0	0	0	0	0
Retail Enter	39	3									94	9
Retail Exit	0	0	0	0	84	35	8	3	0	0	0	0
Residential Enter	1										7	
Residential Exit	0	0	0	0	19	2	0	0	0	0	0	0
Hotel Enter											55	
Hotel Exit	0	0	0	0	17	0	0	0	0	0	0	0
Pass-By Enter				7	-7						-18	18
Pass-By Exit							6		16			
2030 Build	**170**	**142**	**187**	**99**	**1,123**	**66**	**23**	**4**	**18**	**114**	**2,717**	**752**

PHF	*0.95*	*0.95*	*0.95*	*0.95*
HV %	*2*	*2*	*2*	*2*

PM Peak Hour

	Southbound CARLISLE			Westbound GIBSON			Northbound CARLISLE			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**57**	**0**	**110**	**0**	**1,958**	**109**	**425**	**105**	**80**	**96**	**1,124**	**3**
Background Growth	11	0	22	0	388	22	84	21	16	19	223	1
Approved Development			114		114		3			138	178	3
2030 No Build	**68**	**0**	**246**	**0**	**2,460**	**131**	**512**	**126**	**96**	**253**	**1,525**	**7**
Employment Enter	8	1									63	10
Employment Exit	0	0	0	0	370	45	58	6	0	0	0	0
Retail Enter	33	3									78	8
Retail Exit	0	0	0	0	78	33	8	3	0	0	0	0
Residential Enter	1										8	
Residential Exit	0	0	0	0	6	1	0	0	0	0	0	0
Hotel Enter											20	
Hotel Exit	0	0	0	0	28	0	0	0	0	0	0	0
Pass-By Enter				13	-13						-8	8
Pass-By Exit							11		6			
2030 Build	**110**	**4**	**246**	**13**	**2,929**	**210**	**589**	**135**	**102**	**253**	**1,687**	**32**

PHF	*0.97*	*0.97*	*0.97*	*0.97*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter	7.0%	1.0%									57.0%	9.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	57.0%	7.0%	9.0%	1.0%	0.0%	0.0%	0.0%	0.0%	
Trip Distribution % Enter	13.0%	1.0%									31.0%	3.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	31.0%	13.0%	3.0%	1.0%	0.0%	0.0%	0.0%	0.0%	
Trip Distribution % Enter	8.0%										69.0%		Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	69.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Trip Distribution % Enter											100.0%		Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND MAXWELL

AM Peak Hour

	Southbound MAXWELL			Westbound GIBSON			Northbound MAXWELL			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**60**	**0**	**49**	**0**	**899**	**49**	**0**	**0**	**0**	**42**	**1,681**	**0**
Background Growth	12	0	10	0	178	10	0	0	0	8	333	0
Approved Development					151						65	
2030 No Build	**72**	**0**	**59**	**0**	**1,228**	**59**	**0**	**0**	**0**	**50**	**2,079**	**0**
Employment Enter				44							298	55
Employment Exit	0	0	0	0	24	0	7	0	2	0	0	0
Retail Enter		3		73							97	36
Retail Exit	0	0	0	0	65	0	54	3	35	0	0	0
Residential Enter				2							5	3
Residential Exit	0	0	0	0	7	0	15	0	2	0	0	0
Hotel Enter											27	27
Hotel Exit	0	0	0	0	8	0	8	0	0	0	0	0
Pass-By Enter				26	-26						-48	48
Pass-By Exit							23		43			
2030 Build	**72**	**3**	**59**	**144**	**1,306**	**59**	**107**	**3**	**83**	**50**	**2,458**	**170**

PHF	*0.95*			*0.95*			*0.95*			*0.95*		
HV %		*2*			*2*			*2*			*2*	

PM Peak Hour

	Southbound MAXWELL			Westbound GIBSON			Northbound MAXWELL			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**52**	**0**	**54**	**0**	**2,054**	**65**	**0**	**0**	**0**	**43**	**1,169**	**0**
Background Growth	10	0	11	0	407	13	0	0	0	9	231	0
Approved Development					114						178	
2030 No Build	**62**	**0**	**65**	**0**	**2,575**	**78**	**0**	**0**	**0**	**52**	**1,578**	**0**
Employment Enter				9							60	11
Employment Exit	0	0	0	0	325	0	91	0	26	0	0	0
Retail Enter		3		61							81	30
Retail Exit	0	0	0	0	61	0	51	3	33	0	0	0
Residential Enter				2							6	3
Residential Exit	0	0	0	0	2	0	5	0	1	0	0	0
Hotel Enter											10	10
Hotel Exit	0	0	0	0	14	0	14	0	0	0	0	0
Pass-By Enter				40	-40						-23	23
Pass-By Exit							34		19			
2030 Build	**62**	**3**	**65**	**111**	**2,937**	**78**	**194**	**3**	**79**	**52**	**1,713**	**77**

PHF	*0.98*			*0.98*			*0.98*			*0.98*		
HV %		*2*			*2*			*2*			*2*	

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter				8.0%							54.0%	10.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	**50.0%**	0.0%	**14.0%**	0.0%	**4.0%**	0.0%	0.0%	0.0%	
Trip Distribution % Enter		1.0%		24.0%							32.0%	12.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	**24.0%**	0.0%	**20.0%**	1.0%	**13.0%**	0.0%	0.0%	0.0%	
Trip Distribution % Enter				15.0%							51.0%	26.0%	Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	**52.0%**	0.0%	**8.0%**	0.0%	0.0%	0.0%	
Trip Distribution % Enter											50.0%	50.0%	Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND DRIVEWAY 1

AM Peak Hour

	Southbound DRIVEWAY 1			Westbound GIBSON			Northbound DRIVEWAY 1			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)					**936**						**1,741**	
Background Growth	0	0	0	0	185	0	0	0	0	0	345	0
Approved Development					151						65	
2030 No Build	**0**	**0**	**0**	**0**	**1,272**	**0**	**0**	**0**	**0**	**0**	**2,151**	**0**
Employment Enter					44						276	22
Employment Exit	0	0	0	0	24	0	0	0	2	0	2	0
Retail Enter					73						73	24
Retail Exit	0	0	0	0	65	0		0	30	0	35	0
Residential Enter					2	0					3	3
Residential Exit	0	0	0	0	7	0	0	0	2	0	2	0
Hotel Enter											27	
Hotel Exit	0	0	0	0	8	0	0	0	0	0	0	0
Pass-By Enter											-48	48
Pass-By Exit									43			
2030 Build	**0**	**0**	**0**	**0**	**1,495**	**0**	**0**	**0**	**77**	**0**	**2,521**	**97**

PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

PM Peak Hour

	Southbound DRIVEWAY 1			Westbound GIBSON			Northbound DRIVEWAY 1			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)					**2,122**						**1,221**	
Background Growth	0	0	0	0	420	0	0	0	0	0	242	0
Approved Development					114						178	
2030 No Build	**0**	**0**	**0**	**0**	**2,656**	**0**	**0**	**0**	**0**	**0**	**1,641**	**0**
Employment Enter					9						55	4
Employment Exit	0	0	0	0	325	0	0	0	26	0	26	0
Retail Enter					61						61	20
Retail Exit	0	0	0	0	61	0		0	28	0	33	0
Residential Enter					2	0					3	3
Residential Exit	0	0	0	0	2	0	0	0	1	0	1	0
Hotel Enter											10	
Hotel Exit	0	0	0	0	14	0	0	0	0	0	0	0
Pass-By Enter											-40	40
Pass-By Exit									34			
2030 Build	**0**	**0**	**0**	**0**	**3,129**	**0**	**0**	**0**	**89**	**0**	**1,789**	**68**

PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter					8.0%						50.0%	4.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	4.0%	0.0%	4.0%	0.0%	
Trip Distribution % Enter					24.0%						24.0%	8.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	24.0%	0.0%		0.0%	11.0%	0.0%	**13.0%**	0.0%	
Trip Distribution % Enter					15.0%	0.0%					25.0%	26.0%	Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	**8.0%**	0.0%	8.0%	0.0%	
Trip Distribution % Enter											50.0%		Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND DRIVEWAY 2

AM Peak Hour

	Southbound DRIVEWAY 2			**Westbound** GIBSON			**Northbound** DRIVEWAY 2			**Eastbound** GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)					**936**						**1,741**	
Background Growth	0	0	0	0	185	0	0	0	0	0	345	0
Approved Development					151						65	
2030 No Build	**0**	**0**	**0**	**0**	**1,272**	**0**	**0**	**0**	**0**	**0**	**2,151**	**0**
Employment Enter					44						254	22
Employment Exit	0	0	0	0	24	0	0	0	2	0	4	0
Retail Enter					73						48	24
Retail Exit	0	0	0	0	65	0	0	0	16	0	65	0
Residential Enter					2						2	1
Residential Exit	0	0	0	0	7	0	0	0	1	0	5	0
Hotel Enter											27	
Hotel Exit	0	0	0	0	8	0	0	0	0	0	0	0
Pass-By Enter											-48	48
Pass-By Exit									43			
2030 Build	**0**	**0**	**0**	**0**	**1,495**	**0**	**0**	**0**	**62**	**0**	**2,507**	**95**

PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

PM Peak Hour

	Southbound DRIVEWAY 2			**Westbound** GIBSON			**Northbound** DRIVEWAY 2			**Eastbound** GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)					**2,122**						**1,221**	
Background Growth	0	0	0	0	420	0	0	0	0	0	242	0
Approved Development					114						178	
2030 No Build	**0**	**0**	**0**	**0**	**2,656**	**0**	**0**	**0**	**0**	**0**	**1,641**	**0**
Employment Enter					9						51	4
Employment Exit	0	0	0	0	325	0	0	0	26	0	52	0
Retail Enter					61						40	20
Retail Exit	0	0	0	0	61	0	0	0	15	0	61	0
Residential Enter					2						2	1
Residential Exit	0	0	0	0	2	0	0	0	0	0	1	0
Hotel Enter											10	
Hotel Exit	0	0	0	0	14	0	0	0	0	0	0	0
Pass-By Enter											-40	40
Pass-By Exit									34			
2030 Build	**0**	**0**	**0**	**0**	**3,129**	**0**	**0**	**0**	**75**	**0**	**1,818**	**66**

PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter					8.0%						46.0%	4.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	4.0%	0.0%	8.0%	0.0%	
Trip Distribution % Enter					24.0%						16.0%	8.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	**24.0%**	0.0%	0.0%	0.0%	6.0%	0.0%	24.0%	0.0%	
Trip Distribution % Enter					15.0%						17.0%	8.0%	Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	**25.0%**	0.0%	0.0%	0.0%	**2.0%**	0.0%	16.0%	0.0%	
Trip Distribution % Enter											50.0%		Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND QUINCY

AM Peak Hour

	Southbound QUINCY			Westbound GIBSON			Northbound QUINCY			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**0**	**0**	**13**	**0**	**923**	**0**	**0**	**0**	**0**	**6**	**1,789**	**0**
Background Growth	0	0	3	0	183	0	0	0	0	1	354	0
Approved Development					151						65	
2030 No Build	**0**	**0**	**16**	**0**	**1,257**	**0**	**0**	**0**	**0**	**7**	**2,208**	**0**
Employment Enter				72	44						121	132
Employment Exit	0	0	0	0	0	0	24	0	4	0	6	0
Retail Enter				67	73						24	24
Retail Exit	0	0	0	0	22	0	65	0	38	0	81	0
Residential Enter				1	2						1	1
Residential Exit	0	0	0	0	0	0	7	0	1	0	5	0
Hotel Enter												27
Hotel Exit	0	0	0	0	0	0	8	0	0	0	0	0
Pass-By Enter				16	-16						-32	32
Pass-By Exit							23		28			
2030 Build	**0**	**0**	**16**	**156**	**1,381**	**0**	**127**	**0**	**71**	**7**	**2,415**	**217**

PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

PM Peak Hour

	Southbound QUINCY			Westbound GIBSON			Northbound QUINCY			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**2**	**0**	**15**	**0**	**2,107**	**4**	**0**	**0**	**0**	**14**	**1,250**	**0**
Background Growth	0	0	3	0	417	1	0	0	0	3	248	0
Approved Development					114						178	
2030 No Build	**2**	**0**	**18**	**0**	**2,638**	**5**	**0**	**0**	**0**	**17**	**1,676**	**0**
Employment Enter				14	9						24	27
Employment Exit	0	0	0	0	0	0	325	0	58	0	78	0
Retail Enter				56	61						20	20
Retail Exit	0	0	0	0	20	0	61	0	35	0	76	0
Residential Enter				1	2						1	1
Residential Exit	0	0	0	0	0	0	2	0	0	0	2	0
Hotel Enter												10
Hotel Exit	0	0	0	0	0	0	14	0	0	0	0	0
Pass-By Enter				25	-25						-15	15
Pass-By Exit							31		13			
2030 Build	**2**	**0**	**18**	**96**	**2,705**	**5**	**433**	**0**	**107**	**17**	**1,862**	**73**

PHF	*0.96*	*0.96*	*0.96*	*0.96*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter				13.0%	8.0%						22.0%	24.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**50.0%**	0.0%	**9.0%**	0.0%	**12.0%**	0.0%	
Trip Distribution % Enter				22.0%	24.0%						8.0%	8.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	8.0%	0.0%	**24.0%**	0.0%	**14.0%**	0.0%	**30.0%**	0.0%	
Trip Distribution % Enter				8.0%	15.0%						8.0%	9.0%	Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**25.0%**	0.0%	**3.0%**	0.0%	18.0%	0.0%	
Trip Distribution % Enter												50.0%	Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND JACKSON

AM Peak Hour

	Southbound JACKSON			Westbound GIBSON			Northbound JACKSON			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**1**	**0**	**16**	**0**	**908**	**5**	**0**	**0**	**0**	**4**	**1,758**	**0**
Background Growth	0	0	3	0	180	1	0	0	0	1	348	0
Approved Development					151						65	
2030 No Build	**1**	**0**	**19**	**0**	**1,239**	**6**	**0**	**0**	**0**	**5**	**2,171**	**0**
Employment Enter					116						61	61
Employment Exit	0	0	0	0	5	0	0	0	2	0	10	0
Retail Enter					139						12	12
Retail Exit	0	0	0	0	0	0	0	0	19	0	119	0
Residential Enter					2							1
Residential Exit	0	0	0	0	0	0	0	0	1	0	6	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter											-39	39
Pass-By Exit									34			
2030 Build	**1**	**0**	**19**	**0**	**1,502**	**6**	**0**	**0**	**56**	**5**	**2,340**	**112**

PHF	*0.92*	*0.92*	*0.92*	*0.92*
HV %	*6*	*2*	*2*	*2*

PM Peak Hour

	Southbound JACKSON			Westbound GIBSON			Northbound JACKSON			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**0**	**0**	**9**	**0**	**2,117**	**2**	**0**	**0**	**0**	**16**	**1,212**	**0**
Background Growth	0	0	2	0	419	0	0	0	0	3	240	0
Approved Development					114						178	
2030 No Build	**0**	**0**	**11**	**0**	**2,650**	**2**	**0**	**0**	**0**	**19**	**1,630**	**0**
Employment Enter					23						12	12
Employment Exit	0	0	0	0	71	0	0	0	32	0	136	0
Retail Enter					116						10	10
Retail Exit	0	0	0	0	0	0	0	0	18	0	111	0
Residential Enter					3							1
Residential Exit	0	0	0	0	0	0	0	0	0	0	2	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter											-34	34
Pass-By Exit									31			
2030 Build	**0**	**0**	**11**	**0**	**2,864**	**2**	**0**	**0**	**81**	**19**	**1,868**	**57**

PHF	*0.96*	*0.96*	*0.96*	*0.96*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter					21.0%						11.0%	11.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	11.0%	0.0%	0.0%	0.0%	**5.0%**	0.0%	21.0%	0.0%	
Trip Distribution % Enter					46.0%						4.0%	4.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	**44.0%**	0.0%	
Trip Distribution % Enter					23.0%							8.0%	Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**2.0%**	0.0%	21.0%	0.0%	
Trip Distribution % Enter													Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND TRUMAN

AM Peak Hour

	Southbound TRUMAN			Westbound GIBSON			Northbound TRUMAN			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**8**	**81**	**19**	**243**	**851**	**4**	**56**	**1**	**32**	**10**	**1,311**	**460**
Background Growth	2	16	4	48	168	1	11	0	6	2	260	91
Approved Development					151						65	
2030 No Build	**10**	**97**	**23**	**291**	**1,170**	**5**	**67**	**1**	**38**	**12**	**1,636**	**551**
Employment Enter		6		22	116							61
Employment Exit	0	0	0	0	0	0	0	0	0	0	12	0
Retail Enter		3	15	12	124							12
Retail Exit	0	0	0	0	0	0	0	0	0	16	135	0
Residential Enter					2							
Residential Exit	0	0	0	0	0	0	0	0	0	0	6	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter				9	-9							
Pass-By Exit												
2030 Build	**10**	**106**	**38**	**335**	**1,404**	**5**	**67**	**1**	**38**	**29**	**1,789**	**624**

PHF	*0.91*	*0.91*	*0.91*	*0.91*
HV %	*2*	*2*	*8*	*2*

PM Peak Hour

	Southbound TRUMAN			Westbound GIBSON			Northbound TRUMAN			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**13**	**9**	**38**	**22**	**1,561**	**23**	**517**	**46**	**196**	**29**	**1,143**	**41**
Background Growth	3	2	8	4	309	5	102	9	39	6	226	8
Approved Development					114						178	
2030 No Build	**16**	**11**	**46**	**26**	**1,984**	**28**	**619**	**55**	**235**	**35**	**1,547**	**49**
Employment Enter		1		4	23							12
Employment Exit	0	0	0	0	0	0	0	0	0	6	162	0
Retail Enter		3	13	10	104							10
Retail Exit	0	0	0	0	0	0	0	0	0	15	127	0
Residential Enter					3							
Residential Exit	0	0	0	0	0	0	0	0	0	0	2	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter				12	-12							
Pass-By Exit												
2030 Build	**16**	**14**	**58**	**53**	**2,102**	**28**	**619**	**55**	**235**	**56**	**1,838**	**71**

PHF	*0.95*	*0.95*	*0.95*	*0.95*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter		1.0%		4.0%	21.0%							11.0%	Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**1.0%**	**25.0%**	0.0%	
Trip Distribution % Enter		1.0%	5.0%	4.0%	41.0%							4.0%	Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	**50.0%**	0.0%	
Trip Distribution % Enter					23.0%								Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.0%	0.0%	
Trip Distribution % Enter													Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: GIBSON AND SAN MATEO

AM Peak Hour

	Southbound SAN MATEO			Westbound GIBSON			Northbound SAN MATEO			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**94**	**254**	**259**	**86**	**785**	**53**	**67**	**41**	**29**	**174**	**741**	**438**
Background Growth	19	50	51	17	155	10	13	8	6	34	147	87
Approved Development			37		114					12	53	
2030 No Build	**113**	**304**	**348**	**103**	**1,054**	**63**	**80**	**49**	**35**	**221**	**940**	**525**
Employment Enter			66		72							
Employment Exit	0	0	0	0	0	0	0	0	0	6	6	0
Retail Enter			61		76							
Retail Exit	0	0	0	0	0	0	0	0	0	54	68	0
Residential Enter			1		1							
Residential Exit	0	0	0	0	0	0	0	0	0	3	4	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter												
Pass-By Exit												
2030 Build	**113**	**304**	**476**	**103**	**1,203**	**63**	**80**	**49**	**35**	**283**	**1,018**	**525**

PHF	*0.88*	*0.88*	*0.88*	*0.88*
HV %	*2*	*2*	*6*	*2*

PM Peak Hour

	Southbound SAN MATEO			Westbound GIBSON			Northbound SAN MATEO			Eastbound GIBSON		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)	**67**	**37**	**302**	**9**	**1,159**	**163**	**215**	**152**	**63**	**261**	**1,080**	**48**
Background Growth	13	7	60	2	229	32	43	30	12	52	214	10
Approved Development			24		90					35	143	
2030 No Build	**80**	**44**	**385**	**11**	**1,479**	**195**	**258**	**182**	**75**	**347**	**1,437**	**58**
Employment Enter			13		14							
Employment Exit	0	0	0	0	0	0	0	0	0	78	84	0
Retail Enter			51		63							
Retail Exit	0	0	0	0	0	0	0	0	0	51	63	0
Residential Enter			1		2							
Residential Exit	0	0	0	0	0	0	0	0	0	1	1	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter												
Pass-By Exit												
2030 Build	**80**	**44**	**450**	**11**	**1,558**	**195**	**258**	**182**	**75**	**477**	**1,586**	**58**

PHF	*0.93*	*0.93*	*0.93*	*0.93*
HV %	*3*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter			12.0%		13.0%								Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.0%	13.0%	0.0%	
Trip Distribution % Enter			20.0%		25.0%								Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	25.0%	0.0%	
Trip Distribution % Enter			10.0%		13.0%								Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	13.0%	0.0%	
Trip Distribution % Enter													Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

KAFB EUL MAXQ
EXISTING & PROJECTED TURNING MOVEMENTS

INTERSECTION: CARLISLE AND DRIVEWAY 3

AM Peak Hour

	Southbound CARLISLE			Westbound DRIVEWAY 3			Northbound CARLISLE			Eastbound DRIVEWAY 3		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)		**751**						**6**				
Background Growth	0	149	0	0	0	0	0	1	0	0	0	0
Approved Development												
2030 No Build	**0**	**900**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**
Employment Enter	55											
Employment Exit	0	0	0	0	0	5	0	0	0	0	0	0
Retail Enter	12											
Retail Exit	0	0	0	0	0	11	0	0	0	0	0	0
Residential Enter												
Residential Exit	0	0	0	0	0	0	0	0	0	0	0	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter	25											
Pass-By Exit						22						
2030 Build	**92**	**900**	**0**	**0**	**0**	**38**	**0**	**7**	**0**	**0**	**0**	**0**

PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

PM Peak Hour

	Southbound CARLISLE			Westbound DRIVEWAY 3			Northbound CARLISLE			Eastbound DRIVEWAY 3		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes (2019)		**3**						**610**				
Background Growth	0	1	0	0	0	0	0	121	0	0	0	0
Approved Development												
2030 No Build	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**731**	**0**	**0**	**0**	**0**
Employment Enter	11											
Employment Exit	0	0	0	0	0	65	0	0	0	0	0	0
Retail Enter	10											
Retail Exit	0	0	0	0	0	10	0	0	0	0	0	0
Residential Enter												
Residential Exit	0	0	0	0	0	0	0	0	0	0	0	0
Hotel Enter												
Hotel Exit	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Enter	21											
Pass-By Exit						18						
2030 Build	**42**	**4**	**0**	**0**	**0**	**93**	**0**	**731**	**0**	**0**	**0**	**0**

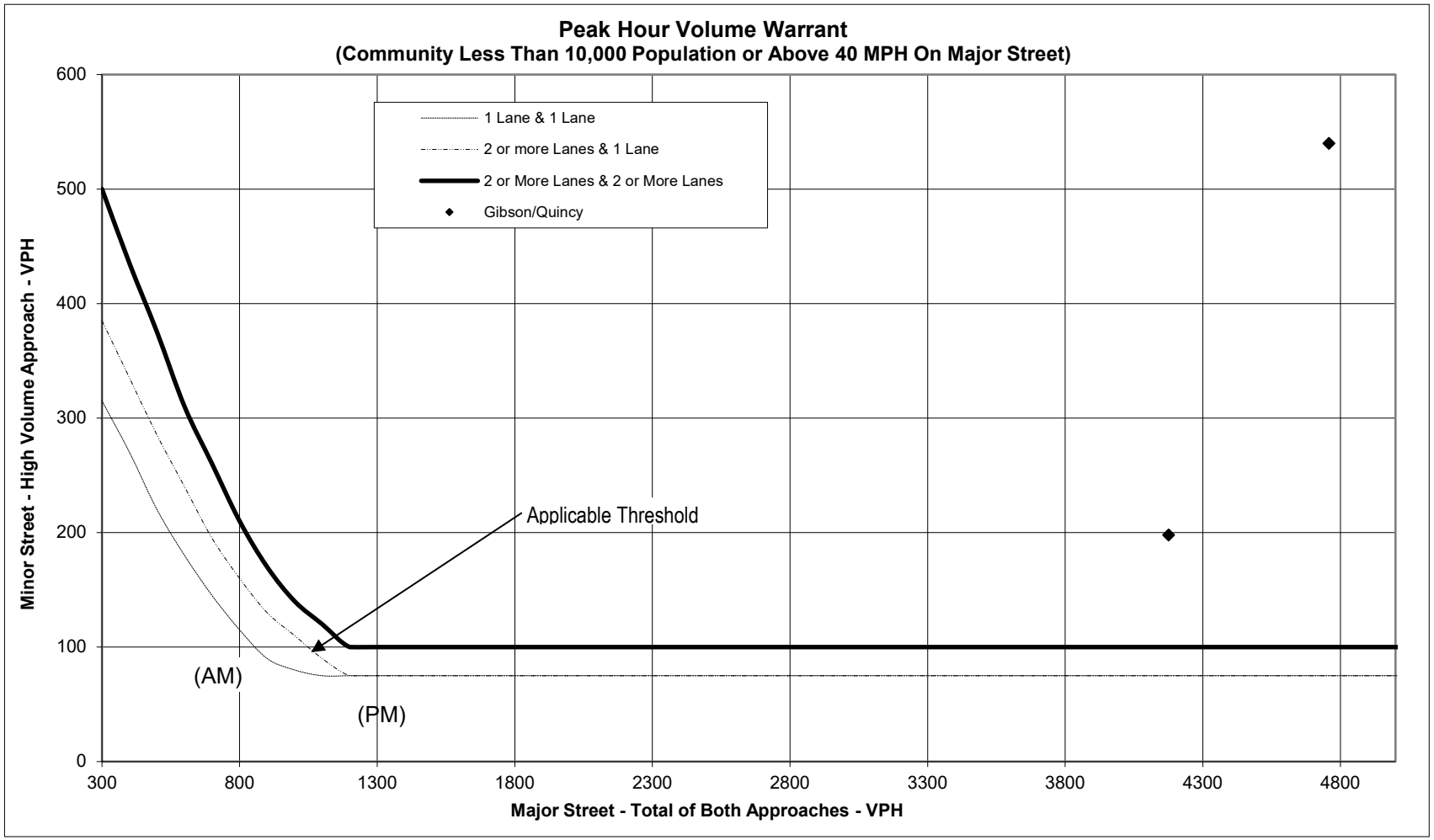
PHF	*0.94*	*0.94*	*0.94*	*0.94*
HV %	*2*	*2*	*2*	*2*

growth rates	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	
Trip Distribution % Enter	10.0%												Employment
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Trip Distribution % Enter	4.0%												Retail
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Trip Distribution % Enter													Residential
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Trip Distribution % Enter													Hotel
Trip Distribution % Exit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

PEAK HOUR VOLUME SIGNAL WARRANT ANALYSIS

Scenario: Build Phase 1/2
Intersection: Gibson/Quincy
Type: 2 or more Lane/1 Lane
Major Street (Orientation): Gibson (E/W)
Minor Street (Orientation): Quincy (N/S)

	Minor Street Approach Volume			Major Street Approach Volume			Satisfies
Time	NB	SB	High Vol Approach	EB	WB	EB + WB	Warrant 11?
AM Peak	198	16	198	2,639	1,537	4,176	YES
PM Peak	540	20	540	1,952	2,806	4,758	YES



Note: 100 VPH applies as the lower threshold for minor street approach with 2 or more lanes & 75 VPH as the threshold for a minor street approach with one lane

APPENDIX D:
2030 NO BUILD INTERSECTION CAPACITY ANALYSIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	2265	675	92	982	25	5	1	2	91	133	187
Future Volume (veh/h)	114	2265	675	92	982	25	5	1	2	91	133	187
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	2384	711	97	1034	26	5	1	2	96	140	197
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	390	2723	853	157	2718	923	253	415	370	478	494	441
Arrive On Green	0.05	0.53	0.53	0.10	1.00	1.00	0.01	0.23	0.23	0.05	0.28	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	1781	1777	1585	1781	1777	1585
Grp Volume(v), veh/h	120	2384	711	97	1034	26	5	1	2	96	140	197
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.2	49.0	37.9	1.5	0.0	0.0	0.3	0.1	0.1	4.8	7.4	12.3
Cycle Q Clear(g_c), s	4.2	49.0	37.9	1.5	0.0	0.0	0.3	0.1	0.1	4.8	7.4	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	2723	853	157	2718	923	253	415	370	478	494	441
V/C Ratio(X)	0.31	0.88	0.83	0.62	0.38	0.03	0.02	0.00	0.01	0.20	0.28	0.45
Avail Cap(c_a), veh/h	418	2723	853	157	2718	923	511	415	370	478	494	441
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	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	15.1	24.5	16.5	50.9	0.0	0.0	35.1	35.3	35.3	31.1	33.9	35.7
Incr Delay (d2), s/veh	0.4	4.3	9.4	6.7	0.4	0.1	0.0	0.0	0.0	0.2	1.4	3.3
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(95%),veh/ln	3.1	27.3	21.6	5.3	0.2	0.0	0.2	0.0	0.1	3.8	6.1	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	28.8	25.9	57.6	0.4	0.1	35.1	35.3	35.3	31.3	35.4	38.9
LnGrp LOS	B	C	C	E	A	A	D	D	D	C	D	D
Approach Vol, veh/h		3215			1157			8			433	
Approach Delay, s/veh		27.7			5.2			35.2			36.1	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	32.0	10.0	68.0	4.6	37.4	10.1	67.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	28.0	6.0	64.0	18.0	16.0	8.0	62.0
Max Q Clear Time (g_c+I1), s	6.8	2.1	3.5	51.0	2.3	14.3	6.2	2.0
Green Ext Time (p_c), s	0.0	0.0	0.0	12.1	0.0	0.3	0.0	9.9

Intersection Summary	
HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	50	2079	1228	59	72	59
Future Volume (vph)	50	2079	1228	59	72	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5050		1770	1583
Flt Permitted	0.17	1.00	1.00		0.95	1.00
Satd. Flow (perm)	318	5085	5050		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	2188	1293	62	76	62
RTOR Reduction (vph)	0	0	6	0	0	55
Lane Group Flow (vph)	53	2188	1349	0	76	7
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	7	4	8			
Permitted Phases	4				6	6
Actuated Green, G (s)	45.1	45.1	38.7		6.9	6.9
Effective Green, g (s)	45.1	45.1	38.7		6.9	6.9
Actuated g/C Ratio	0.75	0.75	0.65		0.12	0.12
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	297	3822	3257		203	182
v/s Ratio Prot	0.01	c0.43	0.27			
v/s Ratio Perm	0.13				c0.04	0.00
v/c Ratio	0.18	0.57	0.41		0.37	0.04
Uniform Delay, d1	3.5	3.2	5.2		24.6	23.6
Progression Factor	0.95	0.86	0.37		1.00	1.00
Incremental Delay, d2	0.1	0.3	0.4		1.2	0.1
Delay (s)	3.5	3.1	2.3		25.7	23.7
Level of Service	A	A	A		C	C
Approach Delay (s)		3.1	2.3		24.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	3.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2208	1257	0	0	16
Future Vol, veh/h	7	2208	1257	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2349	1337	0	0	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1337	0	-	0	2291	669
Stage 1	-	-	-	-	1337	-
Stage 2	-	-	-	-	954	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	268	-	-	-	65	343
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	302	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	268	-	-	-	63	343
Mov Cap-2 Maneuver	-	-	-	-	63	-
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	302	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	268	-	-	-	343
HCM Lane V/C Ratio	0.028	-	-	-	0.05
HCM Control Delay (s)	18.8	-	-	-	16
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2171	1239	6	1	19
Future Vol, veh/h	5	2171	1239	6	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	6
Mvmt Flow	5	2360	1347	7	1	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1354	0	-	0	2305	677
Stage 1	-	-	-	-	1351	-
Stage 2	-	-	-	-	954	-
Critical Hdwy	5.34	-	-	-	5.82	7.22
Critical Hdwy Stg 1	-	-	-	-	6.72	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	3.12	-	-	-	3.86	3.96
Pot Cap-1 Maneuver	263	-	-	-	61	332
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	294	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	263	-	-	-	60	332
Mov Cap-2 Maneuver	-	-	-	-	60	-
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	294	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	263	-	-	-	271
HCM Lane V/C Ratio	0.021	-	-	-	0.08
HCM Control Delay (s)	19	-	-	-	19.4
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1636	551	291	1170	5	67	1	38	10	97	23
Future Volume (veh/h)	12	1636	551	291	1170	5	67	1	38	10	97	23
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	1859	626	331	1330	6	76	1	43	11	110	26
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	2291	732	354	4110	19	125	1	479	32	117	25
Arrive On Green	0.60	0.60	0.60	0.30	1.00	1.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	410	3831	1223	1781	5246	24	433	8	1585	0	779	167
Grp Volume(v), veh/h	14	1641	844	331	863	473	77	0	43	147	0	0
Grp Sat Flow(s),veh/h/ln	410	1702	1650	1781	1702	1866	442	0	1585	946	0	0
Q Serve(g_s), s	1.7	44.9	50.6	15.7	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	44.9	50.6	15.7	0.0	0.0	18.0	0.0	2.3	18.0	0.0	0.0
Prop In Lane	1.00		0.74	1.00		0.01	0.99		1.00	0.07		0.18
Lane Grp Cap(c), veh/h	305	2036	987	354	2667	1462	126	0	479	174	0	0
V/C Ratio(X)	0.05	0.81	0.86	0.93	0.32	0.32	0.61	0.00	0.09	0.84	0.00	0.00
Avail Cap(c_a), veh/h	305	2036	987	425	2667	1462	126	0	479	174	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.54	0.54	0.54	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	18.7	19.9	31.1	0.0	0.0	52.2	0.0	30.0	47.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	3.5	9.4	16.4	0.2	0.3	20.2	0.0	0.4	36.8	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(95%),veh/ln	0.3	24.5	28.3	12.9	0.1	0.2	5.5	0.0	1.7	9.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	22.2	29.3	47.5	0.2	0.3	72.4	0.0	30.4	84.2	0.0	0.0
LnGrp LOS	B	C	C	D	A	A	E	A	C	F	A	A
Approach Vol, veh/h		2499			1667			120			147	
Approach Delay, s/veh		24.6			9.6			57.4			84.2	
Approach LOS		C			A			E			F	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		22.0	22.2	75.8		22.0		98.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0	23.0	67.0		18.0		94.0				
Max Q Clear Time (g_c+I1), s		20.0	17.7	52.6		20.0		2.0				
Green Ext Time (p_c), s		0.0	0.5	12.9		0.0		13.7				

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	940	525	103	1054	63	80	49	35	113	304	348
Future Volume (veh/h)	221	940	525	103	1054	63	80	49	35	113	304	348
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1811	1811	1811	1870	1870	1870
Adj Flow Rate, veh/h	251	1068	597	117	1198	72	91	56	0	128	345	395
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	2	2	2
Cap, veh/h	331	1135	528	239	1478	89	115	483		119	998	581
Arrive On Green	0.07	0.22	0.22	0.07	0.30	0.30	0.07	0.27	0.00	0.07	0.27	0.27
Sat Flow, veh/h	1781	3404	1585	1781	4925	296	1725	1811	1535	1781	3741	1585
Grp Volume(v), veh/h	251	1068	597	117	828	442	91	56	0	128	345	395
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1817	1725	1811	1535	1781	1870	1585
Q Serve(g_s), s	5.8	18.5	20.0	2.7	13.5	13.5	3.1	1.4	0.0	4.0	4.5	7.3
Cycle Q Clear(g_c), s	5.8	18.5	20.0	2.7	13.5	13.5	3.1	1.4	0.0	4.0	4.5	7.3
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	331	1135	528	239	1021	545	115	483		119	998	581
V/C Ratio(X)	0.76	0.94	1.13	0.49	0.81	0.81	0.79	0.12		1.08	0.35	0.68
Avail Cap(c_a), veh/h	331	1135	528	239	1021	545	115	483		119	998	581
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.40	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	22.7	23.3	15.6	19.4	19.4	27.6	16.6	0.0	28.0	17.8	6.1
Incr Delay (d2), s/veh	4.1	7.8	68.6	1.6	7.0	12.4	30.2	0.5	0.0	105.0	1.0	6.3
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(95%),veh/ln	4.2	11.7	23.8	1.9	9.7	11.3	3.9	1.1	0.0	9.0	3.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	30.6	91.9	17.1	26.4	31.8	57.8	17.1	0.0	133.0	18.7	12.4
LnGrp LOS	B	C	F	B	C	C	E	B		F	B	B
Approach Vol, veh/h		1916			1387			147	A		868	
Approach Delay, s/veh		48.2			27.3			42.3			32.7	
Approach LOS		D			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	20.0	8.0	24.0	8.0	20.0	10.0	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	16.0	4.0	20.0	4.0	16.0	6.0	18.0
Max Q Clear Time (g_c+I1), s	6.0	3.4	4.7	22.0	5.1	9.3	7.8	15.5
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	2.1	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	1525	7	0	2460	131	512	126	96	68	0	246
Future Volume (veh/h)	253	1525	7	0	2460	131	512	126	96	68	0	246
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	261	1572	7	0	2536	135	528	130	99	70	0	254
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	2638	1110	204	2425	825	387	539	382	294	237	211
Arrive On Green	0.08	0.52	0.52	0.00	0.63	0.63	0.18	0.27	0.27	0.05	0.00	0.13
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	1781	1988	1407	1781	1777	1585
Grp Volume(v), veh/h	261	1572	7	0	2536	135	528	115	114	70	0	254
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1781	1777	1617	1781	1777	1585
Q Serve(g_s), s	9.0	25.8	0.1	0.0	57.0	2.5	22.0	6.1	6.6	4.0	0.0	16.0
Cycle Q Clear(g_c), s	9.0	25.8	0.1	0.0	57.0	2.5	22.0	6.1	6.6	4.0	0.0	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	194	2638	1110	204	2425	825	387	482	439	294	237	211
V/C Ratio(X)	1.35	0.60	0.01	0.00	1.05	0.16	1.37	0.24	0.26	0.24	0.00	1.20
Avail Cap(c_a), veh/h	194	2638	1110	204	2425	825	387	482	439	303	237	211
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(I)	1.00	1.00	1.00	0.00	0.71	0.71	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	20.3	1.9	0.0	22.1	4.7	35.5	34.1	34.3	42.1	0.0	52.0
Incr Delay (d2), s/veh	186.9	1.0	0.0	0.0	29.1	0.3	180.5	1.2	1.4	0.4	0.0	127.1
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(95%),veh/ln	24.4	15.5	0.1	0.0	33.1	1.8	43.5	5.0	5.0	3.3	0.0	21.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	241.0	21.3	2.0	0.0	51.2	5.0	216.0	35.2	35.7	42.5	0.0	179.1
LnGrp LOS	F	C	A	A	F	A	F	D	D	D	A	F
Approach Vol, veh/h		1840			2671			757			324	
Approach Delay, s/veh		52.3			48.8			161.4			149.6	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	36.6	8.0	66.0	26.0	20.0	13.0	61.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	32.0	4.0	62.0	22.0	16.0	9.0	57.0
Max Q Clear Time (g_c+I1), s	6.0	8.6	0.0	27.8	24.0	18.0	11.0	59.0
Green Ext Time (p_c), s	0.0	1.3	0.0	15.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.1
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	1676	2638	5	2	18
Future Vol, veh/h	17	1676	2638	5	2	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	1746	2748	5	2	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2753	0	-	0	3485	1377
Stage 1	-	-	-	-	2751	-
Stage 2	-	-	-	-	734	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	51	-	-	-	14	115
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	396	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	51	-	-	-	9	115
Mov Cap-2 Maneuver	-	-	-	-	9	-
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	396	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	111.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	51	-	-	-	53
HCM Lane V/C Ratio	0.347	-	-	-	0.393
HCM Control Delay (s)	109.3	-	-	-	111.5
HCM Lane LOS	F	-	-	-	F
HCM 95th %tile Q(veh)	1.2	-	-	-	1.4

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	1630	2650	2	0	11
Future Vol, veh/h	19	1630	2650	2	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	1698	2760	2	0	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2762	0	-	0	3480	1381
Stage 1	-	-	-	-	2761	-
Stage 2	-	-	-	-	719	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	51	-	-	-	14	115
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	403	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	51	-	-	-	9	115
Mov Cap-2 Maneuver	-	-	-	-	9	-
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	403	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	39.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	51	-	-	-	115
HCM Lane V/C Ratio	0.388	-	-	-	0.1
HCM Control Delay (s)	114.8	-	-	-	39.7
HCM Lane LOS	F	-	-	-	E
HCM 95th %tile Q(veh)	1.4	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1547	49	26	1984	28	619	55	235	16	11	46
Future Volume (veh/h)	35	1547	49	26	1984	28	619	55	235	16	11	46
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1579	50	27	2024	29	632	56	240	16	11	47
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	1848	59	119	2161	31	266	18	850	36	37	64
Arrive On Green	0.36	0.36	0.36	0.04	0.83	0.83	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	204	5084	161	1781	5187	74	403	36	1585	0	72	125
Grp Volume(v), veh/h	36	1057	572	27	1328	725	688	0	240	74	0	0
Grp Sat Flow(s),veh/h/ln	204	1702	1841	1781	1702	1857	438	0	1585	196	0	0
Q Serve(g_s), s	14.3	34.4	34.4	1.1	35.5	35.7	0.0	0.0	9.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	43.6	34.4	34.4	1.1	35.5	35.7	62.0	0.0	9.9	62.0	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.04	0.92		1.00	0.22		0.64
Lane Grp Cap(c), veh/h	84	1238	669	119	1418	774	284	0	850	138	0	0
V/C Ratio(X)	0.43	0.85	0.85	0.23	0.94	0.94	2.42	0.00	0.28	0.54	0.00	0.00
Avail Cap(c_a), veh/h	84	1238	669	143	1418	774	284	0	850	138	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.32	0.32	0.32	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	55.1	35.3	35.3	27.4	8.8	8.8	35.3	0.0	15.2	27.2	0.0	0.0
Incr Delay (d2), s/veh	15.0	7.6	13.1	0.3	5.1	8.5	650.4	0.0	0.8	14.2	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(95%),veh/ln	2.6	21.8	24.5	0.8	6.5	7.9	103.4	0.0	6.7	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	42.9	48.4	27.7	13.9	17.3	685.7	0.0	16.0	41.3	0.0	0.0
LnGrp LOS	E	D	D	C	B	B	F	A	B	D	A	A
Approach Vol, veh/h		1665			2080			928			74	
Approach Delay, s/veh		45.4			15.2			512.5			41.3	
Approach LOS		D			B			F			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		66.0	6.4	47.6		66.0		54.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		62.0	4.0	42.0		62.0		50.0				
Max Q Clear Time (g_c+I1), s		64.0	3.1	45.6		64.0		37.7				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		9.9				

Intersection Summary	
HCM 6th Ctrl Delay	123.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	1437	58	11	1479	195	258	182	75	80	44	385
Future Volume (veh/h)	347	1437	58	11	1479	195	258	182	75	80	44	385
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	373	1545	62	12	1590	210	277	196	0	86	47	414
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, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	396	2798	112	187	1750	231	297	489		136	247	498
Arrive On Green	0.37	1.00	1.00	0.01	0.38	0.38	0.17	0.26	0.00	0.04	0.13	0.13
Sat Flow, veh/h	1781	5036	202	1781	4565	601	1781	1870	1585	3534	1856	1572
Grp Volume(v), veh/h	373	1044	563	12	1185	615	277	196	0	86	47	414
Grp Sat Flow(s),veh/h/ln	1781	1702	1834	1781	1702	1762	1781	1870	1585	1767	1856	1572
Q Serve(g_s), s	19.3	0.0	0.0	0.5	39.5	39.7	18.4	10.4	0.0	2.9	2.7	8.6
Cycle Q Clear(g_c), s	19.3	0.0	0.0	0.5	39.5	39.7	18.4	10.4	0.0	2.9	2.7	8.6
Prop In Lane	1.00		0.11	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	1892	1019	187	1305	675	297	489		136	247	498
V/C Ratio(X)	0.94	0.55	0.55	0.06	0.91	0.91	0.93	0.40		0.63	0.19	0.83
Avail Cap(c_a), veh/h	396	1892	1019	226	1305	675	297	489		206	247	498
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.44	0.44	0.44	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	0.0	24.2	35.0	35.1	49.3	36.6	0.0	56.8	46.2	17.4
Incr Delay (d2), s/veh	17.6	0.5	1.0	0.1	10.8	18.6	35.0	2.4	0.0	4.7	1.7	14.9
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	0.0
%ile BackOfQ(95%),veh/ln	12.9	0.2	0.5	0.4	25.0	27.6	16.5	8.8	0.0	2.5	2.5	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	0.5	1.0	24.4	45.8	53.7	84.3	39.0	0.0	61.6	47.9	32.3
LnGrp LOS	D	A	A	C	D	D	F	D		E	D	C
Approach Vol, veh/h		1980			1812			473	A		547	
Approach Delay, s/veh		10.5			48.3			65.5			38.2	
Approach LOS		B			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	35.4	5.3	70.7	24.0	20.0	26.0	50.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	29.0	4.0	64.0	20.0	16.0	22.0	46.0
Max Q Clear Time (g_c+I1), s	4.9	12.4	2.5	2.0	20.4	10.6	21.3	41.7
Green Ext Time (p_c), s	0.0	0.9	0.0	18.6	0.0	0.9	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	52	1578	2575	78	62	65
Future Volume (vph)	52	1578	2575	78	62	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.91	0.91		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	5085	5063		1770	1583
Flt Permitted	0.04	1.00	1.00		0.95	1.00
Satd. Flow (perm)	75	5085	5063		1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	53	1610	2628	80	63	66
RTOR Reduction (vph)	0	0	2	0	0	61
Lane Group Flow (vph)	53	1610	2706	0	63	5
Turn Type	pm+pt	NA	NA		Perm	Perm
Protected Phases	7	4	8			
Permitted Phases	4				6	6
Actuated Green, G (s)	103.6	103.6	94.8		8.4	8.4
Effective Green, g (s)	103.6	103.6	94.8		8.4	8.4
Actuated g/C Ratio	0.86	0.86	0.79		0.07	0.07
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	132	4390	3999		123	110
v/s Ratio Prot	0.02	c0.32	c0.53			
v/s Ratio Perm	0.33				c0.04	0.00
v/c Ratio	0.40	0.37	0.68		0.51	0.04
Uniform Delay, d1	16.0	1.6	5.7		53.8	52.0
Progression Factor	0.80	0.87	0.36		1.00	1.00
Incremental Delay, d2	1.8	0.2	0.3		3.6	0.2
Delay (s)	14.5	1.6	2.4		57.4	52.2
Level of Service	B	A	A		E	D
Approach Delay (s)		2.0	2.4		54.7	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E:
2030 BUILD INTERSECTION CAPACITY ANALYSIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	2717	752	99	1123	66	23	4	18	170	142	187
Future Volume (veh/h)	114	2717	752	99	1123	66	23	4	18	170	142	187
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	2860	792	104	1182	69	24	4	19	179	149	197
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	432	3021	967	122	2808	1029	209	252	225	419	396	353
Arrive On Green	0.08	0.59	0.59	0.07	1.00	1.00	0.02	0.14	0.14	0.10	0.22	0.22
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	1781	1777	1585	1781	1777	1585
Grp Volume(v), veh/h	120	2860	792	104	1182	69	24	4	19	179	149	197
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	62.4	36.5	2.7	0.0	0.0	1.4	0.2	1.2	10.0	8.5	13.2
Cycle Q Clear(g_c), s	0.0	62.4	36.5	2.7	0.0	0.0	1.4	0.2	1.2	10.0	8.5	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	3021	967	122	2808	1029	209	252	225	419	396	353
V/C Ratio(X)	0.28	0.95	0.82	0.85	0.42	0.07	0.11	0.02	0.08	0.43	0.38	0.56
Avail Cap(c_a), veh/h	432	3021	967	122	2808	1029	369	252	225	420	396	353
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	22.7	11.4	54.5	0.0	0.0	43.0	44.3	44.7	36.8	39.6	41.4
Incr Delay (d2), s/veh	0.3	7.9	7.7	38.4	0.4	0.1	0.2	0.1	0.7	0.7	2.7	6.2
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(95%),veh/ln	3.1	33.7	19.6	7.5	0.2	0.1	1.1	0.2	1.0	7.9	7.3	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	30.7	19.1	92.9	0.4	0.1	43.2	44.4	45.5	37.5	42.3	47.6
LnGrp LOS	B	C	B	F	A	A	D	D	D	D	D	D
Approach Vol, veh/h		3772			1355			47			525	
Approach Delay, s/veh		27.7			7.5			44.2			42.7	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	21.0	8.1	75.0	6.2	30.7	13.1	70.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	17.0	4.0	71.0	13.0	16.0	9.0	66.0
Max Q Clear Time (g_c+I1), s	12.0	3.2	4.7	64.4	3.4	15.2	2.0	2.0
Green Ext Time (p_c), s	0.0	0.0	0.0	6.5	0.0	0.2	0.1	12.4

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	2458	170	144	1306	59	107	3	83	72	3	59
Future Volume (veh/h)	50	2458	170	144	1306	59	107	3	83	72	3	59
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	2587	179	152	1375	62	113	3	87	76	3	62
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	3216	219	211	3255	147	278	10	290	128	11	72
Arrive On Green	0.12	1.00	1.00	0.11	1.00	1.00	0.04	0.19	0.19	0.11	0.11	0.11
Sat Flow, veh/h	1781	4883	332	1781	5008	226	1781	53	1540	717	93	636
Grp Volume(v), veh/h	53	1789	977	152	935	502	113	0	90	141	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1811	1781	1702	1830	1781	0	1593	1446	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.3	0.0	0.0	5.0	0.0	5.8	10.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.3	0.0	0.0	5.0	0.0	5.8	11.5	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.12	1.00		0.97	0.54		0.44
Lane Grp Cap(c), veh/h	373	2242	1193	211	2213	1189	278	0	300	210	0	0
V/C Ratio(X)	0.14	0.80	0.82	0.72	0.42	0.42	0.41	0.00	0.30	0.67	0.00	0.00
Avail Cap(c_a), veh/h	373	2242	1193	265	2213	1189	278	0	332	239	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	0.26	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	14.8	0.0	0.0	44.1	0.0	41.9	52.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.7	6.9	0.6	1.1	1.0	0.0	0.6	6.0	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(95%),veh/ln	1.1	0.5	1.0	3.6	0.3	0.7	5.5	0.0	4.2	8.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	0.8	1.7	21.7	0.6	1.1	45.0	0.0	42.4	58.2	0.0	0.0
LnGrp LOS	A	A	A	C	A	A	D	A	D	E	A	A
Approach Vol, veh/h		2819			1589			203			141	
Approach Delay, s/veh		1.3			2.8			43.9			58.2	
Approach LOS		A			A			D			E	

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		26.6	10.4	83.0	9.0	17.6	11.4	82.0
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s		25.0	10.0	73.0	5.0	16.0	5.0	78.0
Max Q Clear Time (g_c+I1), s		7.8	6.3	2.0	7.0	13.5	2.0	2.0
Green Ext Time (p_c), s		0.4	0.1	52.3	0.0	0.2	0.0	15.5

Intersection Summary	
HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2521	97	0	1495	0	77
Future Vol, veh/h	2521	97	0	1495	0	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2682	103	0	1590	0	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1393
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	113
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	113
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	94.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	113	-	-	-
HCM Lane V/C Ratio	0.725	-	-	-
HCM Control Delay (s)	94.2	-	-	-
HCM Lane LOS	F	-	-	-
HCM 95th %tile Q(veh)	3.9	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2507	95	0	1495	0	62
Future Vol, veh/h	2507	95	0	1495	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2667	101	0	1590	0	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1384
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	114
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	114
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	73
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	114	-	-	-
HCM Lane V/C Ratio	0.579	-	-	-
HCM Control Delay (s)	73	-	-	-
HCM Lane LOS	F	-	-	-
HCM 95th %tile Q(veh)	2.8	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	2415	217	156	1381	0	127	0	71	0	0	16
Future Volume (veh/h)	7	2415	217	156	1381	0	127	0	71	0	0	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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	2569	231	166	1469	0	135	0	76	0	0	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	2908	255	458	4057	0	293	0	156	0	0	50
Arrive On Green	0.01	1.00	1.00	0.39	1.00	0.00	0.03	0.00	0.10	0.00	0.00	0.03
Sat Flow, veh/h	1781	4780	419	1781	5274	0	3456	0	1585	0	0	1585
Grp Volume(v), veh/h	7	1811	989	166	1469	0	135	0	76	0	0	17
Grp Sat Flow(s),veh/h/ln	1781	1702	1795	1781	1702	0	1728	0	1585	0	0	1585
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.0	4.0	0.0	5.4	0.0	0.0	1.3
Cycle Q Clear(g_c), s	0.2	0.0	0.0	0.0	0.0	0.0	4.0	0.0	5.4	0.0	0.0	1.3
Prop In Lane	1.00		0.23	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	277	2071	1092	458	4057	0	293	0	156	0	0	50
V/C Ratio(X)	0.03	0.87	0.91	0.36	0.36	0.00	0.46	0.00	0.49	0.00	0.00	0.34
Avail Cap(c_a), veh/h	324	2071	1092	458	4057	0	293	0	317	0	0	211
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	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	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	19.0	0.0	0.0	53.0	0.0	51.2	0.0	0.0	56.9
Incr Delay (d2), s/veh	0.0	5.5	12.3	0.5	0.3	0.0	1.1	0.0	2.3	0.0	0.0	3.9
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	0.0
%ile BackOfQ(95%),veh/ln	0.1	2.9	6.7	5.6	0.2	0.0	3.7	0.0	4.1	0.0	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	5.5	12.3	19.5	0.3	0.0	54.2	0.0	53.6	0.0	0.0	60.7
LnGrp LOS	B	A	B	B	A	A	D	A	D	A	A	E
Approach Vol, veh/h		2807			1635			211			17	
Approach Delay, s/veh		7.9			2.2			53.9			60.7	
Approach LOS		A			A			D			E	

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		15.8	27.2	77.0	8.0	7.8	4.8	99.3
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s		24.0	11.0	73.0	4.0	16.0	4.0	80.0
Max Q Clear Time (g_c+I1), s		7.4	2.0	2.0	6.0	3.3	2.2	2.0
Green Ext Time (p_c), s		0.3	0.3	53.3	0.0	0.0	0.0	17.6

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2340	112	0	1502	6	0	0	56	1	0	19
Future Vol, veh/h	5	2340	112	0	1502	6	0	0	56	1	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	6	6	6
Mvmt Flow	5	2543	122	0	1633	7	0	0	61	1	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1640	0	0	-	-	0	-	-	1333	2664	-	820
Stage 1	-	-	-	-	-	-	-	-	-	1637	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1027	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	6.52	-	7.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	7.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.82	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	3.86	-	3.96
Pot Cap-1 Maneuver	190	-	-	0	-	-	0	0	124	23	0	266
Stage 1	-	-	-	0	-	-	0	0	-	68	0	-
Stage 2	-	-	-	0	-	-	0	0	-	220	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	190	-	-	-	-	-	-	-	124	11	-	266
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	11	-	-
Stage 1	-	-	-	-	-	-	-	-	-	66	-	-
Stage 2	-	-	-	-	-	-	-	-	-	109	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	59.2	19.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	124	190	-	-	-	-	266
HCM Lane V/C Ratio	0.491	0.029	-	-	-	-	0.078
HCM Control Delay (s)	59.2	24.5	-	-	-	-	19.7
HCM Lane LOS	F	C	-	-	-	-	C
HCM 95th %tile Q(veh)	2.3	0.1	-	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1789	624	335	1404	5	67	1	38	10	106	38
Future Volume (veh/h)	29	1789	624	335	1404	5	67	1	38	10	106	38
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1781	1781	1781	1870	1870	1870
Adj Flow Rate, veh/h	32	1966	686	368	1543	5	74	1	42	11	116	42
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, %	2	2	2	2	2	2	8	8	8	2	2	2
Cap, veh/h	221	2468	766	537	3985	13	122	1	629	32	127	42
Arrive On Green	0.97	0.97	0.97	0.48	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	334	5106	1585	1781	5254	17	358	7	1510	0	725	240
Grp Volume(v), veh/h	32	1966	686	368	1000	548	75	0	42	169	0	0
Grp Sat Flow(s),veh/h/ln	334	1702	1585	1781	1702	1867	365	0	1510	965	0	0
Q Serve(g_s), s	0.5	6.7	12.9	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	6.7	12.9	9.6	0.0	0.0	21.0	0.0	0.0	21.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.99		1.00	0.07		0.25
Lane Grp Cap(c), veh/h	221	2468	766	537	2581	1416	124	0	629	201	0	0
V/C Ratio(X)	0.14	0.80	0.90	0.69	0.39	0.39	0.61	0.00	0.07	0.84	0.00	0.00
Avail Cap(c_a), veh/h	221	2468	766	537	2581	1416	124	0	629	201	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.62	0.62	0.62	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.0	1.1	1.2	21.5	0.0	0.0	51.0	0.0	21.0	45.5	0.0	0.0
Incr Delay (d2), s/veh	1.4	2.8	15.2	2.3	0.3	0.5	20.2	0.0	0.2	32.6	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(95%),veh/ln	0.2	2.3	7.0	9.1	0.2	0.4	5.4	0.0	1.4	10.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.4	3.9	16.5	23.8	0.3	0.5	71.3	0.0	21.2	78.1	0.0	0.0
LnGrp LOS	A	A	B	C	A	A	E	A	C	E	A	A
Approach Vol, veh/h		2684			1916			117			169	
Approach Delay, s/veh		7.1			4.8			53.3			78.1	
Approach LOS		A			A			D			E	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		25.0	33.0	62.0		25.0		95.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		21.0	29.0	58.0		21.0		91.0				
Max Q Clear Time (g_c+I1), s		23.0	11.6	14.9		23.0		2.0				
Green Ext Time (p_c), s		0.0	1.1	30.9		0.0		18.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	1018	525	103	1203	63	80	49	35	113	304	476
Future Volume (veh/h)	283	1018	525	103	1203	63	80	49	35	113	304	476
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1811	1811	1811	1870	1870	1870
Adj Flow Rate, veh/h	322	1157	597	117	1367	72	91	56	0	128	345	541
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	6	6	6	2	2	2
Cap, veh/h	374	2032	946	238	2697	142	113	241		162	592	409
Arrive On Green	0.10	0.60	0.60	0.05	0.54	0.54	0.07	0.13	0.00	0.09	0.16	0.16
Sat Flow, veh/h	1781	3404	1585	1781	4966	262	1725	1811	1535	1781	3741	1585
Grp Volume(v), veh/h	322	1157	597	117	937	502	91	56	0	128	345	541
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1823	1725	1811	1535	1781	1870	1585
Q Serve(g_s), s	9.0	24.9	29.2	3.5	20.8	20.8	6.2	3.3	0.0	8.4	10.3	19.0
Cycle Q Clear(g_c), s	9.0	24.9	29.2	3.5	20.8	20.8	6.2	3.3	0.0	8.4	10.3	19.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	2032	946	238	1849	990	113	241		162	592	409
V/C Ratio(X)	0.86	0.57	0.63	0.49	0.51	0.51	0.80	0.23		0.79	0.58	1.32
Avail Cap(c_a), veh/h	642	2032	946	320	1849	990	158	241		208	592	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	14.8	15.6	14.6	17.3	17.3	55.3	46.5	0.0	53.4	46.8	29.6
Incr Delay (d2), s/veh	3.2	0.6	1.7	1.6	1.0	1.9	18.0	2.2	0.0	14.6	4.1	162.0
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(95%),veh/ln	8.2	13.0	14.4	2.6	13.0	14.0	5.9	3.0	0.0	7.9	8.8	43.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	15.4	17.3	16.2	18.3	19.1	73.2	48.7	0.0	68.0	51.0	191.6
LnGrp LOS	C	B	B	B	B	B	E	D		E	D	F
Approach Vol, veh/h		2076			1556			147	A		1014	
Approach Delay, s/veh		16.8			18.4			63.9			128.1	
Approach LOS		B			B			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	20.0	9.5	75.6	11.9	23.0	15.9	69.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	16.0	11.0	63.0	11.0	19.0	30.0	44.0
Max Q Clear Time (g_c+I1), s	10.4	5.3	5.5	31.2	8.2	21.0	11.0	22.8
Green Ext Time (p_c), s	0.1	0.1	0.1	17.3	0.0	0.0	0.9	10.6

Intersection Summary	
HCM 6th Ctrl Delay	42.3
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	7	0	92	900
Future Vol, veh/h	0	38	7	0	92	900
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	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	7	0	98	957

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	682	4	0	0	7	0
Stage 1	7	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	384	1078	-	-	1612	-
Stage 1	1015	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	334	1078	-	-	1612	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	467	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1078	1612	-
HCM Lane V/C Ratio	-	-	0.038	0.061	-
HCM Control Delay (s)	-	-	8.5	7.4	0.4
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	1687	32	13	2929	210	589	135	102	110	4	246
Future Volume (veh/h)	253	1687	32	13	2929	210	589	135	102	110	4	246
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	261	1739	33	13	3020	216	607	139	105	113	4	254
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	2710	1146	184	2514	890	398	491	346	318	219	195
Arrive On Green	0.07	0.53	0.53	0.06	0.98	0.98	0.19	0.25	0.25	0.07	0.12	0.12
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	1781	1992	1403	1781	1777	1585
Grp Volume(v), veh/h	261	1739	33	13	3020	216	607	123	121	113	4	254
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1781	1777	1618	1781	1777	1585
Q Serve(g_s), s	9.0	31.5	0.4	0.0	64.0	0.3	25.0	7.3	7.9	7.1	0.3	16.0
Cycle Q Clear(g_c), s	9.0	31.5	0.4	0.0	64.0	0.3	25.0	7.3	7.9	7.1	0.3	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	179	2710	1146	184	2514	890	398	438	398	318	219	195
V/C Ratio(X)	1.46	0.64	0.03	0.07	1.20	0.24	1.53	0.28	0.30	0.36	0.02	1.30
Avail Cap(c_a), veh/h	179	2710	1146	184	2514	890	398	438	398	332	219	195
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.34	0.34	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	21.7	1.8	32.0	1.0	0.4	38.7	39.7	39.9	45.3	50.1	57.0
Incr Delay (d2), s/veh	235.4	1.2	0.0	0.1	92.1	0.2	248.9	1.6	2.0	0.7	0.2	168.1
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(95%),veh/ln	23.3	18.5	0.3	0.5	30.2	0.3	58.4	6.1	6.1	5.8	0.2	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	274.9	22.9	1.9	32.1	93.1	0.6	287.6	41.3	41.9	46.0	50.3	225.1
LnGrp LOS	F	C	A	C	F	A	F	D	D	D	D	F
Approach Vol, veh/h		2033			3249			851			371	
Approach Delay, s/veh		54.9			86.7			217.1			168.6	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.0	8.0	73.0	29.0	20.0	13.0	68.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	31.0	4.0	69.0	25.0	16.0	9.0	64.0
Max Q Clear Time (g_c+I1), s	9.1	9.9	2.0	33.5	27.0	18.0	11.0	66.0
Green Ext Time (p_c), s	0.0	1.4	0.0	18.7	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	98.5
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	1713	77	111	2937	78	194	3	79	62	3	65
Future Volume (veh/h)	52	1713	77	111	2937	78	194	3	79	62	3	65
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	1748	79	113	2997	80	198	3	81	63	3	66
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	3276	148	254	3305	87	316	12	326	107	11	77
Arrive On Green	0.07	0.87	0.87	0.08	1.00	1.00	0.08	0.21	0.21	0.10	0.10	0.10
Sat Flow, veh/h	1781	5008	226	1781	5115	135	1781	57	1537	629	106	736
Grp Volume(v), veh/h	53	1188	639	113	1986	1091	198	0	84	132	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1830	1781	1702	1846	1781	0	1594	1471	0	0
Q Serve(g_s), s	0.0	11.0	11.0	3.3	0.0	0.0	10.0	0.0	5.7	10.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.0	11.0	3.3	0.0	0.0	10.0	0.0	5.7	11.4	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.07	1.00		0.96	0.48		0.50
Lane Grp Cap(c), veh/h	184	2227	1197	254	2200	1193	316	0	338	195	0	0
V/C Ratio(X)	0.29	0.53	0.53	0.45	0.90	0.91	0.63	0.00	0.25	0.68	0.00	0.00
Avail Cap(c_a), veh/h	184	2227	1197	345	2200	1193	316	0	368	222	0	0
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.6	3.6	3.6	10.2	0.0	0.0	47.5	0.0	42.6	57.2	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.7	1.3	1.2	6.6	12.3	3.9	0.0	0.4	6.8	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(95%),veh/ln	3.0	4.8	5.6	2.3	3.6	7.3	10.3	0.0	4.1	8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	4.3	5.0	11.4	6.6	12.3	51.4	0.0	43.0	64.0	0.0	0.0
LnGrp LOS	C	A	A	B	A	B	D	A	D	E	A	A
Approach Vol, veh/h		1880			3190			282			132	
Approach Delay, s/veh		5.3			8.7			48.9			64.0	
Approach LOS		A			A			D			E	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.6	9.4	89.1	14.0	17.6	10.4	88.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	12.0	76.0	10.0	16.0	4.0	84.0
Max Q Clear Time (g_c+I1), s	7.7	5.3	13.0	12.0	13.4	2.0	2.0
Green Ext Time (p_c), s	0.4	0.1	23.7	0.0	0.1	0.0	66.7

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1789	68	0	3129	0	89
Future Vol, veh/h	1789	68	0	3129	0	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1903	72	0	3329	0	95

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	988
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	211
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	211
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	35.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	211	-	-	-
HCM Lane V/C Ratio	0.449	-	-	-
HCM Control Delay (s)	35.2	-	-	-
HCM Lane LOS	E	-	-	-
HCM 95th %tile Q(veh)	2.1	-	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1818	66	0	3129	0	75
Future Vol, veh/h	1818	66	0	3129	0	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1934	70	0	3329	0	80

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1002
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	207
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	207
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	32.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	207	-	-	-
HCM Lane V/C Ratio	0.385	-	-	-
HCM Control Delay (s)	32.9	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	1.7	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1862	73	96	2705	5	433	0	107	2	0	18
Future Volume (veh/h)	17	1862	73	96	2705	5	433	0	107	2	0	18
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1940	76	100	2818	5	451	0	111	2	0	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	3025	118	402	3932	7	549	0	231	33	2	43
Arrive On Green	0.01	0.40	0.40	0.32	1.00	1.00	0.08	0.00	0.15	0.03	0.00	0.03
Sat Flow, veh/h	1781	5042	197	1781	5263	9	3456	0	1585	97	53	1421
Grp Volume(v), veh/h	18	1309	707	100	1822	1001	451	0	111	21	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1835	1781	1702	1869	1728	0	1585	1570	0	0
Q Serve(g_s), s	0.6	40.3	40.4	0.0	0.0	0.0	11.0	0.0	8.4	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.6	40.3	40.4	0.0	0.0	0.0	11.0	0.0	8.4	1.7	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.00	1.00		1.00	0.10		0.90
Lane Grp Cap(c), veh/h	134	2042	1101	402	2543	1396	549	0	231	78	0	0
V/C Ratio(X)	0.13	0.64	0.64	0.25	0.72	0.72	0.82	0.00	0.48	0.27	0.00	0.00
Avail Cap(c_a), veh/h	163	2042	1101	402	2543	1396	549	0	378	222	0	0
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.4	27.6	27.6	26.5	0.0	0.0	56.6	0.0	51.0	61.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	1.6	2.9	0.3	1.8	3.2	9.8	0.0	1.5	1.8	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(95%),veh/ln	0.4	24.7	26.9	4.0	1.1	2.2	12.8	0.0	6.2	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	29.1	30.5	26.8	1.8	3.2	66.3	0.0	52.5	63.7	0.0	0.0
LnGrp LOS	B	C	C	C	A	A	E	A	D	E	A	A
Approach Vol, veh/h		2034			2923			562			21	
Approach Delay, s/veh		29.5			3.1			63.6			63.7	
Approach LOS		C			A			E			E	

Timer - Assigned Phs		2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s		23.0	25.0	82.0	15.0	8.0	5.9	101.1
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s		31.0	9.0	78.0	11.0	16.0	4.0	83.0
Max Q Clear Time (g_c+I1), s		10.4	2.0	42.4	13.0	3.7	2.6	2.0
Green Ext Time (p_c), s		0.6	0.1	21.4	0.0	0.0	0.0	58.8

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	1868	57	0	2864	2	0	0	81	0	0	11
Future Vol, veh/h	19	1868	57	0	2864	2	0	0	81	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	1946	59	0	2983	2	0	0	84	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2985	0	0	-	-	0	-	-	1003	-	-	1493
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	39	-	-	0	-	-	0	0	206	0	0	96
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	39	-	-	-	-	-	-	-	206	-	-	96
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	34.1	47.5
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	206	39	-	-	-	-	96
HCM Lane V/C Ratio	0.41	0.507	-	-	-	-	0.119
HCM Control Delay (s)	34.1	169.1	-	-	-	-	47.5
HCM Lane LOS	D	F	-	-	-	-	E
HCM 95th %tile Q(veh)	1.9	1.8	-	-	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1838	71	53	2102	28	619	55	235	16	14	58
Future Volume (veh/h)	56	1838	71	53	2102	28	619	55	235	16	14	58
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	1935	75	56	2213	29	652	58	247	17	15	61
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1885	585	110	2237	29	228	16	853	33	40	75
Arrive On Green	0.25	0.25	0.25	0.06	0.86	0.86	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	170	5106	1585	1781	5194	68	345	31	1585	0	78	148
Grp Volume(v), veh/h	59	1935	75	56	1449	793	710	0	247	93	0	0
Grp Sat Flow(s),veh/h/ln	170	1702	1585	1781	1702	1858	375	0	1585	226	0	0
Q Serve(g_s), s	0.0	48.0	4.8	0.0	51.6	52.3	0.0	0.0	7.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	48.0	48.0	4.8	0.0	51.6	52.3	66.0	0.0	7.1	66.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	0.92		1.00	0.18		0.66
Lane Grp Cap(c), veh/h	55	1885	585	110	1466	800	244	0	853	148	0	0
V/C Ratio(X)	1.07	1.03	0.13	0.51	0.99	0.99	2.91	0.00	0.29	0.63	0.00	0.00
Avail Cap(c_a), veh/h	55	1885	585	110	1466	800	244	0	853	148	0	0
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.13	0.13	0.13	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	72.9	48.9	32.7	59.1	8.7	8.7	39.2	0.0	16.4	35.1	0.0	0.0
Incr Delay (d2), s/veh	140.4	27.7	0.5	0.5	6.2	9.4	871.9	0.0	0.9	18.7	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(95%),veh/ln	7.3	34.9	3.5	2.5	6.0	7.3	116.0	0.0	7.6	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	213.3	76.7	33.1	59.6	14.9	18.2	911.1	0.0	17.3	53.8	0.0	0.0
LnGrp LOS	F	F	C	E	B	B	F	A	B	D	A	A
Approach Vol, veh/h		2069			2298			957			93	
Approach Delay, s/veh		79.0			17.1			680.4			53.8	
Approach LOS		E			B			F			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		70.0	8.0	52.0		70.0		60.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		66.0	4.0	48.0		66.0		56.0				
Max Q Clear Time (g_c+I1), s		68.0	2.0	50.0		68.0		54.3				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		1.6				

Intersection Summary	
HCM 6th Ctrl Delay	158.6
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	477	1586	58	11	1558	195	258	182	75	80	44	450
Future Volume (veh/h)	477	1586	58	11	1558	195	258	182	75	80	44	450
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
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	513	1705	62	12	1675	210	277	196	0	86	47	484
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, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	480	2980	108	161	1662	208	274	447		135	228	569
Arrive On Green	0.48	1.00	1.00	0.01	0.36	0.36	0.15	0.24	0.00	0.04	0.12	0.12
Sat Flow, veh/h	1781	5058	184	1781	4597	574	1781	1870	1585	3534	1856	1572
Grp Volume(v), veh/h	513	1147	620	12	1239	646	277	196	0	86	47	484
Grp Sat Flow(s),veh/h/ln	1781	1702	1837	1781	1702	1767	1781	1870	1585	1767	1856	1572
Q Serve(g_s), s	31.0	0.0	0.0	0.6	47.0	47.0	20.0	11.6	0.0	3.1	3.0	10.7
Cycle Q Clear(g_c), s	31.0	0.0	0.0	0.6	47.0	47.0	20.0	11.6	0.0	3.1	3.0	10.7
Prop In Lane	1.00		0.10	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	2006	1082	161	1231	639	274	447		135	228	569
V/C Ratio(X)	1.07	0.57	0.57	0.07	1.01	1.01	1.01	0.44		0.64	0.21	0.85
Avail Cap(c_a), veh/h	480	2006	1082	197	1231	639	274	447		245	228	569
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.22	0.22	0.22	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	0.0	28.0	41.5	41.5	55.0	42.1	0.0	61.6	51.3	17.7
Incr Delay (d2), s/veh	40.6	0.3	0.5	0.2	27.3	38.5	57.1	3.1	0.0	5.0	2.0	14.8
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(95%),veh/ln	20.8	0.1	0.3	0.5	32.3	35.8	19.4	9.7	0.0	2.7	2.7	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.8	0.3	0.5	28.2	68.8	80.0	112.1	45.2	0.0	66.6	53.3	32.5
LnGrp LOS	F	A	A	C	F	F	F	D		E	D	C
Approach Vol, veh/h		2280			1897			473	A		617	
Approach Delay, s/veh		16.6			72.3			84.4			38.8	
Approach LOS		B			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	35.1	5.4	80.6	24.0	20.0	35.0	51.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	27.0	4.0	74.0	20.0	16.0	31.0	47.0
Max Q Clear Time (g_c+I1), s	5.1	13.6	2.6	2.0	22.0	12.7	33.0	49.0
Green Ext Time (p_c), s	0.1	0.8	0.0	22.9	0.0	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	93	731	0	42	4
Future Vol, veh/h	0	93	731	0	42	4
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	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	99	778	0	45	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	870	389	0	0	778	0
Stage 1	778	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	291	610	-	-	834	-
Stage 1	413	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	275	610	-	-	834	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	391	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	8.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	610	834	-
HCM Lane V/C Ratio	-	-	0.162	0.054	-
HCM Control Delay (s)	-	-	12	9.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2	-