* Traffic Engineering

* Transportation Planning

* Transportation Research

* Intelligent Transportation Systems

* Traffic Signals & Timing

Regional Gateway Commerce Center

NWC I-8/I-10 Traffic Interchange

Casa Grande, Arizona

Master Circulation Study

Prepared for:

Casa Grande Mountain Ranch, LP

Prepared by:

Lee Engineering
3610 N. 44th Street, Suite 100
Phoenix, Arizona 85018
(602) 955-7206

March, 2014

LEE ENGINEERING

Project No. 911.04

PHOENIX
DALLAS
ALBUQUERQUE
OKLAHOMA CITY

Regional Gateway Commerce Center
NWC I-8/I-10 Traffic Interchange

Casa Grande, Arizona

MASTER CIRCULATION STUDY

Prepared for:

Casa Grande Mountain Ranch, LP
P.O. Box 15267
Phoenix, AZ 85060

Prepared by:

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Phoenix, Arizona 85018
Phone: (602) 955-7206

March, 2014

911.04

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Introduction and Summary

Introduction

This study has been prepared to analyze the access potential of the proposed Regional Gateway Commerce Center, located at the northwest quadrant of the I-8/I-10 interchange in Casa Grande, Arizona. The purpose of this study is to prepare a Master Circulation Plan that guides the subject site through its development process, helping to determine on-site and off-site roadway improvements needed to accommodate full build-out traffic demand. This circulation plan will be a changing, evolving document dependent upon tenant demand characteristics, future roadway improvements, refinements of future traffic volumes, and other site and non-site conditions. This study is being provided for the City of Casa Grande to better understand the development potential of the site and it's impacts to the adjacent roadway system prior to the time when a more formal traffic impact study is required. This master circulation plan has been prepared as a guideline for the first phase of site development, which currently has an unknown timeline associated with it. This study has made some assumptions to identify potential site needs at full build-out and identify near-term site development "triggers" to accommodate the first phase of construction that has unknown traffic demands at this time. It is assumed more detailed traffic impact studies will be required as a greater level of detail pertaining the development characteristics of the site is known.

Major Assumptions

Based on comments received from the City of Casa Grande and ADOT pertaining to a traffic impact study that was previously provided for this site, but not approved, the following major assumptions pertaining to this project are as follows:

- No City, County, or ADOT roadway improvements are planned for the foreseeable future. Any roadway improvement projects needed to provide necessary roadway capacity and to serve interim develop projects will be developer driven and developer paid.
- The only ADOT study-area project anticipated before the assumed 2030 build-out year for this site is an I-10 widening project that will add a general purpose lane to the inside of the existing mainline such that three through lanes are to be provided from the I-8 system interchange west.
- Although other site adjacent developments are anticipated within the study area, their volume impacts have not been included as part of the background traffic volume expansion. Any site contributing to the deterioration of operational performance measures within the study are expected to mitigate or at a minimum contribute to the cost associated with any roadway improvement, similar to this project.
- Analysis has been conducted for an assumed 2018 opening year of the site, a time frame used solely for the basis of expanding existing traffic volumes to a horizon year and allowing for a conservative analysis of baseline roadway conditions.
- For the site's anticipated opening year, a single access point, located at the Cornman/Henness Road alignment is planned. As part of the opening year condition, the developer plans to construct a 2-lane access road along a westerly

alignment to intersect Peart Road south of Jimmie Kerr to accommodate site traffic.

- Although additional site access points are planned, the ability to accelerate these access points to an opening year condition is constrained. Therefore, focus on the opening year aspects of this site is provided along with an evaluation of future site conditions assumed at full build-out of the site under its current plan.

Executive Summary

This report documents the assumptions and procedures used to determine roadway improvement requirements for the opening year of the site based on certain trigger values. These values were developed from the site's land use plan, it's general layout, and its trip generation characteristics at full build-out. The following summary is a result of the analysis conducted.

Site Development Description

The subject site is to develop approximately 423 acres located at the northwest corner of the I-8 / I-10 interchange in addition to dedicating about 127 acres to ADOT for the improvement of the I-8/I-10 system interchange, frontage roads, and future I-8/Henness Road Traffic Interchange. Overall, the site is planned to construct over 9.37 million square-feet of corporate headquarter office, business office, general office, general light industrial and commercial space. At full build-out, the site is anticipated to generate 71,300 daily trip ends with 10,740 trips occurring in the AM peak hour and 9,980 trips occurring in the PM peak hour.

Principal Findings

- Intersection analysis of background traffic conditions at the intersection of Jimmie Kerr Boulevard and the I-10 eastbound on-off ramps indicate the stop-controlled southbound approach (I-10 off-ramp) is expected to operate at level of service (LOS) F in both the AM and PM peak hours. Improvements to this intersection will be required at the time of site opening or prior to, if other site adjacent development is constructed within this time frame.
- Assuming only the west site access is to be constructed and improvements to the Jimmie Kerr/I-10 EB On-Off Ramp intersection are in-place, the following trigger points are identified and the level of improvement needed, based on a percentage of total site occupancy. The results indicate about 27% of site occupancy can be accommodated with a single Henness/Cornman site access (with or without the I-8/Henness TI), above this value requires additional site access.

Summary of Improvement Requirements at Opening Year,
Based on Total Site Occupancy

Percent of Total Site Occupancy	Roadway Improvements Required
West Access Roadway & Single Cornman/Henness Site Access	
0.0%	Improvement to the Jimmie Kerr / I-10 EB On-Off Ramp
up to 2.7%	None, some minor signal timing adjustments at Jimmie Kerr/Peart Road only
up to 4.5%	Improve NB Peart Road approach to Jimmie Kerr to include exclusive left, through, and right lanes. Signal modifications needed. UPRR at-grade rail crossing improvements required with modification to Peart Road.
up to 11.0%	Spot widen Jimmie Kerr to include 2 eastbound and westbound through lanes, 2 wesbound left turn lanes, and widening of soutbound Peart to 2 lanes, access roadway to be 4-lanes
up to 14.5%	Maximum capacity of the Jimmie Kerr/Peart intersection, Jimmie Kerr widened to a 4-lane roadway, improvement/signalization of the Jimmie Kerr/I-10 WB On-Off Ramp intersection.
up to 24.9%	Requires a second Jimmie Kerr intersection location. Maximum capacity of single Cornman/Henness access to/from North.
up to 26.8%	Maximum capacity of the Cornman/Henness intersection with I-8/Henness access.
up to 49.6%	Maximum potential of six-lane access roadway. Requires more than one Henness Road site access point
I-8/Henness TI	
27.4%	Amount of site occupancy that can be accommodated via the I-8/Henness TI. Requires 2nd site access off of Henness
Cox Road Access	
20.7%	Amount of site occupancy that can be accommodated via a Cox Road Access

- At full build-out, a total of 5 access points are being considered. The access points are anticipated to accommodate 11 inbound lanes and 8 outbound lanes at this time. All access points have an unknown time horizon and are dependent upon market forces and other considerations as to if and when they are to be pursued.
- It is anticipated that both the I-8/Henness TI and the Cox Road access will be required to accommodate site demand at build-out and provide efficient access to and from the adjacent freeway network. Potential direct access connections from the I-8 westbound Frontage Road and possibly the Henness Road TI westbound off-ramp may also be required.

- Internal to the site, the loop roadway should be considered as a six-lane facility to accommodate potential build-out year volumes estimated to exceed 3,000 vehicles during peak hour conditions. Initial loop road construction may be appropriate as a 4-lane facility, however, underground facilities and future intersection requirements should consider the wider ROW need at this time.
- The ability to channelize inbound and outbound turn movements at site access points will promote vehicle flow and reduce delays and queues. Use of roundabouts at internal intersections with the loop roadway could eliminate potential vehicle back-ups at high volume locations within the site and promote continuous flow. Traffic signals could be considered at the more minor loop road intersections that are not major ingress/egress intersections to help promote truck movements, left turn movements and help create gaps in the traffic stream.
- The ability to manage the trips generated from the corporate headquarter land use will have a significant impact to the operation of the site's internal roadway operation. Estimates show over half of all site trips are to be generated from these three lots (5.5 million SF of office space). Options to minimize the traffic generated from these lots on the site's internal loop road are needed in the ultimate condition. Off-site and/or on-site parking areas adjacent to direct access ramps with bus shuttle service, providing direct access to/from the corporate headquarters land uses that do not utilize the internal loop road, or other means to minimize all internal site traffic is needed in the ultimate condition to operate in an efficient manner.

Study Area Conditions

Study Area

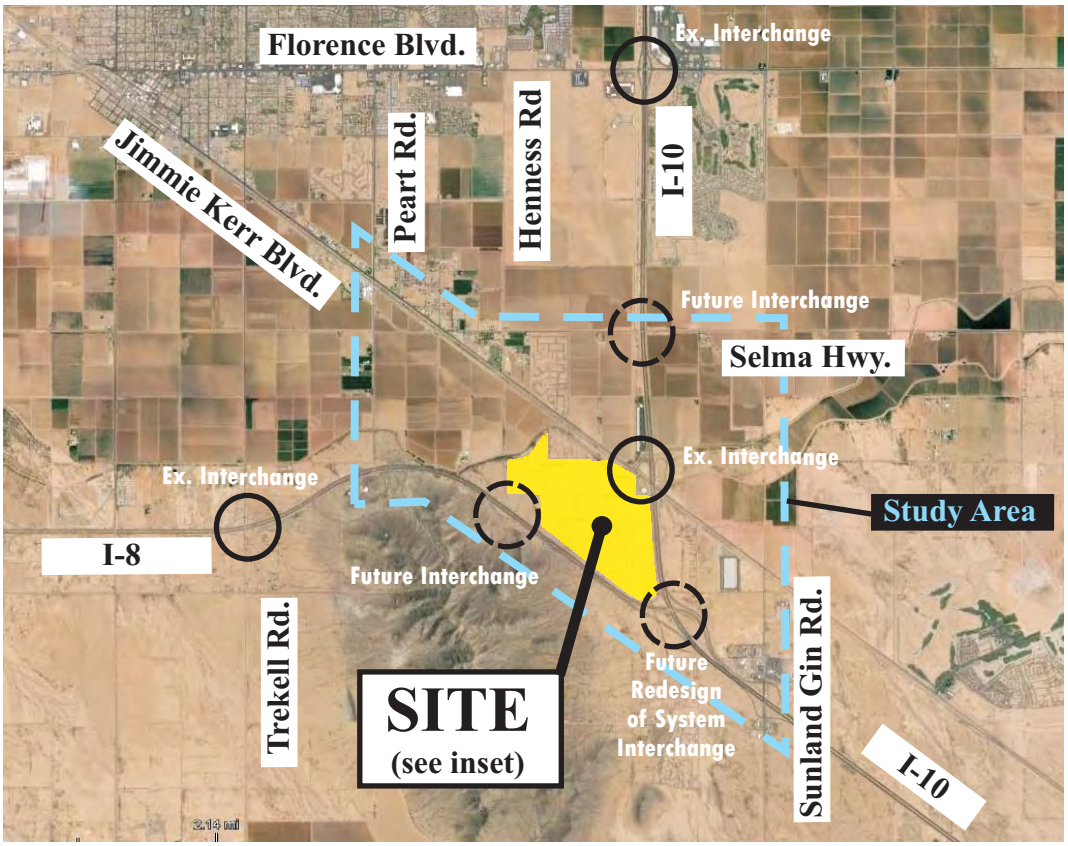
The proposed development is located a few miles southeast of the downtown Casa Grande, located at the northwest corner of the I-8/I-10 interchange area. The influence area for the approximate 423 acre Regional Gateway Commerce Center site is along the Jimmie Kerr Boulevard between Trekell Road and Sunland Gin Road and the access points/routes onto I-8 and I-10 accommodating both local and regional traffic demand. **Figure 1** is provided showing a vicinity map of the general study area, the existing roadway network, and the future I-8/Henness Road Traffic Interchange (TI), I-10/Selma Highway TI, and I-8/I-10 System Interchange area that currently do not have a time-frame associated with their construction. The study area is for this project is identified to be bounded by:

- West: Trekell Road
- North: Selma Highway/Jimmie Kerr Boulevard
- East: Sunland Gin Road
- South: I-8

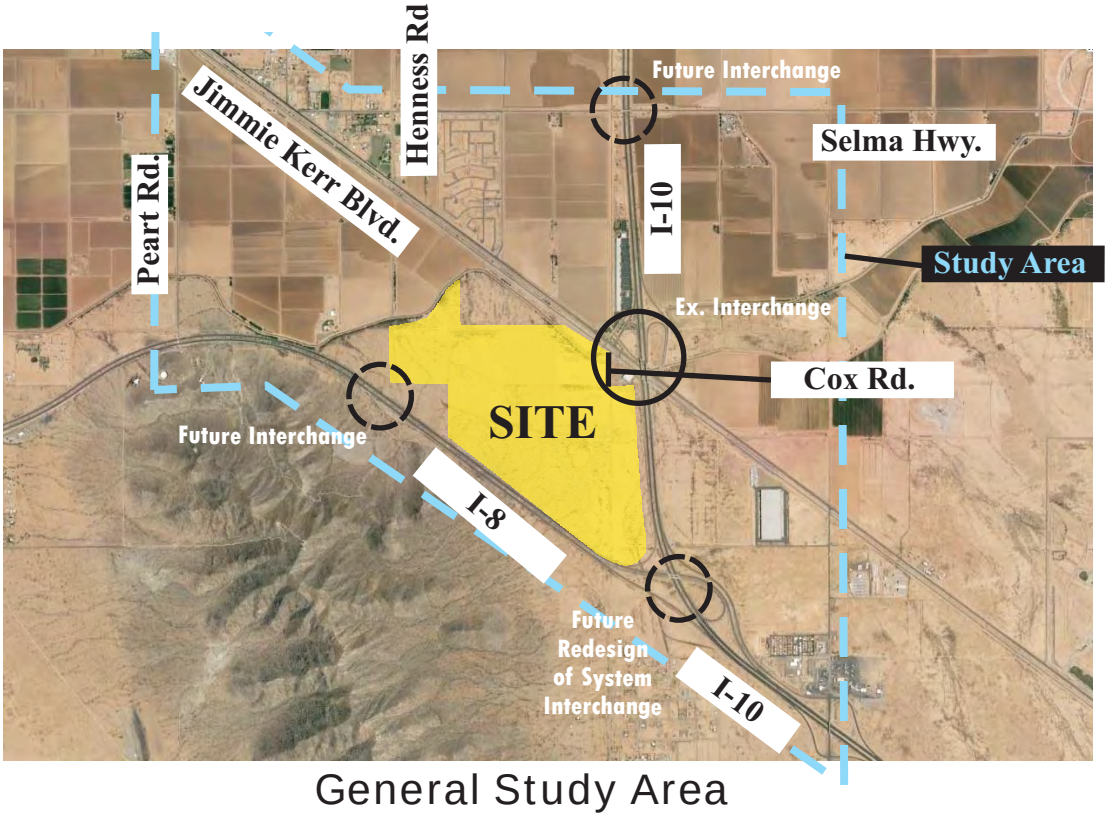
Existing and Proposed Development in the Study Area

Existing land uses in the study area are generally rural in nature consisting mostly of agriculture areas, areas of undeveloped land, low density residential dwellings, and some small commercial developments that can be considered low volume trip generators. The subject site was partially utilized as a campground with its remaining area undeveloped. The existing land uses adjacent to the site are highlighted below.

- North – Vacant commercial building (furniture outlet store) south of Jimmie Kerr Boulevard off of Cox Road and a mostly vacant Outlets at Casa Grande shopping center on the north side of Jimmie Kerr just west of I-10 at the intersection at Tanger Drive.
- East – The I-10 corridor. East of the I-10 corridor vacant/agricultural areas with a partially occupied distribution center and an apparent vehicle impound lot, both having access only onto Sunland Gin Road south of Jimmie Kerr.
- South – The I-8 corridor. South of the I-8 corridor low density residential and mostly undeveloped land.
- West – Agricultural/undeveloped areas.



Site Location



General Study Area

Not to scale

Master Circulation Plan
Regional Gateway Commerce Center

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Vicinity Map

Figure 1

The City of Casa Grande (City) has identified the following projects near the subject site that have the potential of developing in the near future. Although no specific traffic impact studies have been provided for the first three projects listed, the following information for the developments is noted:

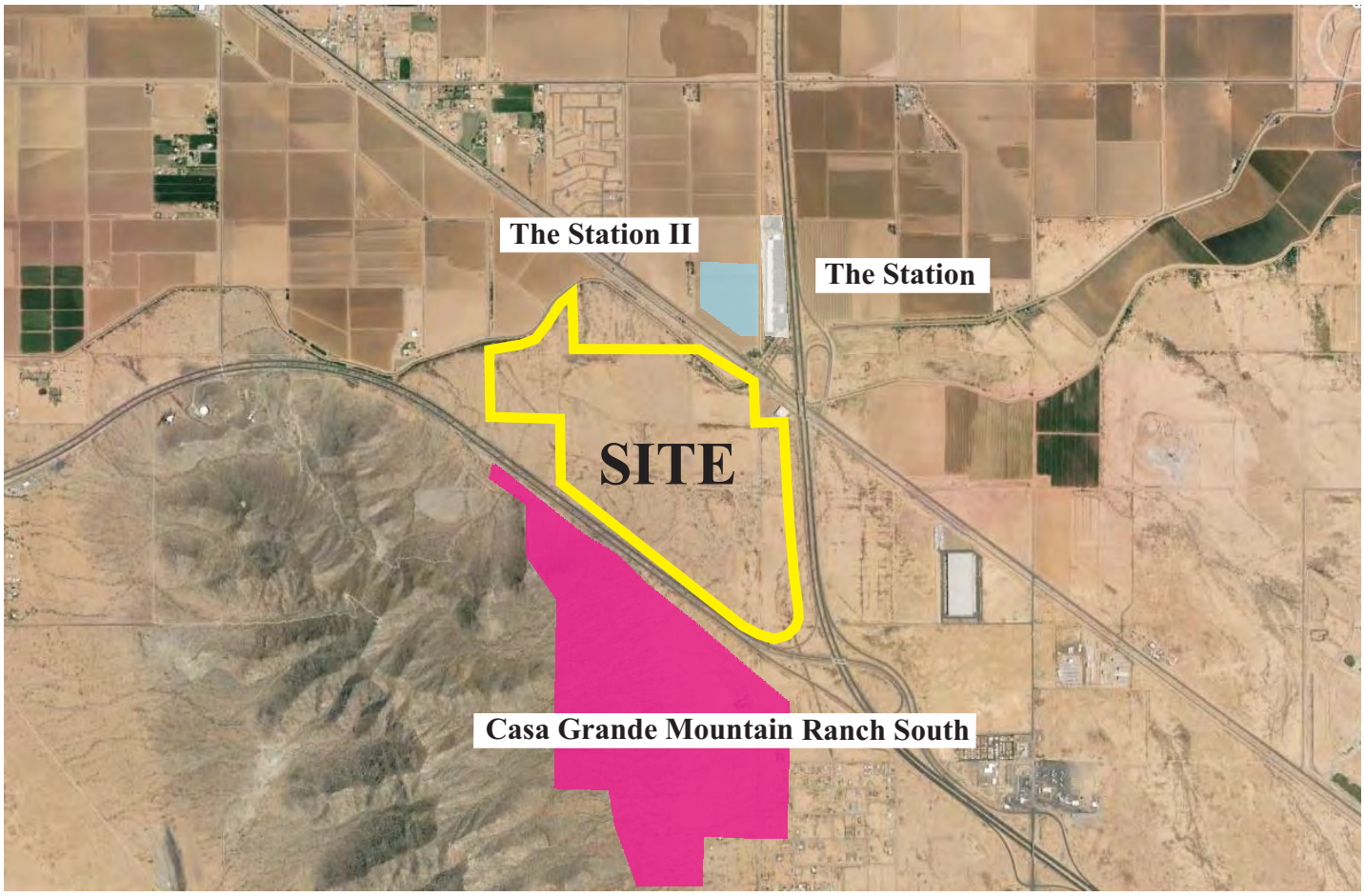
1. An auction house, SEC of Jimmie Kerr Boulevard and I-10. This site is to auction large machinery, farm-related equipment, and other associated items. This site is only projected to be open during weekend periods and not projected to have a significant impact to study area traffic volumes.
2. The Station, NWC of Jimmie Kerr Boulevard and I-10. This project is to redevelop the existing 187,000 SF outlet mall area as a destination for home improvement type offerings. For the purposes of trip generation, this site will be considered a Factory Outlet Center.
3. The Station II, west of the Station off of Jimmie Kerr Boulevard. A 34-acre retail area with a hotel and multi-family residential on-site.
4. Casa Grande Mountain Ranch South, the sister property to the current subject property to be located on the south side of I-8 and west of I-10. A traffic report has been previously provided for this site (by Lee Engineering, 2006) and is identified to be a viable project noting over 2,300 residential housing units along with commercial, a resort hotel, and specialty retails areas are projected that would supplement the growth of the subject site. In total, this site is estimated to generate 38,000 daily trips.

Proposed development locations for sites 2, 3, and 4 are highlighted graphically in **Figure 2.**

Existing Roadways and Traffic Control

The physical transportation characteristics of the site adjacent roadways consist of the following:

- I-8 and I-10 – The two site adjacent freeways are divided two-lane directional facilities providing access to the Phoenix, Tucson, and Western Arizona/Southern California areas. A full access I-10 interchange at Jimmie Kerr Boulevard is anticipated to accommodate the majority of regional trips. The interchange is located about 1-mile north of I-8 and has both of its eastbound and westbound on and off ramps located on the north side of Jimmie Kerr, operating as separate minor-street stop controlled intersections. At this time, regional I-8 traffic to/from the west can use the closest site interchange at Trekell Road, 3 miles west of I-10. The single lane off-ramp approaches to Trekell Road are minor-street stop controlled locations. Depending upon site accessibility via Cox Road at the Jimmie Kerr/I-10 EB intersection and destination within the subject site, a portion of I-8 motorists may choose to by-pass the Trekell interchange in favor of the I-10/Jimmie Kerr interchange as it would provide for a faster and more convenient route. Eventually, the future I-8/Henness Road TI will provide for a more convenient access for regional traffic to/from the east and west.



Not to scale

Master Circulation Plan
Regional Gateway Commerce Center

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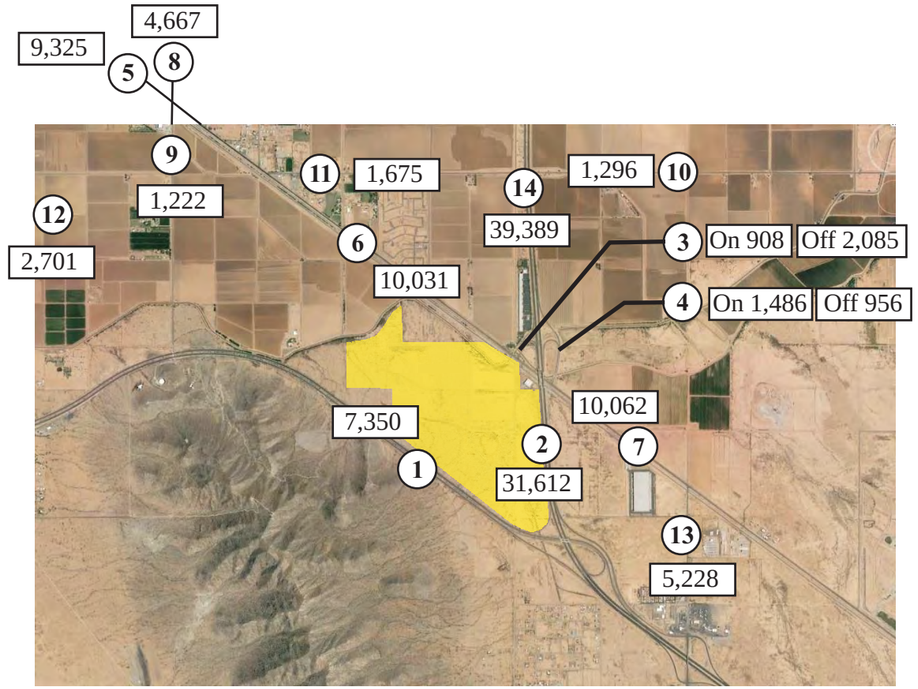
Site Adjacent Developments

Figure 2

- Jimmie Kerr Boulevard (SR 84) – A two-lane facility on a northwest/southeast alignment parallel to the Union Pacific Railroad providing access between downtown Casa Grande and the City of Eloy to its east. This roadway is identified as a City Principal Arterial having a continuous center two-way left turn lane west of its intersection with Selma Highway and east of Tanger Drive. The roadway has a speed limit of 45 mph near its I-10 interchange and 50/55 mph west of this location prior to its approach into Casa Grande. Ultimately, this roadway is proposed as a 6-lane facility.
- Trekell Road - A two-lane roadway south of Jimmie Kerr Boulevard and identified as a City Principal and a regionally significant roadway providing access between the downtown area of Casa Grande and I-8. The roadway currently has a posted speed limit of 50 mph. This roadway is anticipated to capture a portion of I-8 site traffic to/from the west until the I-8/Henness Road TI opens (or site accessibility via Cox Road) where it will no longer be an attractive option to site-related motorists.
- Peart Road - Identified as a City Principal Arterial, although south of Jimmie Kerr Boulevard it provides access to only a few single family homes, a park, agricultural areas, and some low trip generating agricultural businesses. The posted speed limit currently is 45 mph on this two-lane facility. North of Jimmie Kerr, the roadway continues as a two-lane facility until reaching Early Road, about 0.6 miles north of Jimmie Kerr, where it widens to a four-lane facility heading toward Florence Boulevard.
- Henness Road, Selma Highway Extension, and Cornman Road south of Jimmie Kerr Boulevard currently do not exist or exist only as unpaved, low-volume agricultural roads. None of the roadways extend across Jimmie Kerr at this time.
- Cox Road – This two-lane roadway is the south leg of the I-10 eastbound on/off ramp at the Jimmie Kerr Boulevard intersection providing access to a currently vacant furniture outlet building, the previous Buena Tierra Campgrounds, and the location of the subject site. This roadway is paved with flashing light signals and automatic gates at its highway-rail grade crossing of the Union Pacific rail line, located about 150 feet south of Jimmie Kerr Boulevard. Upgrades to this rail crossing/roadway will be needed if Cox Road is to be used for site access.

Lane configurations, traffic control, AM and PM peak hour intersection turning movement volumes at the existing major roadway intersections within the study area and daily traffic volumes of study area roadway segments are shown in **Figure 3.**



	Roadway	Segment	Daily	Volume AM Pk	PM Pk	Source
1	I-8 EB	Trekell to I-10	3,675	230	235	Henness Road/I-8 TI Report, 2010
2	I-8 WB	Trekell to I-10	3,675	210	210	Henness Road/I-8 TI Report, 2010
	I-10 EB	Jimmie Kerr to I-8	15,806	1,106	1,217	Henness Road/I-8 TI Report, 2010
3	I-10 WB	Jimmie Kerr to I-8	15,806	1,106	996	Henness Road/I-8 TI Report, 2010
	I-10 EB On-Ramp	From Jimmie Kerr	908	84	87	City of Casa Grande, 2011
4	I-10 EB Off-Ramp	To Jimmie Kerr	2,085	158	231	City of Casa Grande, 2011
	I-10 WB On-Ramp	From Jimmie Kerr	1,486	133	135	City of Casa Grande, 2011
5	I-10 WB Off-Ramp	To Jimmie Kerr	956	117	91	City of Casa Grande, 2011
	Jimmie Kerr EB	E. of Trekell	3,793	290	369	City of Casa Grande, 2011
	Jimmie Kerr WB	E. of Trekell	3,815	260	364	City of Casa Grande, 2011
6	Jimmie Kerr EB	Selma Hwy. to I-10	5,185	301	371	City of Casa Grande, 2011
	Jimmie Kerr WB	Selma Hwy. to I-10	4,846	490	395	City of Casa Grande, 2011
7	Jimmie Kerr EB	E. of I-10	5,275	295	361	City of Casa Grande, 2011
	Jimmie Kerr WB	E. of I-10	4,787	505	400	City of Casa Grande, 2011
8	Peart NB	N of Jimmie Kerr	2,239	188	193	City of Casa Grande, 2011
	Peart SB	N of Jimmie Kerr	2,428	130	216	City of Casa Grande, 2011
9	Peart NB	S of Jimmie Kerr	668	49	67	City of Casa Grande, 2011
	Peart SB	S of Jimmie Kerr	554	44	48	City of Casa Grande, 2011
10	Selma Highway EB	E. of I-10	623	42	66	City of Casa Grande, 2011
	Selma Highway WB	E. of I-10	673	60	60	City of Casa Grande, 2011
11	Selma Highway EB	E. of Jimmie Kerr	798	52	85	City of Casa Grande, 2011
	Selma Highway WB	E. of Jimmie Kerr	877	79	76	City of Casa Grande, 2011
12	Trekell NB	S of Selma Hwy	1,254	122	88	City of Casa Grande, 2008
	Trekell SB	S of Selma Hwy	1,447	110	132	City of Casa Grande, 2008
13	Sunland Gin NB	S of Jimmie Kerr	2,621	217	212	City of Casa Grande, 2011
	Sunland Gin SB	S of Jimmie Kerr	2,607	144	204	City of Casa Grande, 2011
14	I-10 EB	N of Jimmie Kerr	19,750	1,254	1,084	Henness Road/I-8 TI Report, 2010
	I-10 WB	N of Jimmie Kerr	19,639	1,018	1,471	Henness Road/I-8 TI Report, 2010

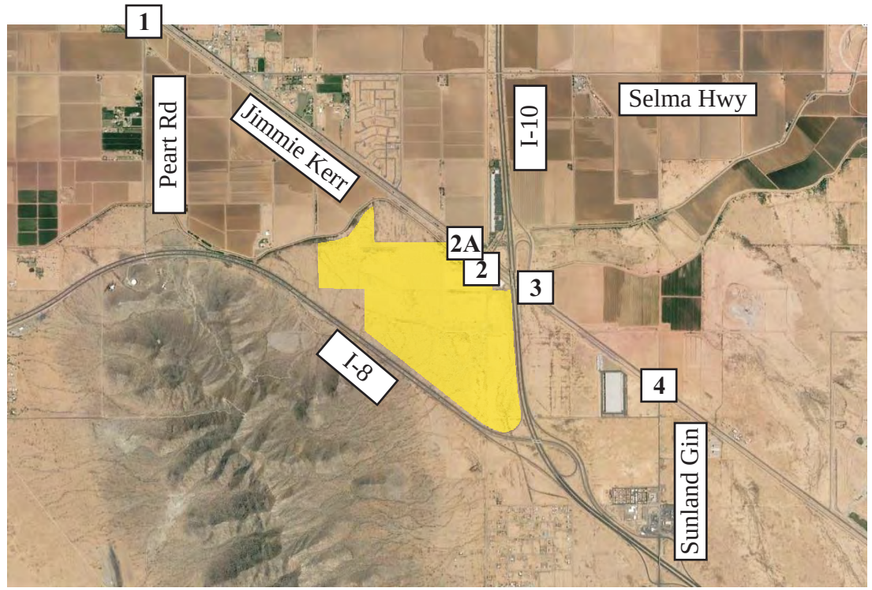
Legend

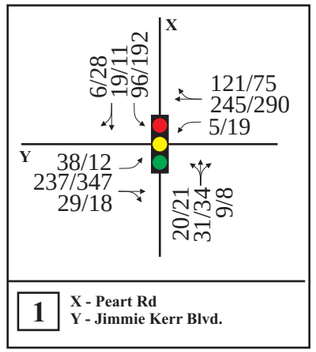
(X) - ATR Count Location City/ADOT

[X] - TMC Count Location City/Developed

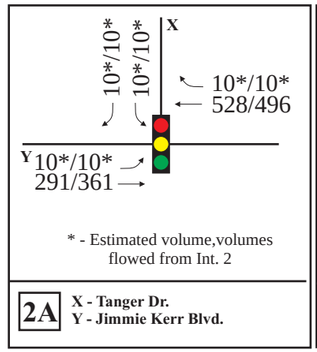
↰ ↱ - Existing Lane Configuration

XX /XX



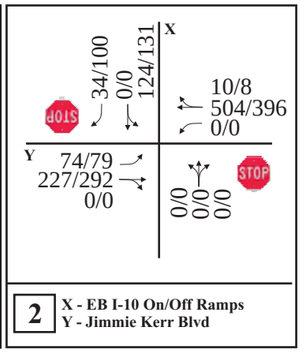


1 X - Peart Rd
Y - Jimmie Kerr Blvd.

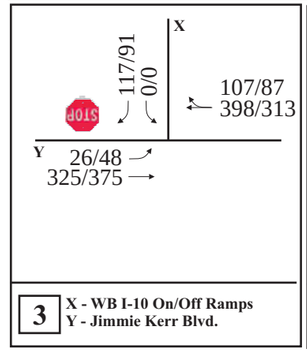


* - Estimated volume,volumes flowed from Int. 2

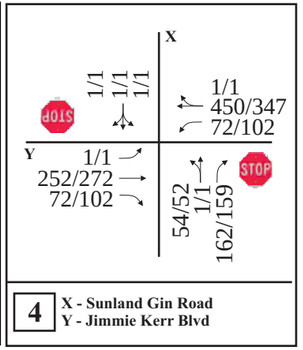
2A X - Tanger Dr.
Y - Jimmie Kerr Blvd.



2 X - EB I-10 On/Off Ramps
Y - Jimmie Kerr Blvd



3 X - WB I-10 On/Off Ramps
Y - Jimmie Kerr Blvd.



4 X - Sunland Gin Road
Y - Jimmie Kerr Blvd

Turn volumes at this location have been estimated.

Not to scale

Master Circulation Plan
Regional Gateway Commerce Center

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Existing Roadway, Traffic Control, and Traffic Volume Conditions

Figure 3

Proposed Site Access Locations and Routes

A copy of the site's color-coded land use layout plan is provided in **Figure 4**. This figure also indicates site access locations and the opening year travel patterns anticipated. The figure shows the progression of potential site access need, an orange box being the initial opening year access (Access 1), yellow boxes (Access 1A and 2) indicating near-term access potential, and the light purple boxes (Access 3, 4, and 5) being a more long-term access options. For the opening year, only the west access (Access 1) is certain as the site developer will construct the west access road from its site entrance at Cornman Road along the Henness Road and future Selma Highway alignments to Peart Road (highlighted in thick orange line work, left side of figure).

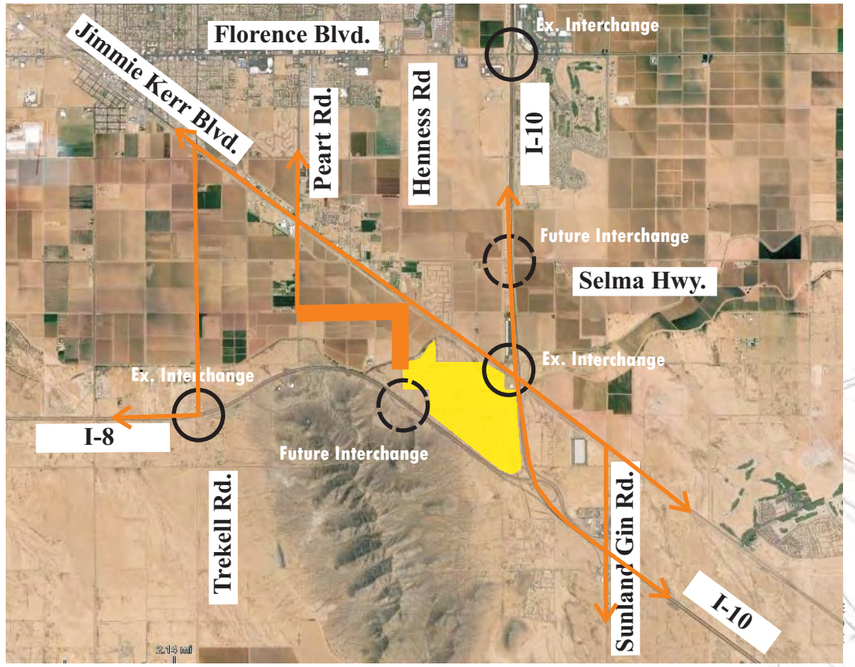
Proposed Access Points

1. Opening Year, Henness Road /Cornman Road
1A. Future Year, I-8 / Henness Road Traffic Interchange (site access via Henness / Cornman)
2. Future Year, Jimmie Kerr Boulevard / I-10 EB On-Off Ramps / Cox Road
3. Future Year, Direct Access to/from the I-8 and/or I-10 WB Frontage Road
4. Future Year, I-8 Underpass to development south of I-8
5. Future Year, Direct Access I-8/ I-10 WB Ramp

Proposed Routing

Opening Year – Assuming site access is only available via the Henness/Cornman route, the opening year travel routes are described below:

- To/From I-8 west (regional traffic) – Use of I-8/Trekell interchange, north to the Trekell/Jimmie Kerr intersection, east to the Jimmie Kerr/Peart intersection, then south to access the site.
- To/From I-10 east (regional traffic) – Use of the I-10/Jimmie Kerr interchange, west to the Jimmie Kerr/Peart intersection, then south to access the site.
- To/From I-10 north/west (regional traffic) – Use of the I-10/Jimmie Kerr interchange, west to the Jimmie Kerr/Peart intersection, then south to access the site. Some I-10 users may travel an I-10/Florence/Peart Road route to access the site.
- To/From Casa Grande Area north and west (local traffic) – Use of Jimmie Kerr or Peart Road to the Jimmie Kerr/Peart intersection, then south to access the site.
- To/From Eloy area or points east (local traffic) – Use of Jimmie Kerr to Peart Road to the site.
- To/From Arizona City or points south (local traffic) – Use of Sunland Gin Road to Jimmie Kerr, then west to Peart Road to access the site.



Opening Year Travel Routes

CONCEPTUAL LOOP ROAD ALIGNMIENT.
FINAL LAYOUT TO BE APPROVED WITH
SITE DEVELOPMENT/ SUBDIVISION PLAT.
PROPERTY OWNER HAS TENTATIWELY
AGREED TO ALIGNMENT

LAND USE SUMMARY	BEFORE ADOT EXPANSION OF I-8	AFTER ADOT EXPANSION OF I-8
COMMERCIAL:	8.8 AC	8.8 AC
BUSINESS PARK:	44.2 AC	44.2 AC
LIGHT INDUSTRIAL:	25.0 AC	15.0 AC
GARDEN OFFICE/ LIGHT INDUSTRIAL:	194.2 AC	194.2 AC
GARDEN OFFICE:	34.7 AC	34.7 AC
CORPORATE OFFICE:	161.7 AC	101.1 AC
OPEN SPACE:	8.9 AC	8.9 AC
TOTAL NET DEVELOPABLE:	477.5 AC	406.9 AC
CORNMAN LOOP ROAD ROW:	28.2 AC	28.2 AC
HENNESS ROAD ROW:	3.2 AC	3.2 AC
INTERIOR LOCAL ROW:	16.0 AC	15.6 AC
PROPOSED PROJECT ROW:	47.4 AC	47.0 AC
FUTURE ADOT ROW:		71.0 AC
TOTAL SITE AREA	524.9 AC	524.9 AC

Legend

X - Access Location
Orange (Opening Year)
Yellow (Near-Term Access)
Purple (Long-Term Access)

- Opening Year Travel Routes

- Paved Access Roadway to be constructed by Developer for opening year.

Notes:
Site trips to from the I-8 / Henness TI (Access 1A) to enter site via Access 1.

REGIONAL GATEWAY COMMERCE CENTER CASA GRANDE, AZ MASTER LANDUSE PLAN

PREPARED FOR: CASA GRANDE MOUNTAIN RANCH LIMITED PARTNERSHIP, GEORGE CHASSE - GENERAL PARTNER
DATE: 6-20-13

SCALE: 1" = 400' (GP JOB# 11027) 0' 200' 400' 800' 1200' NORTH

GILMORE PARSONS
LAND DESIGN GROUP
2211 N. 7th Street, Phoenix, Az 85006
T 602.266.5622 F 602.266.5707
www.gregilmore.com

Not to scale

Master Circulation Plan
Regional Gateway Commerce Center

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Proposed Land Uses, Site Access Locations, and Opening Year Access Routes

Figure 4

Future Year - The Cox Road access is being considered to provide more efficient ingress/egress to the interstate system and motorists using Jimmie Kerr Boulevard. Dependent upon access need of potential site businesses, the amount of on-site development and timing of the I-8/Henness Road interchange, the Cox Road access offers the potential of accommodating a significant amount of site traffic demand, independent of any network modifications associated with a new Selma Highway TI. Improvements to the UPRR crossing and Jimmie Kerr/I-10 intersections can be anticipated if this access is utilized.

Future Year – As the site continues to grow, additional access points are anticipated to help accommodate increased site-related demand by providing alternative access points to/from the south and the interstate system helping to alleviate traffic demand at the other access points. No additional access points outside of the five identified are being considered at this time.

Near-Term and Long-Term Transportation Improvements

At this time, no near-term transportation system improvements are being considered by the City, County, or State prior to the opening year of the site. City and ADOT representatives have identified that any near term roadway improvements within the study area will likely be developer driven and developer paid.

Previously, the City of Casa Grande in their 2006 Small Area Transportation Study (CGSATS) identified a number of study area improvements targeted for year 2020, such as the widening of Jimmie Kerr Boulevard from Sunland Gin Road to Peart Road to a six-lane facility, are not being considered at this time due to reduced income from the economic/development downturn in recent years. Similarly, County and State TIP study area projects identified for future years have also been extended, modified or eliminated.

The following improvements were previously identified with a future horizon year beyond 2020 and are still assumed to be viable projects, however, the estimated build dates are now unknown. No major study area projects were identified within the latest County CIP or State STIP literature for the study area. Only the first project below is identified to have a known timeline.

1. ADOT (*from previous CIP publication*) – I-10 widening project (I-10 Widening, Early Road to I-8). Previous CIP documentation had targeted this project for a mid-2020's construction time frame but has since been removed and changed. Recent ADOT comments identify this project will only add one directional lane to the inside of the I-10 corridor in this area. Previously, this project was to also include an I-10/Selma Highway TI, elimination of the I-10/Jimmie Kerr interchange, and construction of frontage roads between Selma Highway and Jimmie Kerr Boulevard for continued access. The time frame for construction of this project is unknown, but ADOT has identified that a 2030 completion data can be assumed for the widening.

2. ADOT (from the *I-10 Corridor Study, I-8 to Tangerine Road*) — As part of the I-10 corridor improvements associated with this project, work elements of this project are planned to include the construction of a new I-8/I-10 System Interchange to improve access between the two interstates, inclusion of an eastbound and westbound frontage road network between Sunland Gin Road and Henness Road, and a new traffic interchange at Henness Road. This project has an unknown construction time frame, recently estimated by ADOT to be beyond year 2030. It is understood that the I-8/Henness Road TI portion of this project could be fast-tracked by the developer, depending upon their participation in the cost of construction.

3. ADOT (from the *I-8/Henness Road TI Change of Access Report*) — Construction of an I-8/Henness Road interchange. The time frame for construction of this project is unknown and currently going through an evaluation/approval process. Construction of this TI was to be part of a planned I-8/I-10 system interchange improvement project. Currently, the system interchange improvements have an unknown construction year time horizon, but the site developer may wish to accelerate the construction of the I-8/Henness Road interchange portion. The need for its acceleration is dependent upon securing tenant support, need to facilitate site access, and need to provide efficient access between Jimmie Kerr Boulevard and areas south of I-8 including the Casa Grande Mountain Ranch development.

4. Pinal County (2006 CGSATS, *Streets CIP for New Developments and Development Fees)* – Fee development based on the improvement of 34 lane-miles of Selma Highway in IFA 2, which includes the roadway section west of I-10. It is assumed that Selma Road would be constructed to a 4-lane facility and would be a grade separated over the Union Pacific Railroad. The time frame for construction of this project is currently unknown and would likely be delayed until the future ADOT construction of the I-10/Selma Highway TI, the I-8/I-10 system interchange project, and/or traffic demand with the I-8/Henness Road TI require such action.

For the purposes of this study, only the I-10 widening project is anticipated for the build-out year of this site.

Analysis of Existing Conditions

Traffic Volumes

Historical

Historical traffic volumes, in the form of daily (24-hour) and peak hour counts, were obtained for the adjacent roadway segments as reported by the City of Casa Grande, ADOT, or as identified in the Henness Road/I-8 Traffic Interchange report (April 2013) submitted to ADOT by Kimley-Horn. The location of applicable traffic count data for the most recent count year has been summarized in Figure 3. No new 24-hour volumes have been collected as part of this project.

AM and PM Peak Hour Intersection Count Data

To confirm traffic volume levels and compare turn movement percentages to historically collected data, a 30-minute turning movement check count was conducted at the Jimmie Kerr Boulevard intersections with the I-10 EB and WB on/off ramps and at the intersection of Jimmie Kerr and Peart Road. From the comparison of count data obtained at these intersections in 2006, the recent 2013 hourly volume entering the intersection was lower by approximately 50% from 2006 peak hour values and 2011 City volume data. This high volume reduction could partially be attributed to the closing of the near-by outlet mall facility (driveway located 450 feet west of this intersection at the signalized intersection of Tanger Drive) in addition to a seasonal variation component. Along the freeway segments, it is assumed that the latest traffic volumes identified in the I-8/Henness Road TI Change of Access Report are current.

Noting data can be skewed when very low volumes are adjusted through an overall growth factor, existing AM and PM peak hour intersection turning movement volumes at Jimmie Kerr with the I-10 ramps and at Peart Road were calculated by taking the 2011 daily traffic volumes as collected by the City and applying a turn movement percent based on collected volume data from 2006 or from the 2011 volume data. The results of these calculations are also shown in Figure 3 along with the identified lane configurations and traffic control. Other intersections in the area along Jimmie Kerr Boulevard are not identified to be major intersections, highlighted as being low volume locations at "t-type" minor-street stop controlled intersections (a result of access to I-10 and I-8 available via other routes to and from the residential and commercial areas of Casa Grande). The only other signalized intersection in the study area is the intersection of Jimmie Kerr with Tanger Drive, virtually having negligible turn volume demand with the closing of the outlet mall now with only one or two small business operations remaining. Volume distribution at this intersection of Jimmie Kerr Boulevard and Sunland Gin Road has been estimated due to a lack of intersection turn movement volume data found for these locations.

Capacity Analysis of Existing Conditions

For the existing AM and PM peak hour conditions, study area intersections were analyzed based on the methodologies presented in the Highway Capacity Manual 2010 and evaluated using the Synchro software package (version 8). To provide an indication

of intersection performance, signalized and unsignalized intersections are typically reported in terms of levels of service (LOS). The analysis of signalized intersections is based on the approach control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay for all movements. Unsignalized stop-controlled intersection analysis is based on the minor street approach or critical movement, whichever is applicable. The capacity criteria for signalized and unsignalized intersection analysis are presented in **Table 1**.

Table 1. Level of Service Criteria for Signalized/Unsignalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	
LOS	**Signalized**	**Unsignalized**
A	≤10.0	≤10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	>80.0	>50.0

Source: *Highway Capacity Manual, HCM 2010*, Transportation Research Board, 2000.

Additional performance measures such as volume to capacity (v/c) ratios and queue lengths also provide an indication of operations. For example, at two-way stop controlled intersections, main street traffic volumes may impose longer average delays for a small number of side-street vehicles, thus creating vehicle delays which correspond to a poor level of service. Motorists and agencies will typically accept longer delays (LOS E or F) if gaps in the traffic stream are anticipated within a reasonable timeframe and the side street traffic volumes do not warrant a traffic signal. As a general guide, gap acceptance thresholds for the longer delay values can be defined when the v/c ratios are under 0.80, which corresponds to 80 percent capacity usage for that movement. Therefore, a traffic movement with a poor level of service but with a v/c value under 0.80 will be considered as operating acceptably. This is a typical condition of many low volume driveway and roadway intersection locations along busier major streets that would not warrant a change in traffic control or is associated with a low volume signalized turn movement at a signal that has a long cycle length.

As part of the City's Small Area Transportation Study, daily roadway capacities were based on roadway functional class and level of service based on maximum volume-capacity ratios. The following capacities and LOS used in that report are indicated below:

Functional Classification	Daily Per Lane Capacity	LOS	Maximum V/C
Arterial	8,700	A	0.30
Collector	7,500	B	0.54
Freeway Ramps	8,000	C	0.75
		D	0.90
		E	1.00
		F	>1

In review of City and ADOT guidelines, the City of Casa Grande requires intersections and roadways that operate at LOS D or better without the development to be mitigated back to LOS D with site traffic. Where the highway/intersection will operate below LOS D in the horizon year(s) without the development traffic, the traffic impact of the development is to be mitigated to provide the same LOS at the horizon year(s). ADOT has similar mitigation requirements, but requires mitigation to LOS C instead of LOS D.

Using the AM and PM peak hour traffic volumes, the intersection controls and lane configurations shown in Figure 3 along with estimated signal timing inputs from field observation at the Jimmie Kerr/Peart intersection, and use of peak hour factors as outlined by ADOT, the information from both intersections were input into the Synchro software program to determine operational conditions of the study intersections. The results of the 2013 existing conditions are shown in **Table 2**. All capacity output sheets are contained in the appendix.

From the results shown in Table 2, the following can be identified:

- The signalized intersection of Jimmie Kerr and Peart is expected to operate in an overall acceptable service level (LOS D or better) in both the AM and PM peak hours with all individual movements operating at LOS B or better.
- At the I-10 stop controlled ramps with Jimmie Kerr, the only movement operating at an elevated delay level is the eastbound (southbound) I-10 Off-ramp left turn movement to eastbound Jimmie Kerr. Both AM and PM peak hours are identified to operate at a LOS F with v/c ratios just under 0.80. Although based on operational criteria stated earlier, this movement would be considered to operate barely within the acceptable range. ADOT considers this movement as operating in an unacceptable manner. An obvious mitigation measure for this existing condition would be to signalize the intersection.
- All movements at the Jimmie Kerr and Sunland Gin intersection are estimated to operate in an acceptable manner in both the AM and PM peak hours
- All roadway segments within the study area operate at LOS C or better under current traffic volume conditions.

Table 2. Capacity Analysis Summary, 2013 Existing Conditions Intersections

	EXISTING CONDITIONS							
	AM Peak				PM Peak			
Intersection / Movement	LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue
Int 1. Jimmie Kerr / Peart (S)	B	13.9			B	18.3		
EB Left	B	17.7		<50	B	15.7		<50
EB Thru/Right	B	10.6		150	B	19.1		261
WB Left	B	18.0		<50	B	15.7		<50
WB Thru/Right	B	16.1		254	B	19.7		249
NB Left/Thru/Right	B	12.4		<50	B	11.1		<50
SB Left	B	14.7		62	B	19.4		134
SB Thru/Right	B	12.0		<50	A	7.2		<50
Int 2. Jimmie Kerr / Cox / I-10 EB On/Off Ramps (MSS)								
EB Left	A	9.1		<50	A	8.6		<50
EB Thru/Right	-	-		-	-	-		-
WB Left	-	-		-	-	-		-
WB Thru/Right	-	-		-	-	-		-
NB Left/Thru/Right	-	-		-	-	-		-
SB Left/Thru	F	63.3	0.77	130	F	59.3	0.79	148
SB Right	B	12.3		<50	B	11.8		<50
Int 3. Jimmie Kerr / I-10 WB On/Off Ramps (MSS)								
EB Left	A	8.8		<50	A	8.5		<50
EB Thru	-	-		-	-	-		-
WB Thru/Right	-	-		-	-	-		-
SB Left	-	-		-	-	-		-
SB Right	B	13.5		<50	B	11.7		<50
Int 4. Jimmie Kerr / Sunland Gin (MSS)								
EB Left	A	8.5		<50	A	8.1		<50
WB Left	A	8.1		<50	A	8.2		<50
NB Left/Thru	C	22.3		<50	C	22.0		<50
NB Right	B	10.8		<50	B	11.0		<50
SB Left/Thru/Right	C	19.9		<50	C	19.3		<50

Notes: (S) = Signal, (MSS) = Minor Street Strop
V/C shown if LOS E or F
Queue is the reported 95th percentile lenght in feet

Roadway Segments

Roadway Segment	Facility Type	Daily Volume	Facility Capacity	V/C	LOS
Jimmie Kerr East of Peart	2 Lane Arterial	10,030	17,400	0.58	C
Jimmie Kerr East of Tanger	2 Lane Arterial	10,030	17,400	0.58	C
Jimmie Kerr East of I-10	2 Lane Arterial	10,062	17,400	0.58	C
Selma W of I-10	2 Lane Arterial	1,675	17,400	0.10	A
Peart N of Jimmie Kerr	2 Lane Arterial	4,667	17,400	0.27	A
Peart S of Jimmie Kerr	2 Lane Arterial	1,222	17,400	0.07	A
Trekell S of Jimmie Kerr	2 Lane Arterial	2,701	17,400	0.16	A
I-10 WB On-Ramp at Jimmie Kerr	1 Lane Ramp	908	8,000	0.11	A
I-10 WB Off-Ramp at Jimmie Kerr	1 Lane Ramp	956	8,000	0.12	A
I-10 EB On-Ramp at Jimmie Kerr	1 Lane Ramp	1,486	8,000	0.19	A
I-10 EB Off-Ramp at Jimmie Kerr	1 Lane Ramp	2,085	8,000	0.26	A

Non-Site Traffic Forecasting

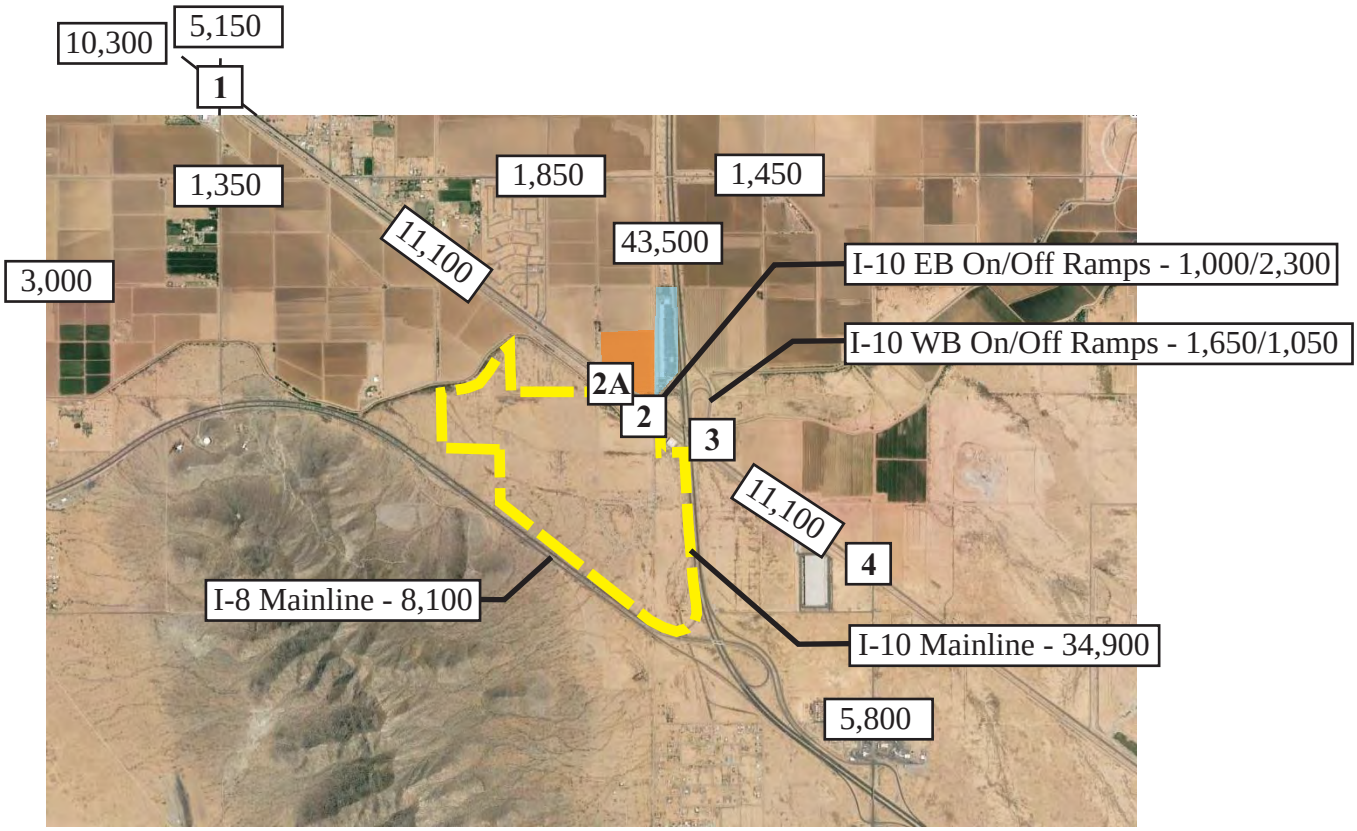
Background traffic growth is typically estimated by using the existing traffic volumes as a base and elevating them to analysis year levels by applying an estimated average annual growth rate typically defined through historical traffic volume trends or as projected through a transportation plan. From the 2006 CGSATS, daily volume graphics for the study area arterial roadways were identified for projected 2010, 2020, and 2030 network conditions. Volumes were compared for the projected 2010 and 2020 model years with the results indicating significant traffic volume increases throughout the entire City, including a calculated yearly growth projection along Jimmie Kerr Boulevard just west of I-10 at 6.7 percent per year (25,000 to 48,000 vpd). The current traffic volume level on this section of Jimmie Kerr Boulevard is identified to be 10,000 daily vehicles, 15,000 vehicles below 2010 estimated daily volumes.

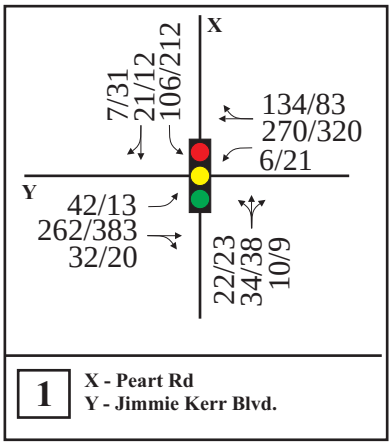
From previous discussions with the City Traffic Engineer, the growth projections within the CGSATS report were developed near the peak of the economic growth cycle during the mid-2000's and over represent volume assumptions for the identified year. The *I-8/Henness Change of Access Report* has also identified a similar volume anomaly with traffic growth projections during this same time, noting some 2030 volume estimates within the *I-10 Corridor Study, I-8 to Tangerine Road* were high and considered to be representative of 2040 conditions.

Background Conditions, Non-Site Traffic - Opening Year

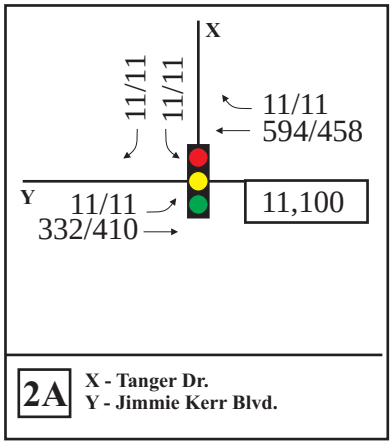
Although an actual year for initial site occupancy is unknown, a 2018 opening year has been assumed. This time period has only been utilized as a basis to grow existing traffic volume conditions to provide a conservative estimate of possible capacity constraints within the study area. For the purposes of this study, a simple 2% per year area-wide growth rate for 5 years (2013 to 2018) has been used resulting in a total growth of 10.4 percent. **Figure 5** displays the daily roadway volumes and the AM and PM peak hour intersection turning movement estimates for the 2018 Background Condition. The 2% per year growth rate is considered a reasonable estimate based on comparison of City provided volume data between 2008 and 2011 which indicated volume declines and discussions with the City that has identified limited construction which would have impacted volumes near the study area. Additional traffic volume from other potential site adjacent developments (the Station and Station II projects) have not been included as formal traffic impact studies have not been previously submitted and therefore may not be imminent. It is assumed that the City and/or ADOT will require any future development to mitigate or participate in correcting any traffic concerns prior to their opening, similar to this site.

Without near-term roadway improvements planned for the study area, the roadway network for the opening year background condition is the same as current conditions. The volume data shown in Figure 5 was substituted for the current year volumes and analyzed with intersection and roadway capacity results summarized in **Table 3.**

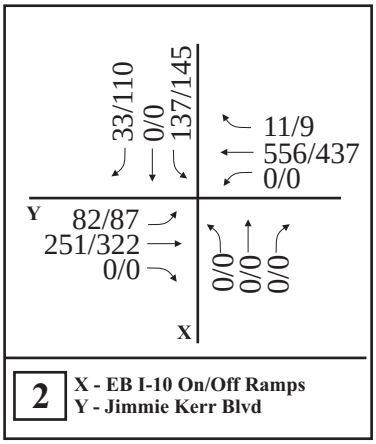




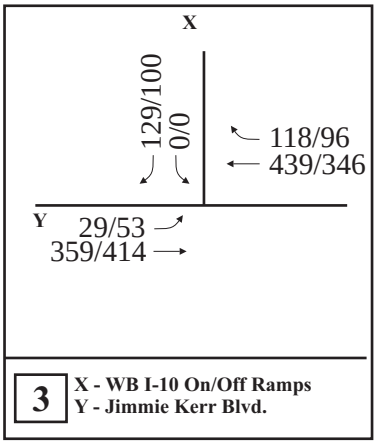
1 X - Peart Rd
Y - Jimmie Kerr Blvd.



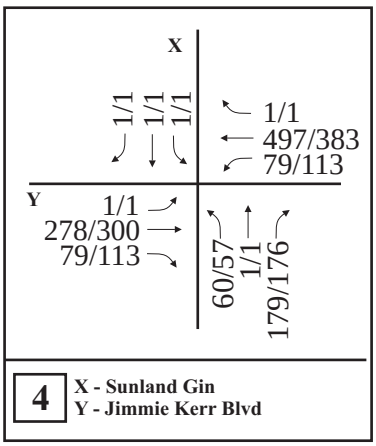
2A X - Tanger Dr.
Y - Jimmie Kerr Blvd.



2 X - EB I-10 On/Off Ramps
Y - Jimmie Kerr Blvd



3 X - WB I-10 On/Off Ramps
Y - Jimmie Kerr Blvd.



4 X - Sunland Gin
Y - Jimmie Kerr Blvd

Legend

- (X) - ATR Count Location City/ADOT
- [X] - TMC Count Location City/Developed
- ↰ ↑↱ - Lane Configuration
- XX /XX - AM/PM Peak Hour Volume
- [x,xxx] - Daily Volume

Notes:
1. Volumes are a 10.4% increase (2% per year for 5 years) from 2013 existing condition values shown in Figure 3.

Not to scale

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Non-site Background Traffic Estimates, Opening Year

Figure 5

Table 3. Capacity Analysis Summary, Background Conditions (Opening Year)

Intersections

	2018 BACKGROUND							
	AM Peak				PM Peak			
Intersection / Movement	LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue
Int 1. Jimmie Kerr / Peart (S)	B	15.0			C	20.6		
EB Left	B	17.6		<50	B	15.6		<50
EB Thru/Right	B	11.5		301	C	21.8		300
WB Left	B	17.8		<50	B	15.8		<50
WB Thru/Right	C	18.0		395	C	22.9		285
NB Left/Thru/Right	B	12.2		<50	B	11.2		<50
SB Left	B	14.5		95	C	21.2		155
SB Thru/Right	B	11.8		<50	A	7.0		<50
Int 2. Jimmie Kerr / Cox / I-10 EB On/Off Ramps (MSS)								
EB Left	A	9.3		<50	A	8.8		<50
EB Thru/Right	-	-		-	-	-		-
WB Left	-	-		-	-	-		-
WB Thru/Right	-	-		-	-	-		-
NB Left/Thru/Right	-	-		-	-	-		-
SB Left/Thru	F	125.7	1.01	208	F	116.5	1.02	231
SB Right	B	13.0		<50	B	12.4		<50
Int 3. Jimmie Kerr / I-10 WB On/Off Ramps (MSS)								
EB Left	A	9.0		<50	A	8.7		<50
EB Thru	-	-		-	-	-		-
WB Thru/Right	-	-		-	-	-		-
SB Left	-	-		-	-	-		-
SB Right	B	14.7		<50	B	12.3		<50
Int 4. Jimmie Kerr / Tanger Dr (S)	A	5.4			A	3.5		
EB Left	A	1.7		<50	A	1.7		<50
EB Thru	A	1.7		102	A	1.8		70
WB Thru	A	7.5		468	A	4.7		168
WB Right	A	3.0		58	A	3.0		<50
SB Left	B	13.1		123	B	13.1		<50
SB Right	A	8.4		<50	A	8.4		<50
Int 5. Jimmie Kerr / Sunland Gin (MSS)								
EB Left	A	8.6		<50	A	8.2		<50
WB Left	A	8.2		<50	A	8.4		<50
NB Left/Thru	D	28.4		63	D	28.1		62
NB Right	B	11.2		<50	B	11.4		<50
SB Left/Thru/Right	C	22.7		<50	C	22.0		<50

Notes: (S) = Signal, (MSS) = Minor Street Strop
V/C shown if LOS E or F
Queue is the reported 95th percentile lenght in feet

Roadway Segments

Roadway Segment	Facility Type	Daily Volume	Facility Capacity	V/C	LOS
Jimmie Kerr West of Peart	2 Lane Arterial	10,300	17,400	0.59	C
Jimmie Kerr East of Peart	2 Lane Arterial	11,100	17,400	0.64	C
Jimmie Kerr East of I-10	2 Lane Arterial	11,100	17,400	0.64	C
Selma E of I-10	2 Lane Arterial	1,450	17,400	0.08	A
Selma W of I-10	2 Lane Arterial	1,850	17,400	0.11	A
Peart N of Jimmie Kerr	2 Lane Arterial	5,150	17,400	0.30	B
Peart S of Jimmie Kerr	2 Lane Arterial	1,350	17,400	0.08	A
Trekell S of Jimmie Kerr	2 Lane Arterial	3,000	17,400	0.17	A
I-10 EB On-Ramp at Jimmie Kerr	1 Lane Ramp	1,000	8,000	0.13	A
I-10 EB Off-Ramp at Jimmie Kerr	1 Lane Ramp	2,300	8,000	0.29	A
I-10 WB On-Ramp at Jimmie Kerr	1 Lane Ramp	1,650	8,000	0.21	A
I-10 WB Off-Ramp at Jimmie Kerr	1 Lane Ramp	1,050	8,000	0.13	A

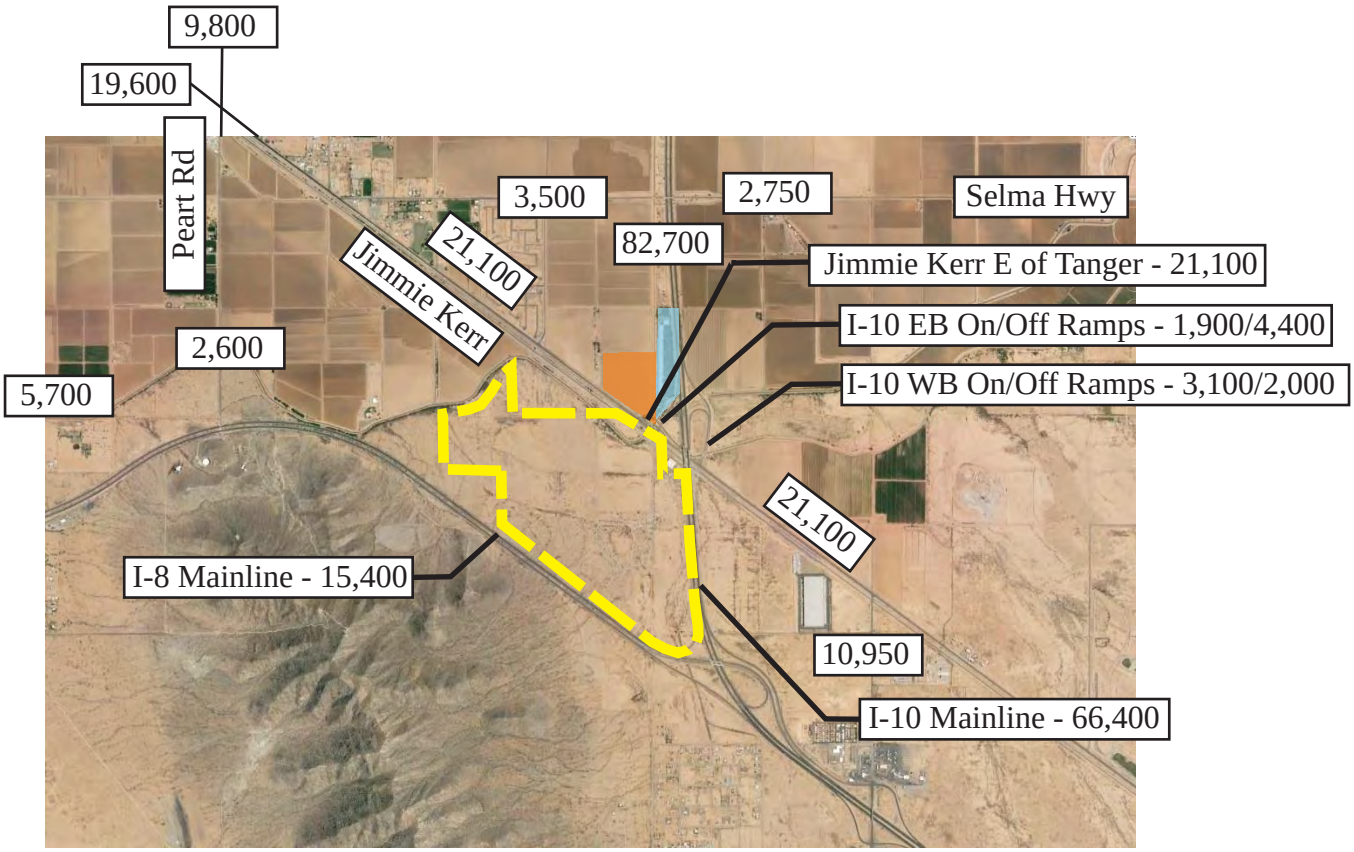
Table 3 highlights indicate:

- Acceptable intersection operations at all Jimmie Kerr intersection locations except at the I-10 EB off-ramp. During both AM and PM peak hours, the southbound approach is estimated to operate at LOS F with a v/c ratio that exceeds 1.0, indicating the need for intersection improvements prior to 2018. Mitigation to correct the poor operation is to signalize the intersection, if meeting signal installation warrant criteria.
- All study area roadway segments are estimated to operate at LOS C or better.

Background Conditions, Non-Site Traffic – Build-out

The time-frame for site build-out is projected around year 2040, however, for the purposes of estimating traffic volumes on an existing roadway network, a 12-year horizon after site opening (year 2030) was assumed. This time period was considered based on potential modifications to ADOT facilities beyond this time that could impact volume and development patterns in the study area. To estimate growth from opening year to build-out year, a growth rate of 5.5 percent per year for 12 years (total increase of 90.1%) was used to project volumes. The daily volume projections on the adjacent roadway network for this time period are provided in **Figure 6**. The use of the 5.5 percent value is based on the reasoning below:

- Future year forecast volumes (2020 and 2030) within the 2006 CGSATA are currently projected for an extended time horizon than indicated. Horizon year assumptions also include volume projections and roadway network development that are not realistic for year 2030.
- The CGSATS identified a population growth of 4 percent and employment growth of 7 percent per year between 2020 and 2030, an average population and employment growth of 5.5 percent per year.
- The Kimley-Horn *Change of Access Report* noted freeway volume projections for the 2025 and 2030 no-build scenarios. The I-10 freeway segment north of Jimmie Kerr (closest to subject site) was calculated to increase by a rate of 5.6 percent per year for this time period (31% total growth, from 74,333 vpd to 97,440 vpd), a estimate of regional traffic growth.
- A 5 percent per year increase is a reasonable value to use for traffic projections in communities experiencing high growth characteristics.



Notes:
Volumes are a 90.1% increase (5.5% per year for 12 years) above 2018 background values shown in Figure 5.

Not to scale

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Non-site Background Traffic Estimates, Build-out Year

Figure 6

Trip Generation

To estimate the site's trip generation characteristics, *Trip Generation, Ninth Edition*, published by the Institute of Transportation Engineers (ITE) 2012, was used to calculate average weekday daily total, AM peak hour, and PM peak hour number of trips. The data in this publication is categorized by land use types. The land use categories (LUC) that would be applicable to the proposed site in each phase were based on information received from the client:

- Land Use 1: Corporate Headquarters (LUC #714) - 5,504,809 SF
- Land Use 2: Commercial, Shopping Center (LUC #820) - 114,998 SF
- Land Use 3: Business Park (LUC #770) - 673,873 SF
- Land Use 4: Garden Offices (LUC #710) – 764,478 SF
- Land Use 5: General Light Industrial (LUC #110) – 2,312,036 SF

Table 4 identifies the total trip generation characteristics estimated for the entire site based on use of the fitted curve equations to estimate the traffic associated with each land use.

Mode Split

Based on the location of the site, all trips are assumed to arrive via private transportation and no reduction for transit, bike, or walk modes assumed.

From the ITE description of each land use, no identification is provided as to the percentage of trips generated by truck traffic. Data contained within the ITE *Trip Generation Handbook*, 2nd Edition, identifies an AM and PM truck generation rate (based on study in Fontana, California) for warehousing/light industrial land uses per 1,000 SF of gross floor area ranging from 0.01 to 0.05. Since the light industrial land use generates about 1 trip per 1,000 SF, 5% of all peak hour trips from the Light Industrial land use will be assumed as trucks. This portion of site traffic is assumed to travel along the most direct route between the site and interstate freeway system and will have a different distribution pattern than non-truck vehicles.

Intra-site Traffic

Because of the expanse size of the site, there is an assumption of some multi-point travel internal to the site (i.e., private currier services, maintenance activity, car pool, food services, trips between other land use facilities). To account for this interaction, a 5% assumption of total trips for the office/industrial land uses was assumed while a 15% assumption for the shopping center land use assumed. These trips are to be subtracted from the trip total to and from the site identified as intra-site trips, but accounted for along the internal roadway network.

Pass-by Traffic

Due to the nature of the subject site and low volume conditions of the area, no reduction for pass-by trips were assumed. It is assumed that all trips being generated by the subject site will be new traffic.

Table 4. Trip Generation Estimate

Description	Land Use	Office	Commercial	Bus. Park	Garden Office	Gen Lt. Indues	
	ITE Land Use Code	714	820	770	710	110	
	ITE Land Use Title	Corporate Headquarters	Shopping Center	Business Park	Gen Office Bldg	Gen Lt. Indust	
	Land Use Variable	1000 GFA	1000 GLA	1000 GFA	1000 GFA	1000 GFA	
	Variable Amount	5504.895	114.998	673.873	764.478	2313.036	
Trip Rates	Weekday	Ln(T)=0.97Ln(X)+2.23	42.7	T=10.62(X)+715.61	Ln(T)=0.76Ln(X)+3.68	T=7.47(X)-101.92	
	AM Peak Hour	Ln(T)=0.96Ln(X)+0.60	0.96	Ln(T)=0.97Ln(X)+0.49	Ln(T)=0.80Ln(X)+1.57	T=1.18(X)-89.28	
	PM Peak Hour	Ln(T)=0.88Ln(X)+0.98	3.71	Ln(T)=0.90Ln(X)+0.85	T=1.12(X)+78.45	T=1.43(X)-157.36	
Inbound %	Weekday	50%	50%	50%	50%	50%	
	AM Peak Hour	93%	62%	85%	88%	88%	
	PM Peak Hour	10%	48%	26%	17%	12%	
	Percentage of Intra-Site Trips (1)	5%	15%	5%	5%	5%	
							Grand Total
Intra-Site Trips	Weekday	1,977	737	394	308	859	4,275
	AM Peak Hour Inbound	331	11	39	43	98	522
	AM Peak Hour Outbound	25	6	7	6	14	58
	PM Peak Hour Inbound	27	31	11	8	19	96
	PM Peak Hour Outbound	234	33	31	39	139	476
External Trips	Weekday	37,560	4,174	7,479	5,852	16,318	71,383
	AM Peak Hour Inbound	6,280	58	731	815	1,859	9,743
	AM Peak Hour Outbound	472	36	128	110	252	998
	PM Peak Hour Inbound	495	174	203	151	360	1,383
	PM Peak Hour Outbound	4,462	189	577	737	2,633	8,598
Total Trips	Weekday	39,537	4,911	7,873	6,160	17,177	75,658
	AM Peak Hour Inbound	6,611	69	770	858	1,957	10,265
	AM Peak Hour Outbound	497	42	135	116	266	1,056
	PM Peak Hour Inbound	522	205	214	159	379	1,479
	PM Peak Hour Outbound	4,696	222	608	776	2,772	9,074

Notes:
1 To account for portion of trip generation made between individual lots within the site as a whole

Source: Trip Generation Manual, 9th Ed, Institute of Transportation Engineers, 2012.

Identified by the external trip values, build-out of site is projected to generate a grand total of approximately 71,400 daily, 10,750 AM peak hour, and 9,980 PM peak hour trips onto the adjacent street roadway network at full occupancy.

When the site generated trips (inbound plus outbound trips) are divided by the entire site development area, the average daily, AM and PM peak hour rates can be calculated, as shown below:

- Average Daily Trip Rate = 71,383 trips / 9.371 MSF = 7.62 trips / 1,000 KSF
- Average AM Pk Hr Rate = 10,741 trips / 9.371 MSF = 1.15 trips / 1,000 KSF (15% of daily trips)
- Average PM Pk Hr Rate = 9,981 trips / 9.371 MSF = 1.07 trips / 1,000 KSF (14% of daily trips)

Trip Distribution

Site Traffic Distribution

Distribution patterns for site traffic have been based loosely on a gravity model method, considering adjacent population centers divided by the square of the distance between the site and population center as identified from data generated from the US Census 2010 dataset (data contained in the Appendix). Percentages were then adjusted slightly to reduce the draw from the Casa Grande and Phoenix areas to increase demand to areas east, west and south as new local housing potential is realized with increased site employment opportunities. **Figure 7** shows the estimated distribution percentage for traffic approaching and departing the site for build-out year, along with the total daily trip estimates for the subject site. These distribution percentages are similar to values used in the Henness Road / I-8 Traffic Interchange report conducted by Kimley-Horn.

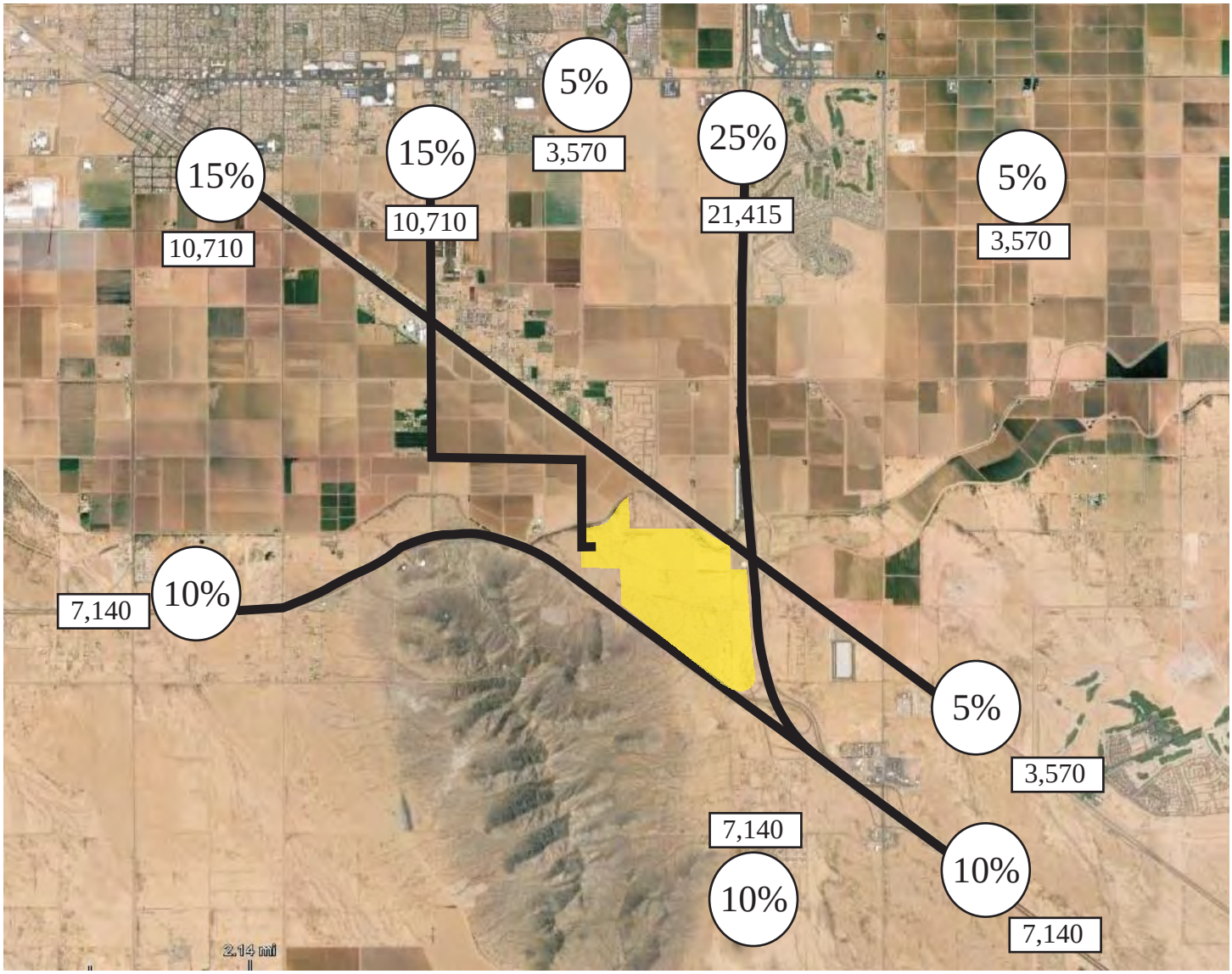
Proposed Site Access and Internal Site Circulation at Full Build Out

At some point in the future, freeway improvement projects are anticipated to occur in the study area that will impact travel patterns to and from the site. None of these projects are currently programmed, allowing the site to adjust land uses, intensities, and parcel sizes to best accommodate evolving tenant need and facilitate access to the surrounding roadway network.

Site Assignment

Figure 8 is provided to show the internal traffic assignment within the subject site. This has been calculated by identifying the daily site generated traffic volumes for selected parcel groupings, estimating the percentage of traffic to use each site access point based on Figure 7 distribution percentages, then estimating likely routes between the parcel grouping and access. Peak hour volumes on the roadways were estimated based on the trip generation data in Table 4 and calculated percentage of peak hour trips to daily trips then rounded. It can be assumed that a peak hour directional factor on these roadways can approach 70% due to access and land use locations.

Figure 9 schematically shows estimated access designs for the subject site at the major access points, internal roadway cross-section designs, and potential intersection control for internal site locations based on the information shown in Figure 8. It should be noted that a significant amount of unknown factors could modify conditions. With a total of 5 access points identified to accommodate 10,000 peak hour trips, traffic volumes will require channelized turn movements to help accommodate the desired demand and to minimize delays and queues. Additional access points may be considered and the potential for off-site parking/shuttle service could help reduce the overall number of on-site vehicles, if needed. Use of roundabouts (with by-pass channelization lanes) at the high volume access roadway/internal loop road intersections where turn movements are project to be high, may help reduce potential vehicle queue. The following items are noted regarding internal site access and circulation:



Note:
At full build-out the site it estimated to generate a total of 71,838 daily trips.

Not to scale

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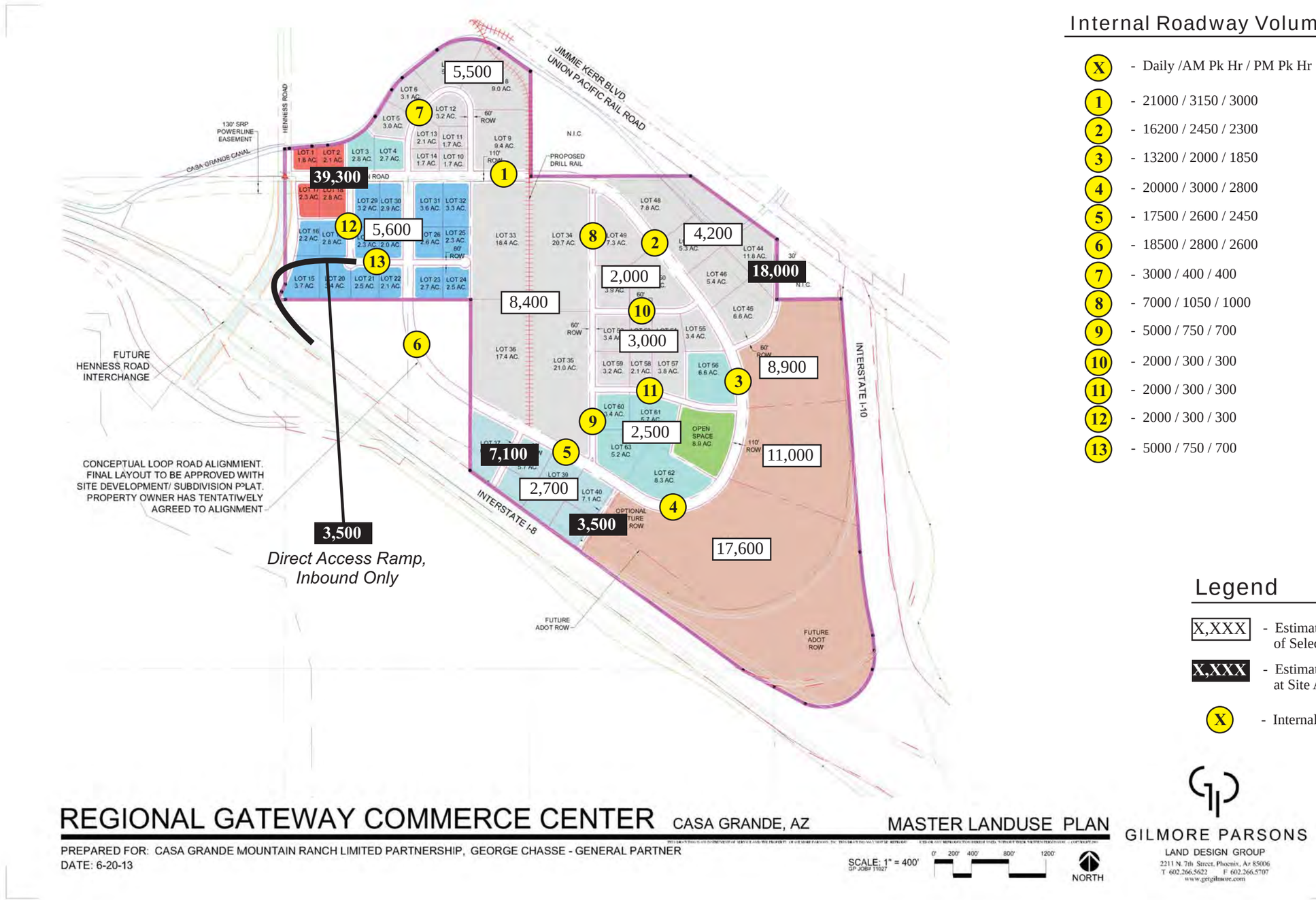
Trip Distribution

Figure 7



Internal Roadway Volume Estimate

- (X) - Daily /AM Pk Hr / PM Pk Hr
- (1) - 21000 / 3150 / 3000
- (2) - 16200 / 2450 / 2300
- (3) - 13200 / 2000 / 1850
- (4) - 20000 / 3000 / 2800
- (5) - 17500 / 2600 / 2450
- (6) - 18500 / 2800 / 2600
- (7) - 3000 / 400 / 400
- (8) - 7000 / 1050 / 1000
- (9) - 5000 / 750 / 700
- (10) - 2000 / 300 / 300
- (11) - 2000 / 300 / 300
- (12) - 2000 / 300 / 300
- (13) - 5000 / 750 / 700

Legend

- X,XXX - Estimated Daily Trip Generation of Selected Parcel Areas
- **X,XXX** - Estimated Daily Traffic Volume, at Site Access Points
- (X) - Internal Roadway Location

REGIONAL GATEWAY COMMERCE CENTER

CASA GRANDE, AZ

MASTER LANDUSE PLAN

PREPARED FOR: CASA GRANDE MOUNTAIN RANCH LIMITED PARTNERSHIP, GEORGE CHASSE - GENERAL PARTNER

DATE: 6-20-13

SCALE: 1" = 400'

GP JOB# 11027

0' 200' 400' 800' 1200'

NORTH

GILMORE PARSONS
LAND DESIGN GROUP
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Not to scale

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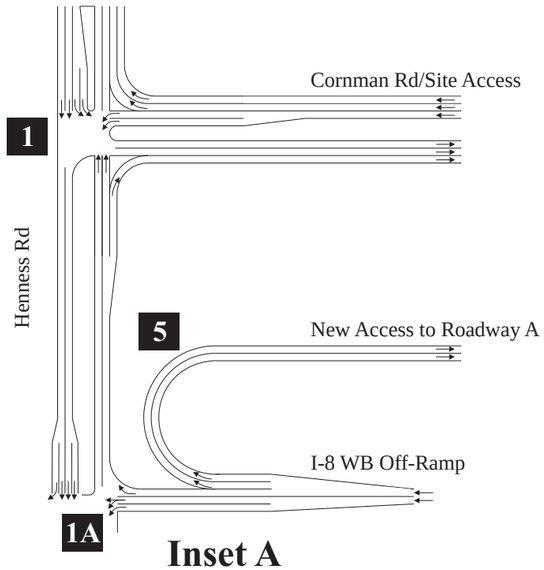
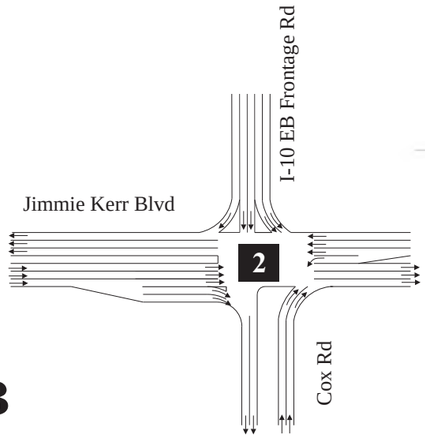
Site Generated Daily Traffic Volume Estimates on the Internal Site Roadways at Full Build Out

Figure 8



Inset A



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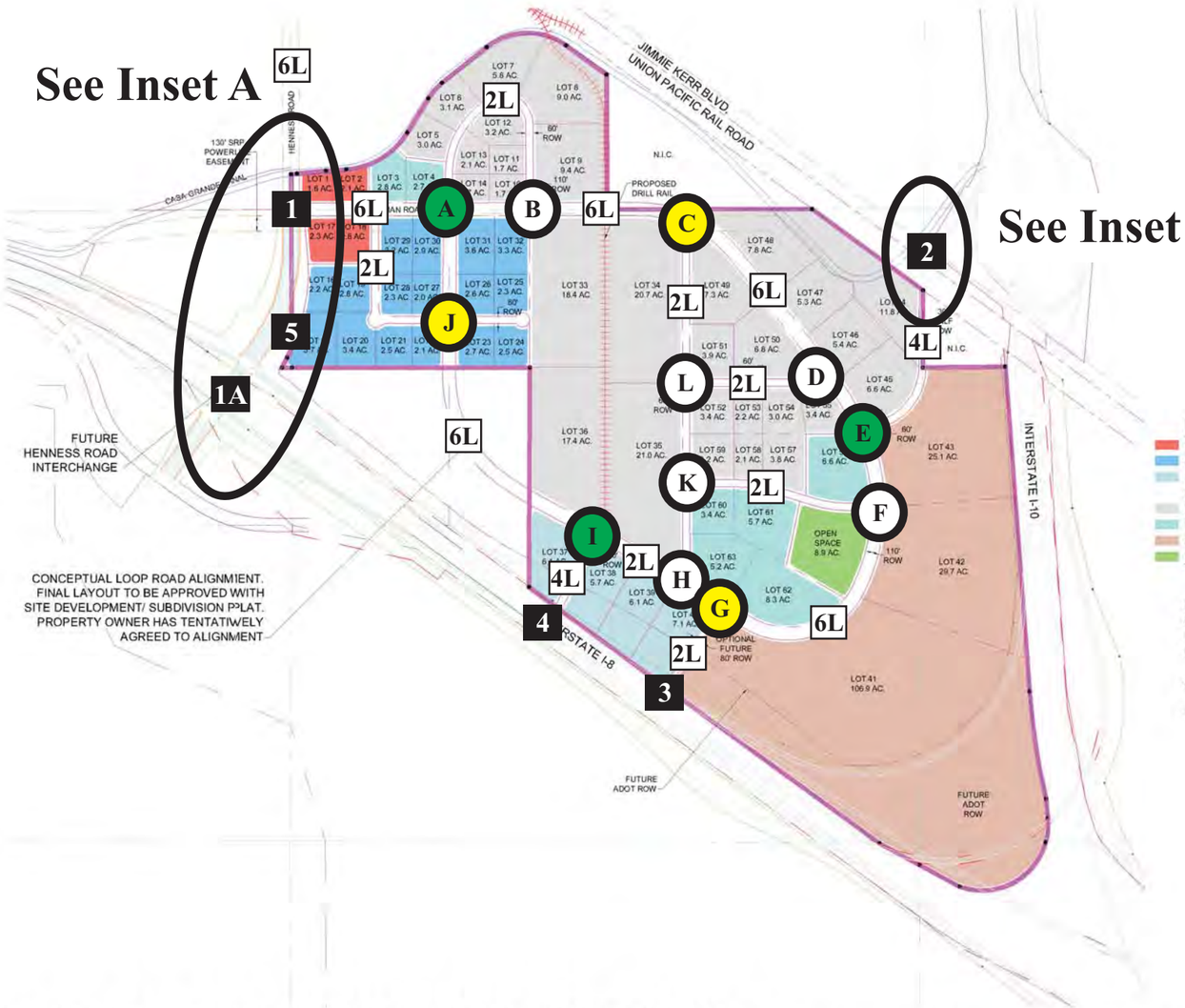

LAND USE SUMMARY	BEFORE ADOT EXPANSION OF I-8	AFTER ADOT EXPANSION OF I-8
COMMERCIAL:	8.8 AC	8.8 AC
BUSINESS PARK:	44.2 AC	44.2 AC
LIGHT INDUSTRIAL:	25.0 AC	15.0 AC
GARDEN OFFICE/ LIGHT INDUSTRIAL:	194.2 AC	194.2 AC
GARDEN OFFICE:	34.7 AC	34.7 AC
CORPORATE OFFICE:	161.7 AC	101.1 AC
OPEN SPACE:	8.9 AC	8.9 AC
TOTAL NET DEVELOPABLE:	477.5 AC	406.9 AC
CORNMAN LOOP ROAD ROW:	28.2 AC	28.2 AC
HENNESS ROAD ROW:	3.2 AC	3.2 AC
INTERIOR LOCAL ROW:	16.0 AC	15.6 AC
PROPOSED PROJECT ROW:	47.4 AC	47.0 AC
FUTURE ADOT ROW:		71.0 AC
TOTAL SITE AREA	524.9 AC	524.9 AC

REGIONAL GATEWAY COMMERCE CENTER CASA GRANDE, AZ

MASTER LANDUSE PLAN

PREPARED FOR: CASA GRANDE MOUNTAIN RANCH LIMITED PARTNERSHIP, GEORGE CHASSE - GENERAL PARTNER
DATE: 6-20-13

SCALE: 1" = 400' 0' 200' 400' 800' 1200'

NORTH

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Legend

- (X) - Roundabout Intersection
- (X) - Signal Controlled Intersection
- (X) - Minor-Street Stop Controlled Intersection
- 3 - Access Point
- 4L - Roadway cross-section (4-lane)

Not to scale

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Proposed Site Access Design and Internal Roadway Need at Full Build Out

Figure 9

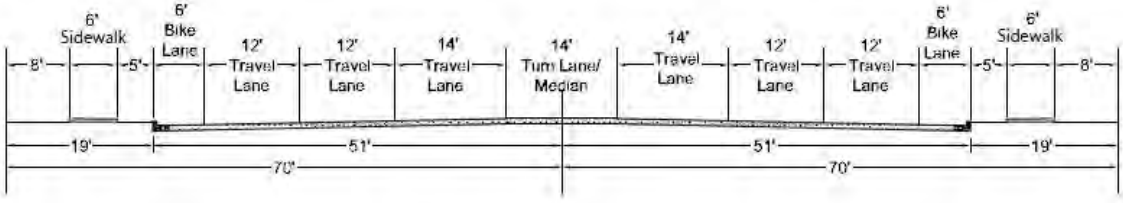
- High demand is identified for all site access points with a destination to/from the site's internal ring road. Because of these volumes, roundabouts are preferred to signalized intersections to help vehicle flow at these locations. It would be beneficial to permit right turn movements from channelized lanes. Adequate ROW should be reserved for internal main intersections to allow flexibility in future design.
- The ring road should be considered as a 6-lane facility in the future as inbound and outbound volumes dictate the need for a wide cross-section design to accommodate peak hour traffic demands in excess of 3,000 directional peak hour vehicles. The current site plan indicates a 110-foot ROW for the ring road matching the City of Casa Grande minor-arterial cross-section design (4-lane roadway). This is an appropriate design for near-term conditions, but underground and above ground utilities and intersection designs should consider a potential 6-lane cross-section, if and when on-site volumes dictate widening need. Other future options, such as a converting the loop road to a one-way facility, could be an alternative to a six-lane future design.
- Estimated daily volumes along the internal roadways off of the loop road that exceed 3,000 daily vehicles (segments 8, 9, and 13) should be considered as eventual 4-lane facilities, depending upon driveway access locations. All other roadway segments are appropriate as 2-lane roads.
- Secondary internal intersections could be considered for eventual signal control to help left turn movements from the internal areas, provide the necessary gaps needed for trucks and allow for possible gaps in the traffic stream for more minor side street and driveway locations.
- Other minor/minor intersections can likely be accommodated via minor street or all-way stop control.
- Because drivers will mostly be repeat motorists, they will be able to adjust their ingress and egress route, if delays become persistent.
- The internal roadways appear to be properly located, however, the first roadway off of Cornman Road east of Henness Road (segment 12, at the approximate 660-foot location) may have a very difficult time accommodating outbound left turn movements due to the high vehicle demand projected along Cornman Road in this area.
- Individual site access points should promote right-in/right-out movements as much as possible and parcels/lots provide joint access with access to the side street locations where practical.
- Left turn movements to/from the ring road should be limited to the major streets, if possible. Similarly, current access management concept should be continued, allowing only right-in/right-out movements near intersections, aligning driveways on opposite side of streets, and controlling the location of left turn movements. Right turn deceleration lanes to individual lots, especially at the corporate office locations should be provided considering the identified demand along the loop road.
- Sidewalks, bike lanes, roadway lighting, should be considered to help promote safety and alternate travel options.

- No parking/stopping along the loop road or entrance roadways to the site should be allowed.
- Additional traffic control considerations may be needed based on design characteristics of specific lots.
- Over one-half of all site generated traffic is to be generated from the 5.5 million square feet of corporate headquarter office land use. The three lots proposed for this land use are located at the southeast corner of the site. The ability to provide easy access to these lots, eliminating their vehicles from using the interior loop road will improve the overall operation of the site. Options to consider may be a new right-in/right-out Jimmie Kerr access point east of Cox Road serving only the parking areas of these three lots, moving/separating the land uses to other parts of the site, utilizing one of the site lots or non-site parcel adjacent to a direct access ramp for a dedicated parking area with bus shuttle service to the entire site.

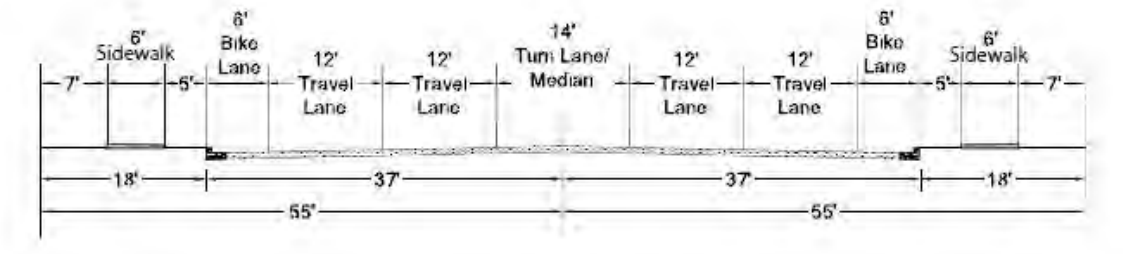
Roadway Cross Sections

The following roadway cross-section have been identified from the City of Casa Grande 2006 CGSATS pertaining to 6-lane, 4-lane, and 2-lane designs. Widening at intersection approaches will be needed.

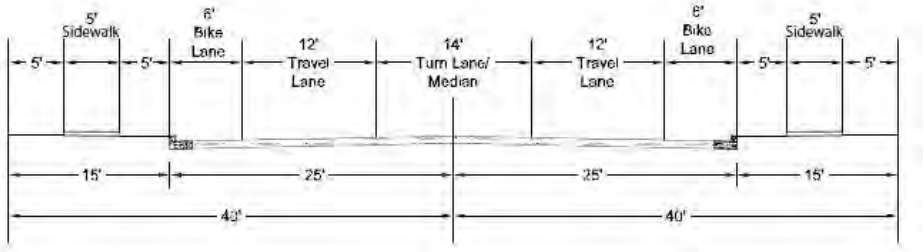
City of Casa Grande Principal Arterial – Typical Section
(Internal Site Ring Road and Cornman Road Designs)



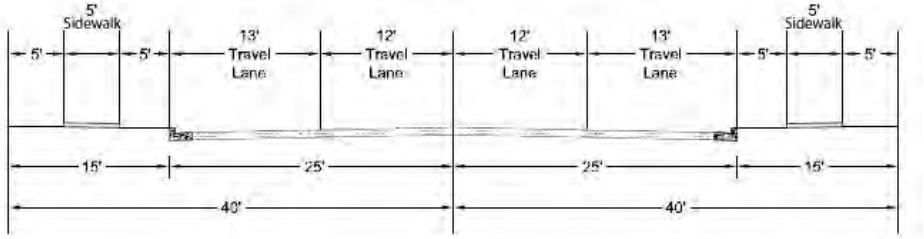
City of Casa Grande Minor Arterial – Typical Section
(Potential West Access Road Design, Cox Road Access, & I-8 WB Frontage Road Access)



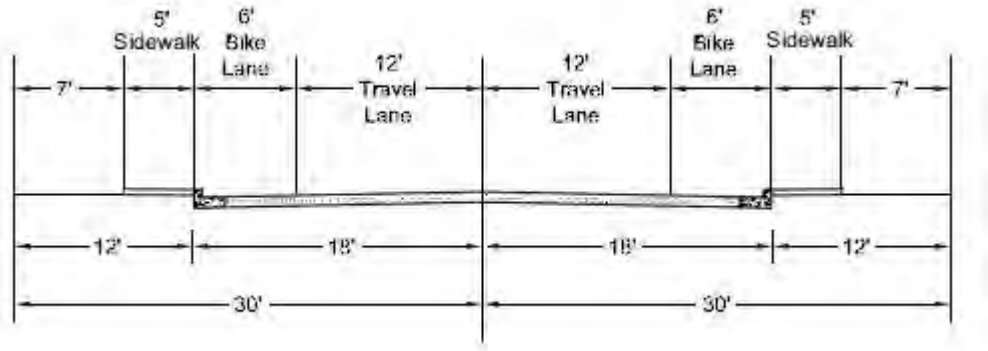
City of Casa Grande Major Collector – Typical Sections
(Low Volume Internal Road Design, segments 8, 9 & 13)



ALTERNATE



City of Casa Grande Minor Collector – Typical Section
(Potential Site Internal Road Design, all other roads)



LOS Analysis at Site Build Out

Background Condition

Analysis was conducted for the build-out year along the study area roadway segments only and assuming no roadway network modifications. Intersection turn movement analyses were not conducted noting significant unknown roadway network variables that could influence its operating conditions, including the location/improvement of freeway access points, location of population growth areas and commercial developments, and ability for agencies or developer to pay for infrastructure improvements. The level of service conditions for the roadway segments are based on the City of Casa Grande roadway capacity values utilized earlier in the report and the daily traffic volumes shown

in Figure 6. The assumed number of lanes for the facility type may be different than existing conditions (all roadways are single lane directional facilities) to keep the LOS value at LOS D or better. **Table 5** shows the facilities required to accommodate estimated daily volumes in an acceptable manner at build-out.

Table 5. Roadway Segment LOS, Background Conditions (Build-out)

Roadway Segment	Facility Type Assumption	Daily Volume	Facility Capacity	V/C	LOS
Jimmie Kerr West of Peart	4 Lane Arterial	19,600	34,800	0.56	C
Jimmie Kerr East of Peart	4 Lane Arterial	21,100	34,800	0.61	C
Jimmie Kerr East of I-10	4 Lane Arterial	21,100	34,800	0.61	C
Selma E of I-10	2 Lane Arterial	2,750	17,400	0.16	A
Selma W of I-10	2 Lane Arterial	3,500	17,400	0.20	A
Peart N of Jimmie Kerr	2 Lane Arterial	9,800	17,400	0.56	C
Peart S of Jimmie Kerr	2 Lane Arterial	2,600	17,400	0.15	A
Trekell S of Jimmie Kerr	2 Lane Arterial	5,700	17,400	0.33	B
I-10 EB On-Ramp at Jimmie Kerr	1 Lane Ramp	1,900	8,000	0.24	B
I-10 EB Off-Ramp at Jimmie Kerr	1 Lane Ramp	4,400	8,000	0.55	C
I-10 WB On-Ramp at Jimmie Kerr	1 Lane Ramp	3,100	8,000	0.39	B
I-10 WB Off-Ramp at Jimmie Kerr	1 Lane Ramp	2,000	8,000	0.25	A

The results of Table 5 indicate:

- Jimmie Kerr Boulevard will need widening to a minimum 4-lane arterial roadway by 2030.
- All other roadway segments can accommodate estimated 2030 background volumes at LOS C or better.

Total Traffic Conditions

Noting the daily, AM peak hour and PM peak hour site traffic generation previously indicated in Table 4, the distribution of site related trips as indicated in Figure 7, and identification of the site access points shown in Figure 8, the following can be concluded:

- To accommodate the projected 71,400 daily trips to be generated by the site, the total number of roadway network lanes needed to accommodate site traffic is approximately equal to 8 directional lanes (71,400 vpd / 8,700 vpdpl = 8.2 directional lanes).
- When considering the directional aspects of the peak hour demand at the site access points, it is assumed one lane (turn or through) can accommodate 10% or 870 vehicles per hour per direction. Based on this assumption, the AM and PM peak hour demand would require approximately 11 approach lanes leading into the site (9,743 vph / 870 vph = 11.2 lanes) and 10 lanes exiting the site (8,598 vph / 870 vph = 9.9 lanes). Figure 9 identifies 12 inbound lanes and 8 outbound lanes. Channelization of turn movements may allow for a reduction in the estimated number of lanes.

Figure 10 has been developed to identify the future daily traffic volume conditions at site build-out assuming the site-related traffic volumes are placed onto the existing roadway network under two scenarios. The first scenario assumes two site access points, the west access roadway between Cornman and Peart and a Cox Road access. The second scenario also assumes two access points, the west access roadway and the I-8/Henness TI. **Table 6** provides the roadway segment capacity analysis results below for each scenario under the total traffic condition (and excludes any additional or diverted background traffic as a result of the access roads and the Henness TI). It should be noted that the analysis does not consider the additional traffic potential from other site developments or diverted traffic potential.

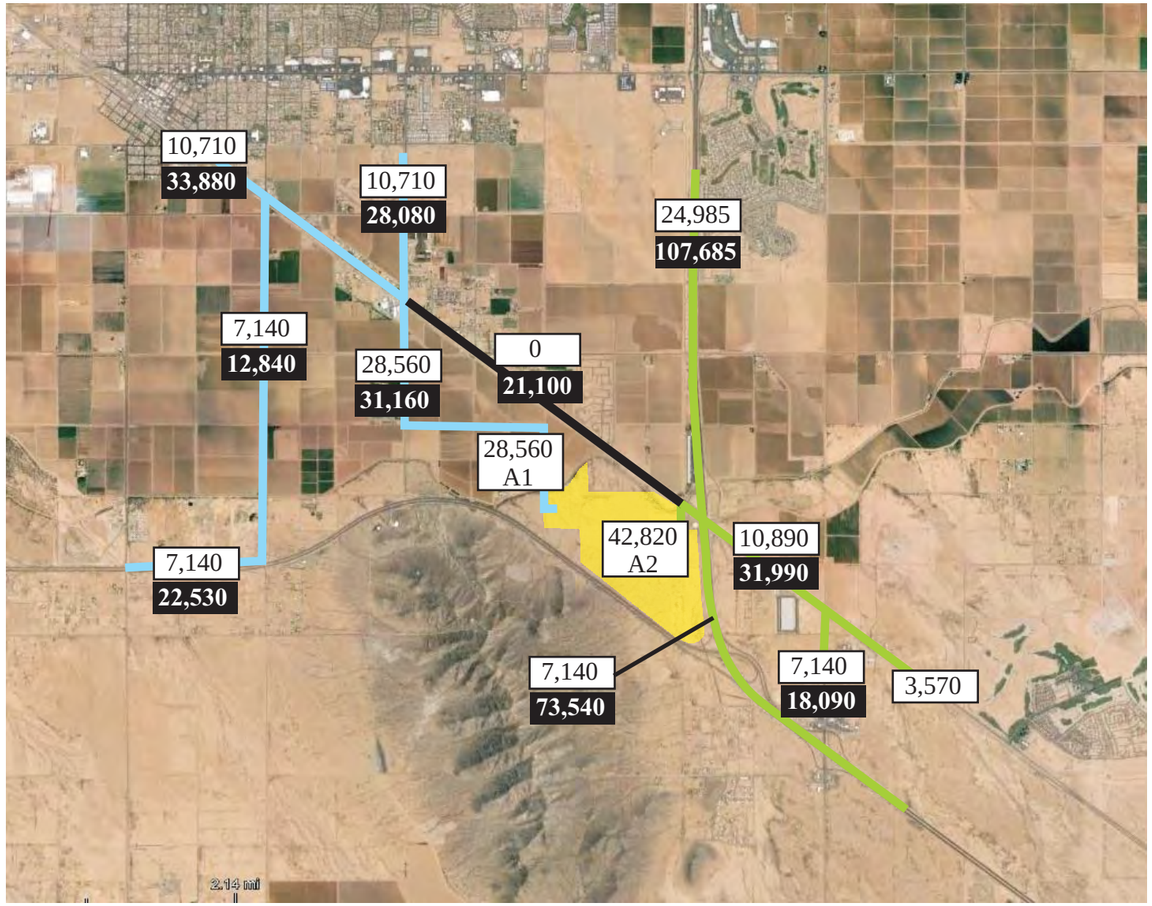
Table 6. Roadway Segment LOS, Total Traffic Conditions (Build-out)

Scenario 1, West Access and Cox Road Access

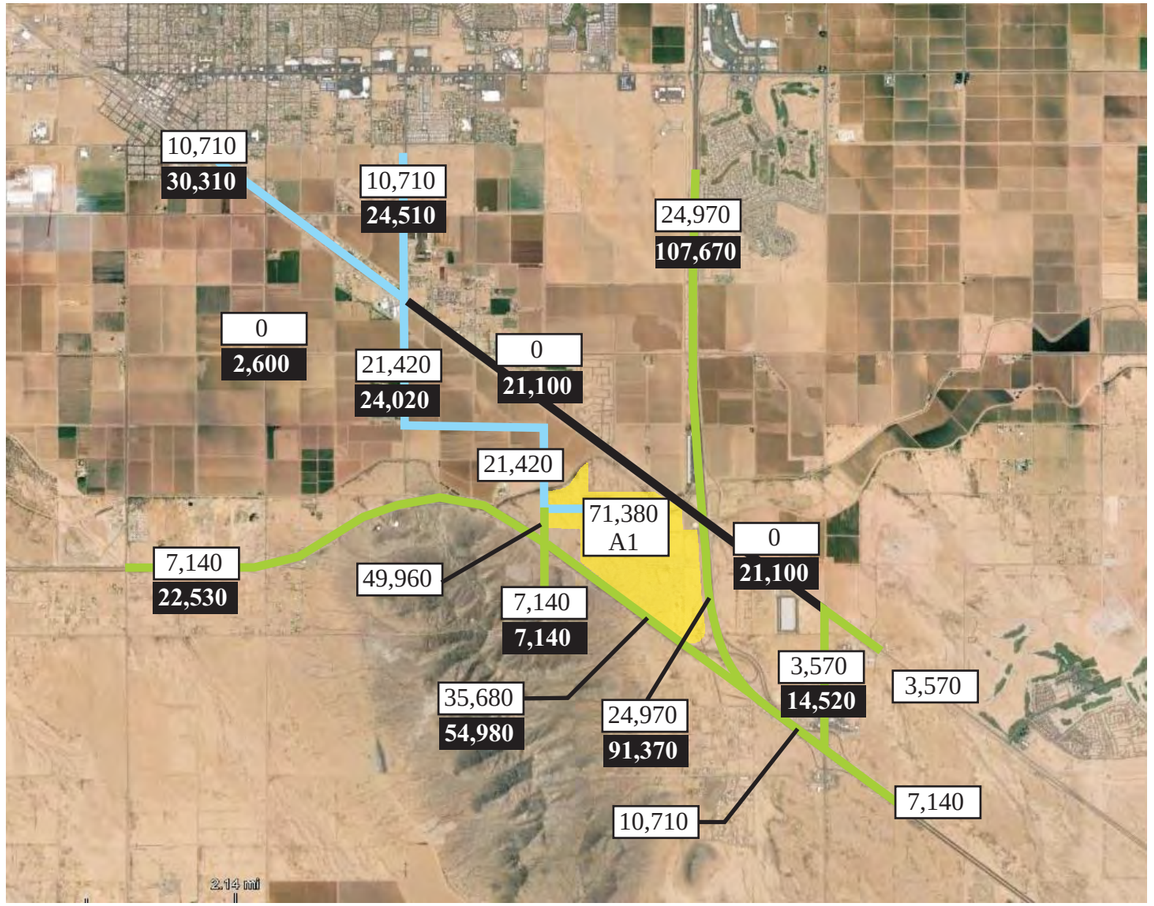
Roadway Segment	Facility Type Assumption	Daily Volume	Facility Capacity	V/C	LOS
Jimmie Kerr West of Peart	6 Lane Arterial	41,020	52,200	0.79	D
Jimmie Kerr East of Peart	4 Lane Arterial	21,100	34,800	0.61	C
Jimmie Kerr East of I-10	6 Lane Arterial	31,990	52,200	0.61	C
Peart N of Jimmie Kerr	4 Lane Arterial	28,080	34,800	0.81	D
Peart S of Jimmie Kerr	6 Lane Arterial	31,160	52,200	0.60	C
Trekell S of Jimmie Kerr	2 Lane Arterial	12,840	17,400	0.74	C
I-10 EB On-Ramp at Jimmie Kerr	1 Lane Ramp	5,470	8,000	0.68	C
I-10 EB Off-Ramp at Jimmie Kerr	2 Lane Ramp	16,893	16,000	1.06	F
I-10 WB On-Ramp at Jimmie Kerr	1 Lane Ramp	15,593	16,000	0.97	E
I-10 WB Off-Ramp at Jimmie Kerr	1 Lane Ramp	5,570	8,000	0.70	C
West Site Access Rd. N of Cornman	4 Lane Arterial	28,560	34,800	0.82	D

Scenario 2, West Access and I-8/Henness Rd TI

Roadway Segment	Facility Type Assumption	Daily Volume	Facility Capacity	V/C	LOS
Jimmie Kerr West of Peart	6 Lane Arterial	30,310	52,200	0.58	C
Jimmie Kerr East of Peart	4 Lane Arterial	21,100	34,800	0.61	C
Jimmie Kerr East of I-10	4 Lane Arterial	21,100	34,800	0.61	C
Peart N of Jimmie Kerr	4 Lane Arterial	24,510	34,800	0.70	C
Peart S of Jimmie Kerr	4 Lane Arterial	24,020	34,800	0.69	C
Trekell S of Jimmie Kerr	2 Lane Arterial	2,600	17,400	0.15	A
I-10 EB On-Ramp at Jimmie Kerr	1 Lane Ramp	1,900	8,000	0.24	B
I-10 EB Off-Ramp at Jimmie Kerr	1 Lane Ramp	4,400	8,000	0.55	C
I-10 WB On-Ramp at Jimmie Kerr	1 Lane Ramp	3,100	8,000	0.39	B
I-10 WB Off-Ramp at Jimmie Kerr	1 Lane Ramp	2,000	8,000	0.25	A
West Site Access Rd. N of Cornman	4 Lane Arterial	21,420	34,800	0.62	C
Henness Rd. S of Cornman	6 Lane Arterial	49,960	52,200	0.96	E



West Access to Peart and Cox Road Access Only



West Access to Peart and Henness TI Access Only

Legend

3,570	- Daily Traffic Volume, Site Component
3,570	- Daily Traffic Volume, Background + Site

Not to scale

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Total Traffic Projections at Build-out
- Existing Roadway Network -

Figure 10

Comments pertaining to each scenario are listed below:

Scenario 1

- Allows traffic to distribute between the east and west portions of the site.
- Will require the West Access Road and Peart Road south of Jimmie Kerr to be 6-lane facilities.
- Will require an additional I-10 access other than at Jimmie Kerr.
- No direct access to I-8 and the site is provided.

Scenario 2

- Permits site traffic to only enter/exit from the west side of the site.
- Will require an additional access point onto Henness Road in addition to the Henness/Cornman access.
- Will require an additional access point from I-8 westbound as over 35,000 daily trips (17,500 inbound) are anticipated to access the site from this direction. This volume can't be accommodated via typical interchange design.
- Can serve and promote development of the Casa Grande Mountain Ranch development south of I-8.

The results of the above analysis indicate two access points will not likely be able to accommodate site traffic at full build-out and will likely require both the Henness TI and the Cox Road access to accommodate traffic demand in an acceptable manner.

Incremental LOS Analysis to Determine Near-Term Site Development Threshold Values

To determine the amount and type of roadway network improvements are needed based on an unknown amount of site development intensity for opening year, AM and PM peak hour intersection turning movement capacity analyses were conducted. Utilizing the no-build opening year background traffic condition as a base scenario, site traffic was added to the intersection until an individual movement operated at LOS E (signalized) or at a volume to capacity ratio exceeded 0.80 (stop controlled). The added traffic, considered site generated trips, was converted to average site development area using the AM and PM peak hour average trip rates (calculated in the Trip Generation section of this report) for the entire site. These site development "trigger" values are identified as a percentage of total site development that can be constructed before for the next major transportation improvement is required. Only near-term analysis was considered appropriate as too many variables exist for the build-out year.

As part of the opening year background capacity analysis, the I-10 EB On/Off Ramp approach to Jimmie Kerr Boulevard is identified to operate in an unacceptable manner in both AM and PM peak hours. Any site development traffic added to this intersection will require improvements to this location.

Table 7 identifies the near-term "trigger" values for major roadway improvements dependent upon the level of site occupancy and peak hour estimates. Multiple scenarios are possible.

Table 7. Near-Term Development Trigger Points

Jimmie Kerr / Peart Intersection			
Scenario	**Control Period**	**Site Occupancy Trigger**	**Needed Improvement**
No-Build	PM Peak	up to 2.7% or 250,000 SF	None. Increase cycle length and modify green splits.
Alt 1	AM Peak	up to 4.5% or 475,000 SF	Improve NB Peart S of Jimmie Kerr, single NBL, T, R lanes. P/P NBL & SBL. Requires widening of UPRR crossing.
Alt 2	AM Peak	up to 11.0% or 1,032,000 SF	Spot widen E/W approaches, 2 EBT and 2 WBT lanes, dual WBL, 2 SB lanes S of Jimmie Kerr.
Alt 3	AM & PM Peak	up to 14.5% or 1,360,000 SF	Three thru, 2 left, 1 right where needed - Over 14.5% requires another Jimmie Kerr intersection. Improvements to the I-10 WB ramp / Jimmie Kerr intersection. 4-lane Jimmie Kerr cross-section.
Site Access Points			
West Site Access Roadway			
Scenario	**Control**	**Site Occupancy Trigger**	**Needed Improvement**
Opening Year		0% or 0 SF	Jimmie Kerr / I-10 EB intersection
Alt A1	2-lane access roadway peak hour directional capacity, ~ 1050/ln	up to 11.0% or 1,032,000 SF	Assumes acceptable operation at Jimmie Kerr / I-10 EB intersection
Alt A2	4-lane access roadway peak hour directional capacity, ~ 1200/ln	up to 24.9% or 2,330,000 SF	Requires Alt 2 improvements to Jimmie Kerr/Peart intersection, I-10 WB ramp/Jimmie Kerr intersection and a second Jimmie Kerr intersection (Selma Highway) for site traffic. Maximum capacity of single site access point for traffic to/from north.
Alt A3	4-lane access roadway peak hour directional capacity, ~ 1200/ln	up to 26.8% or 2,516,000 SF	Maximum capacity of single site access point for a combination of traffic to/from North and I-8/Henness TI.
Alt A4	6-lane access roadway peak hour directional capacity, ~ 1600/ln	up to 49.6% or 4,650,000 SF	Assumes acceptable operation at Jimmie Kerr and I-10 ramps, requires second Henness site access.
Cox Road Site Access			
Alt B	4-lane access roadway peak hour capacity, ~ 1000/ln	Can accommodate up to 20.7% or 1,940,000 SF	Assumes acceptable signalized intersection of Jimmie Kerr with the I-10 ramps and improved UPRR crossing
I-8 / Henness Road TI			
Alt C	Single Lane On-Off Ramps	Can accommodate up to 27.4% of 2,570,000 SF	Construct TI, requires additional Henness Road access to site other than at Cornman

The above table indicates the following major trigger points:

1. Improvements to the Jimmie Kerr/I-10 EB intersection are require as 2018 background conditions identify LOS F conditions for the eastbound off-ramp left turn movement in both the AM and PM peak hours.
2. Site occupancy can reach 11.0% of total site build-out with spot improvements to the Jimmie Kerr / Peart Road intersection and improvement to the Peart Road UPRR crossing assuming only the 2-lane west access roadway.

3. Site occupancy can reach 14.5% of total with the above improvements, widening of Jimmie Kerr to a 4-lane facility, improvements to the Jimmie Kerr/I-10 WB On-Off intersection, and widening of the west access roadway to a 4-lane cross section.
4. Site occupancy can reach 24.9% of total with the above improvements and another Jimmie Kerr intersection from the west access road for site traffic to access. This assumes the Jimmie Kerr/I-10 intersections can accommodate traffic demand and no I-8/Henness interchange.
5. Site occupancy can reach 26.8% of total for a single site access point at Cornman/Henness Road with the I-8/Henness TI. Depending upon when this TI is operational, this may or may not require the list of improvements along Jimmie Kerr that were previously identified.
6. Site occupancy could potentially reach 49.6% based on a 6-lane Henness Road/west access road design. To accommodate this traffic demand, a second Hessness Road access will be required.
7. A Cox Road access could accommodate up to 20.7% of site occupancy.
8. The I-8/Henness TI could accommodate up to 27.4% of site occupancy.

Overall, it is estimated that the single west access point could accommodate a maximum of about 50 % of site occupancy prior to another major site access being required.

Use of peak hour traffic conditions as opposed to daily capacity values are considered to be a more conservative approach to the trigger values that have been developed. Conditions could be re-evaluated upon more detailed information involving the site opening year, adjacent developments, on-site tenant characteristics, and changes to roadway volumes and conditions.

Conclusions and Recommendations

The following bullet items highlight the conclusions of this study based on the information presented and interpretation of the analyses performed:

- Previous City and ADOT recommends have identified no improvements are planned for any study area facilities that are not developer driven or developer paid.

- Assuming a 2% per year background growth rate for 5 years, all study area roadway segments are anticipated to operate at LOS C or better for the opening year non-site background conditions. Only the stop controlled I-10 eastbound off-ramp left turn movement at Jimmie Kerr is expected to operate at LOS F during both AM and PM peak hour conditions for this time period.

- Adjacent development projects within the study area (the Station and the Station II developments) have not been considered as part of the background traffic volumes. New developments are assumed to mitigate any poor operational roadways conditions, or at a minimum, contribute to roadway improvement costs within the study area.

- At build-out, the 9,371,000 SF of site development is estimated to generate a total of 71,383 daily trips, 10,741 AM peak hour trips and 9,981 PM peak hour trips onto the adjacent roadway network based on the site's land use assumptions. Over half of all trips generated are projected from the office headquarter land use located in the southeast corner of the site. The ability to manage the vehicles from these parcels will have a significant impact on the operation of the internal loop roadway.

- To accommodate site traffic at build-out, a total of 5 access points are being considered. At site opening, only the west access roadway is planned. The introduction of the other four access points is dependent upon development intensity, timing, and other considerations that are not known at this time. In all, the five access points are anticipated to include a total of 11 inbound lanes and 8 outbound lanes.

- To accommodate traffic projections at build-out, the site's internal loop roadway should be considered as an eventual six-lane facility as peak hour traffic volumes could exceed 3,000 directional vehicles. The central north/south connector roadway and potential future direct access ramp into the site from the I-8/Henness westbound off-ramp may require construction with a 4-lane cross-section. All other site roadways can be constructed as two-lane facilities.

- Site access to and from the adjacent roadway network should consider use of channelized movements to minimize delays and queues associated with signalized operations. It may be beneficial to provide sufficient right-of-way along the loop road to accommodate roundabouts with by-pass lanes to facilitate movements, specifically at the intersections with the site access roadways.

- The developer is to construct a west 2-lane access roadway between the site's Cornman/Henness access point and Peart Road for opening year. This two-lane roadway can accommodate up to 11% of site occupancy based on anticipated peak hour demand (and could potentially accommodate up to 22% based on daily capacity values). To accommodate the 11%, improvements will be required at the Jimmie Kerr/Peart and Jimmie Kerr/I-10 intersections along with UPRR highway grade crossing improvements on Peart Road. Site occupancy above this value will require a 4-lane access roadway and additional roadway network improvements. The single west site access point could accommodate up to 26.8% of total site occupancy before another site access is required.

- A 4-lane site access at Cox Road, intersecting at the Jimmie Kerr/I-10 eastbound On-Off Ramp intersection, could accommodate up to 20.7% of total site development. To advance this access point, widening/improvement of the UPRR highway-grade rail crossing and significant improvements to the Jimmie Kerr intersections with the I-10 ramps will be needed.

- The I-8/Henness traffic interchange is identified to accommodate up to 27.4% of total site development under typical single lane ramp considerations. The construction of the Henness TI will also help promote development of the Casa Grande Mountain Ranch development south of I-8.

The following recommendations are presented.

- Improvements to the Jimmie Kerr / I-10 Eastbound On-Off Ramp intersection is required to accommodate site traffic and existing non-site traffic movements at site opening. The extent of improvements should consider the potential of a site access at Cox Road, timing of the I-8/Henness traffic interchange, and site development intensity.

- Trigger thresholds have been identified at opening year for the following levels of total site occupancy (excludes I-10/Jimmie Kerr intersection considerations):

    - Up to 2.7% - Requires no roadway improvements.
    - Up to 4.5% - Requires improvement to the northbound Peart Road approach to Jimmie Kerr, signal phasing changes, and improvement / widening of the UPRR rail crossing at Peart Road.
    - Up to 11.0% - Requires spot widening of the Jimmie Kerr Boulevard approaches at Peart Road to two lanes, dual westbound left turn lanes, and southbound Peart Road widening to accommodate two lanes.
    - Up to 14.5% - Requires further/ultimate widening/improvement to the Jimmie Kerr / Peart Road intersection, requires Jimmie Kerr to be widened to a 4-lane roadway between Peart and the I-10 ramps, improvement of the I-10 Westbound On-Off ramp intersection with Jimmie Kerr, and widening of the west access road to a 4-lane design.
    - Up to 24.9% - Requires a second west access road intersection to Jimmie Kerr and acceptable access to/from I-10.
    - Up to 26.8% - Requires the I-8/Henness interchange and is the maximum site occupancy that can be accommodated by the single site access point planned for opening year.
    - The west access roadway could potentially accommodate up to 49.6% of total site occupancy, but requires a second site access. The I-8/Henness TI is estimated to accommodate up to 27.4% of site development and a Cox Road access is estimated to accommodate up to 20.7% of site traffic.

- As more details become evident for opening year, including specific tenants and their land uses, building layout designs, and site access needs, traffic impact studies should be prepared for each construction phase. This will provide more detail into specific improvements that are required along with the timing of such improvements.

APPENDIX

File Name: 11-1019-001
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 001
Location 1: Jimmie Kerr Blvd east of I-10

Time	East	Hourly Total	West	Hourly Total	Total
0:00:00	10		7		17
0:15:00	7		6		13
0:30:00	8		11		19
0:45:00	7	32	3	27	10
1:00:00	6		3		9
1:15:00	6		5		11
1:30:00	10		2		12
1:45:00	6	28	4	14	10
2:00:00	1		2		3
2:15:00	4		7		11
2:30:00	8		6		14
2:45:00	3	16	3	18	6
3:00:00	8		4		12
3:15:00	5		8		13
3:30:00	1		13		14
3:45:00	7	21	8	33	15
4:00:00	4		14		18
4:15:00	8		19		27
4:30:00	18		6		24
4:45:00	8	38	14	53	22
5:00:00	4		19		23
5:15:00	31		28		59
5:30:00	56		32		88
5:45:00	27	118	31	110	58
6:00:00	27		57		84
6:15:00	49		52		101
6:30:00	52		53		105
6:45:00	40	168	43	205	83
7:00:00	40		87		127
7:15:00	59		88		147
7:30:00	59		93		152
7:45:00	58	216	93	361	151
8:00:00	45		85		130
8:15:00	39		81		120
8:30:00	65		86		151
8:45:00	47	196	72	324	119
9:00:00	65		71		136
9:15:00	53		80		133
9:30:00	65		78		143
9:45:00	62	245	71	300	133
10:00:00	59		79		138
10:15:00	68		72		140
10:30:00	68		75		141
10:45:00	60	253	70	296	130
11:00:00	65		76		141
11:15:00	58		73		131
11:30:00	57		69		126
11:45:00	74	254	68	286	142
12:00:00	71		79		150
12:15:00	86		65		151
12:30:00	84		86		170
12:45:00	101	322	92	342	193
13:00:00	118		86		204
13:15:00	99		100		199
13:30:00	91		92		183
13:45:00	94	402	94	372	188
14:00:00	100		97		197
14:15:00	122		100		222
14:30:00	110		101		211
14:45:00	105	437	96	394	201
15:00:00	118		96		214
15:15:00	118		107		225
15:30:00	129		89		218
15:45:00	110	475	84	376	194
16:00:00	116		95		211
16:15:00	110		93		203
16:30:00	96		86		182
16:45:00	125	447	76	352	203
17:00:00	125		90		215
17:15:00	127		64		191
17:30:00	128		73		201
17:45:00	86	466	59	286	145
18:00:00	78		47		125
18:15:00	76		59		135
18:30:00	68		55		123
18:45:00	73	295	42	203	115
19:00:00	95		46		141
19:15:00	73		37		110
19:30:00	61		24		85
19:45:00	58	287	24	131	82
20:00:00	48		30		78
20:15:00	54		23		77
20:30:00	56		32		88
20:45:00	51	209	18	103	69
21:00:00	49		18		67
21:15:00	30		15		45
21:30:00	45		21		66
21:45:00	33	157	26	80	59
22:00:00	31		16		47
22:15:00	29		28		57
22:30:00	27		13		40
22:45:00	20	107	12	69	32
23:00:00	23		19		42
23:15:00	18		16		34
23:30:00	31		10		41
23:45:00	14	86	7	52	21
24 Hr. Totals	5275		4787		10062
AM Peak Hr	11:45		7:00		
AM Peak Hr Total	295		361		
PM Peak Hr	16:45		14:30		
PM Peak Hr Total	505		400		

PC - 193 EB 183 WB

361

376

File Name: 11-1019-002
Start Date: 2/24/2011
Start Time: 12:00:00 AM
Site Code: 002
Location 1: I-10 & SR-84 NB Off Ramp

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	0		0		0
0:15:00	0		0		0
0:30:00	0		0		0
0:45:00	1	1	0	0	1
1:00:00	0		0		0
1:15:00	0		0		0
1:30:00	0		0		0
1:45:00	1	1	0	0	1
2:00:00	1		0		1
2:15:00	0		0		0
2:30:00	0		0		0
2:45:00	0	1	0	0	0
3:00:00	0		0		0
3:15:00	0		0		0
3:30:00	0		0		0
3:45:00	1	1	0	0	1
4:00:00	0		0		0
4:15:00	0		0		0
4:30:00	1		0		1
4:45:00	2	3	0	0	2
5:00:00	1		0		1
5:15:00	4		0		4
5:30:00	5		0		5
5:45:00	16	26	0	0	16
6:00:00	13		0		13
6:15:00	9		0		9
6:30:00	11		0		11
6:45:00	14	47	0	0	14
7:00:00	15		0		15
7:15:00	8		0		8
7:30:00	7		0		7
7:45:00	9	39	0	0	9
8:00:00	12		0		12
8:15:00	14		0		14
8:30:00	15		0		15
8:45:00	18	59	0	0	18
9:00:00	22		0		22
9:15:00	20		0		20
9:30:00	24		0		24
9:45:00	28	94	0	0	28
10:00:00	24		0		24
10:15:00	26		0		26
10:30:00	33		0		33
10:45:00	30	113	0	0	30
11:00:00	28		0		28
11:15:00	24		0		24
11:30:00	14		0		14
11:45:00	18	84	0	0	18
12:00:00	19		0		19
12:15:00	20		0		20
12:30:00	21		0		21
12:45:00	14	74	0	0	14
13:00:00	18		0		18
13:15:00	22		0		22
13:30:00	20		0		20
13:45:00	17	77	0	0	17
14:00:00	18		0		18
14:15:00	16		0		16
14:30:00	22		0		22
14:45:00	20	76	0	0	20
15:00:00	25		0		25
15:15:00	24		0		24
15:30:00	17		0		17
15:45:00	18	84	0	0	18
16:00:00	16		0		16
16:15:00	21		0		21
16:30:00	18		0		18
16:45:00	11	66	0	0	11
17:00:00	10		0		10
17:15:00	14		0		14
17:30:00	7		0		7
17:45:00	4	35	0	0	4
18:00:00	8		0		8
18:15:00	5		0		5
18:30:00	9		0		9
18:45:00	6	28	0	0	6
19:00:00	3		0		3
19:15:00	7		0		7
19:30:00	7		0		7
19:45:00	4	21	0	0	4
20:00:00	5		0		5
20:15:00	2		0		2
20:30:00	3		0		3
20:45:00	2	12	0	0	2
21:00:00	1		0		1
21:15:00	4		0		4
21:30:00	1		0		1
21:45:00	2	8	0	0	2
22:00:00	1		0		1
22:15:00	0		0		0
22:30:00	1		0		1
22:45:00	1	3	0	0	1
23:00:00	0		0		0
23:15:00	1		0		1
23:30:00	2		0		2
23:45:00	0	3	0	0	0
24 Hr. Totals	956		0		956

AM Peak Hr 10:15
AM Peak Hr Total 117

PM Peak Hr	14:30
PM Peak Hr Total	91

File Name: 11-1019-003
Start Date: 2/24/2011
Start Time: 12:00:00 AM
Site Code: 003
Location 1: I-10 & SR-84 NB On Ramp

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	2		0		2
0:15:00	1		0		1
0:30:00	4		0		4
0:45:00	1	8	0	0	1
1:00:00	0		0		0
1:15:00	1		0		1
1:30:00	2		0		2
1:45:00	1	4	0	0	1
2:00:00	0		0		0
2:15:00	1		0		1
2:30:00	2		0		2
2:45:00	1	4	0	0	1
3:00:00	5		0		5
3:15:00	2		0		2
3:30:00	6		0		6
3:45:00	3	16	0	0	3
4:00:00	5		0		5
4:15:00	8		0		8
4:30:00	11		0		11
4:45:00	14	38	0	0	14
5:00:00	18		0		18
5:15:00	7		0		7
5:30:00	4		0		4
5:45:00	8	37	0	0	8
6:00:00	11		0		11
6:15:00	15		0		15
6:30:00	16		0		16
6:45:00	21	63	0	0	21
7:00:00	25		0		25
7:15:00	24		0		24
7:30:00	26		0		26
7:45:00	19	94	0	0	19
8:00:00	20		0		20
8:15:00	21		0		21
8:30:00	14		0		14
8:45:00	32	87	0	0	32
9:00:00	30		0		30
9:15:00	39		0		39
9:30:00	32		0		32
9:45:00	28	129	0	0	28
10:00:00	24		0		24
10:15:00	21		0		21
10:30:00	25		0		25
10:45:00	21	91	0	0	21
11:00:00	19		0		19
11:15:00	22		0		22
11:30:00	29		0		29
11:45:00	32	102	0	0	32
12:00:00	33		0		33
12:15:00	30		0		30
12:30:00	32		0		32
12:45:00	28	123	0	0	28
13:00:00	24		0		24
13:15:00	26		0		26
13:30:00	41		0		41
13:45:00	28	119	0	0	28
14:00:00	24		0		24
14:15:00	29		0		29
14:30:00	33		0		33
14:45:00	30	116	0	0	30
15:00:00	32		0		32
15:15:00	28		0		28
15:30:00	24		0		24
15:45:00	41	125	0	0	41
16:00:00	42		0		42
16:15:00	28		0		28
16:30:00	24		0		24
16:45:00	26	120	0	0	26
17:00:00	22		0		22
17:15:00	20		0		20
17:30:00	21		0		21
17:45:00	14	77	0	0	14
18:00:00	18		0		18
18:15:00	11		0		11
18:30:00	14		0		14
18:45:00	9	52	0	0	9
19:00:00	12		0		12
19:15:00	14		0		14
19:30:00	8		0		8
19:45:00	7	41	0	0	7
20:00:00	5		0		5
20:15:00	6		0		6
20:30:00	3		0		3
20:45:00	2	16	0	0	2
21:00:00	5		0		5
21:15:00	2		0		2
21:30:00	4		0		4
21:45:00	1	12	0	0	1
22:00:00	5		0		5
22:15:00	2		0		2
22:30:00	1		0		1
22:45:00	0	8	0	0	0
23:00:00	1		0		1
23:15:00	2		0		2
23:30:00	1		0		1
23:45:00	0	4	0	0	0
24 Hr. Totals	1486		0		1486

AM Peak Hr 8:45
AM Peak Hr Total 133

25 ?

46

File Name: 11-1019-004
Start Date: 2/24/2011
Start Time: 12:00:00 AM
Site Code: 004
Location 1: I-10 & SR-84 SB Off Ramp

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	0		1		1
0:15:00	0		0		0
0:30:00	0		1		1
0:45:00	0	0	2	4	2
1:00:00	0		1		1
1:15:00	0		0		0
1:30:00	0		1		1
1:45:00	0	0	2	4	2
2:00:00	0		1		1
2:15:00	0		2		2
2:30:00	0		3		3
2:45:00	0	0	2	8	2
3:00:00	0		1		1
3:15:00	0		1		1
3:30:00	0		0		0
3:45:00	0	0	1	3	1
4:00:00	0		2		2
4:15:00	0		1		1
4:30:00	0		4		4
4:45:00	0	0	8	15	8
5:00:00	0		19		19
5:15:00	0		11		11
5:30:00	0		19		19
5:45:00	0	0	14	63	14
6:00:00	0		21		21
6:15:00	0		25		25
6:30:00	0		24		24
6:45:00	0	0	26	96	26
7:00:00	0		33		33
7:15:00	0		30		30
7:30:00	0		32		32
7:45:00	0	0	28	123	28
8:00:00	0		24		24
8:15:00	0		25		25
8:30:00	0		26		26
8:45:00	0	0	33	108	33
9:00:00	0		30		30
9:15:00	0		32		32
9:30:00	0		28		28
9:45:00	0	0	24	114	24
10:00:00	0		26		26
10:15:00	0		33		33
10:30:00	0		30		30
10:45:00	0	0	54	143	54
11:00:00	0		41		41
11:15:00	0		26		26
11:30:00	0		24		24
11:45:00	0	0	41	134	41
12:00:00	0		43		43
12:15:00	0		39		39
12:30:00	0		35		35
12:45:00	0	0	54	171	54
13:00:00	0		41		41
13:15:00	0		44		44
13:30:00	0		40		40
13:45:00	0	0	45	170	45
14:00:00	0		54		54
14:15:00	0		58		58
14:30:00	0		56		56
14:45:00	0	0	63	231	63
15:00:00	0		38		38
15:15:00	0		54		54
15:30:00	0		41		41
15:45:00	0	0	42	175	42
16:00:00	0		39		39
16:15:00	0		33		33
16:30:00	0		30		30
16:45:00	0	0	32	134	32
17:00:00	0		28		28
17:15:00	0		24		24
17:30:00	0		41		41
17:45:00	0	0	28	121	28
18:00:00	0		24		24
18:15:00	0		26		26
18:30:00	0		22		22
18:45:00	0	0	20	92	20
19:00:00	0		21		21
19:15:00	0		19		19
19:30:00	0		16		16
19:45:00	0	0	11	67	11
20:00:00	0		10		10
20:15:00	0		14		14
20:30:00	0		8		8
20:45:00	0	0	7	39	7
21:00:00	0		5		5
21:15:00	0		9		9
21:30:00	0		12		12
21:45:00	0	0	8	34	8
22:00:00	0		5		5
22:15:00	0		6		6
22:30:00	0		3		3
22:45:00	0	0	2	16	2
23:00:00	0		5		5
23:15:00	0		4		4
23:30:00	0		7		7
23:45:00	0	0	4	20	4
24 Hr. Totals	0		2085		2085
AM Peak Hr			10:15		
AM Peak Hr Total			156		

3 34

PM Peak Hr	14:00
PM Peak Hr Total	231

File Name: 11-1019-005
Start Date: 2/24/2011
Start Time: 12:00:00 AM
Site Code: 005
Location 1: I-10 & SR-84 SB On Ramp

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	0		2		2
0:15:00	0		1		1
0:30:00	0		0		0
0:45:00	0	0	1	4	1
1:00:00	0		2		2
1:15:00	0		1		1
1:30:00	0		0		0
1:45:00	0	0	0	3	0
2:00:00	0		1		1
2:15:00	0		2		2
2:30:00	0		1		1
2:45:00	0	0	0	4	0
3:00:00	0		0		0
3:15:00	0		0		0
3:30:00	0		1		1
3:45:00	0	0	2	3	2
4:00:00	0		1		1
4:15:00	0		5		5
4:30:00	0		2		2
4:45:00	0	0	6	14	6
5:00:00	0		3		3
5:15:00	0		2		2
5:30:00	0		5		5
5:45:00	0	0	4	14	4
6:00:00	0		7		7
6:15:00	0		4		4
6:30:00	0		8		8
6:45:00	0	0	9	28	9
7:00:00	0		14		14
7:15:00	0		15		15
7:30:00	0		18		18
7:45:00	0	0	14	61	14
8:00:00	0		11		11
8:15:00	0		10		10
8:30:00	0		14		14
8:45:00	0	0	15	50	15
9:00:00	0		16		16
9:15:00	0		11		11
9:30:00	0		10		10
9:45:00	0	0	17	54	17
10:00:00	0		15		15
10:15:00	0		12		12
10:30:00	0		13		13
10:45:00	0	0	18	58	18
11:00:00	0		17		17
11:15:00	0		18		18
11:30:00	0		22		22
11:45:00	0	0	20	77	20
12:00:00	0		22		22
12:15:00	0		20		20
12:30:00	0		21		21
12:45:00	0	0	17	80	17
13:00:00	0		18		18
13:15:00	0		22		22
13:30:00	0		20		20
13:45:00	0	0	23	83	23
14:00:00	0		21		21
14:15:00	0		14		14
14:30:00	0		18		18
14:45:00	0	0	22	75	22
15:00:00	0		20		20
15:15:00	0		24		24
15:30:00	0		21		21
15:45:00	0	0	19	84	19
16:00:00	0		16		16
16:15:00	0		21		21
16:30:00	0		14		14
16:45:00	0	0	18	69	18
17:00:00	0		16		16
17:15:00	0		13		13
17:30:00	0		11		11
17:45:00	0	0	10	50	10
18:00:00	0		14		14
18:15:00	0		15		15
18:30:00	0		8		8
18:45:00	0	0	7	44	7
19:00:00	0		5		5
19:15:00	0		9		9
19:30:00	0		7		7
19:45:00	0	0	2	23	2
20:00:00	0		1		1
20:15:00	0		4		4
20:30:00	0		1		1
20:45:00	0	0	5	11	5
21:00:00	0		2		2
21:15:00	0		6		6
21:30:00	0		3		3
21:45:00	0	0	2	13	2
22:00:00	0		1		1
22:15:00	0		1		1
22:30:00	0		0		0
22:45:00	0	0	1	3	1
23:00:00	0		2		2
23:15:00	0		1		1
23:30:00	0		0		0
23:45:00	0	0	0	3	0
24 Hr. Totals		0		986	908

AM Peak Hr 11:30
AM Peak Hr Total 84

3/5

PM Peak Hr	14:45
PM Peak Hr Total	87

File Name: 11-1019-162
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 162
Location 1: Selma Hwy east of I-10

Time	East	Hourly Total	West	Hourly Total	Total
0:00:00	0		2		2
0:15:00	0		1		1
0:30:00	1		1		2
0:45:00	2	3	0	4	2
1:00:00	0		0		0
1:15:00	1		2		3
1:30:00	1		0		1
1:45:00	0	2	0	2	0
2:00:00	1		0		1
2:15:00	0		1		1
2:30:00	1		1		2
2:45:00	0	2	0	2	0
3:00:00	1		2		3
3:15:00	1		1		2
3:30:00	1		0		1
3:45:00	1	4	1	4	2
4:00:00	1		2		3
4:15:00	2		4		6
4:30:00	0		4		4
4:45:00	2	5	2	12	4
5:00:00	4		6		10
5:15:00	6		4		10
5:30:00	1		4		5
5:45:00	2	13	5	19	7
6:00:00	5		8		13
6:15:00	14		6		20
6:30:00	9		13		22
6:45:00	14	42	15	42	29
7:00:00	6		11		17
7:15:00	14		19		33
7:30:00	11		14		25
7:45:00	5	36	16	60	21
8:00:00	7		15		22
8:15:00	7		12		19
8:30:00	9		15		24
8:45:00	2	25	17	59	19
9:00:00	7		9		16
9:15:00	4		12		16
9:30:00	8		13		21
9:45:00	8	27	11	45	19
10:00:00	10		5		15
10:15:00	7		7		14
10:30:00	5		8		13
10:45:00	8	30	11	31	19
11:00:00	5		9		14
11:15:00	9		5		14
11:30:00	6		7		13
11:45:00	3	23	8	29	11
12:00:00	9		8		17
12:15:00	6		7		13
12:30:00	7		8		15
12:45:00	7	29	10	33	17
13:00:00	17		10		27
13:15:00	12		11		23
13:30:00	6		10		16
13:45:00	8	43	13	44	21
14:00:00	11		18		29
14:15:00	9		11		20
14:30:00	14		12		25
14:45:00	18	52	16	57	34
15:00:00	14		10		24
15:15:00	10		16		26
15:30:00	11		15		26
15:45:00	19	54	15	56	34
16:00:00	7		13		20
16:15:00	17		19		36
16:30:00	17		13		30
16:45:00	20	61	15	60	35
17:00:00	19		11		30
17:15:00	16		10		26
17:30:00	12		9		21
17:45:00	19	66	7	37	26
18:00:00	11		8		19
18:15:00	7		6		13
18:30:00	11		6		17
18:45:00	9	38	6	26	15
19:00:00	8		6		14
19:15:00	4		4		8
19:30:00	5		3		8
19:45:00	2	19	6	19	8
20:00:00	7		3		10
20:15:00	5		2		7
20:30:00	4		1		5
20:45:00	2	18	2	8	4
21:00:00	1		3		4
21:15:00	9		3		12
21:30:00	3		3		6
21:45:00	2	15	0	9	2
22:00:00	4		1		5
22:15:00	3		3		6
22:30:00	1		1		2
22:45:00	4	12	2	7	6
23:00:00	1		3		4
23:15:00	1		4		5
23:30:00	1		1		2
23:45:00	1	4	0	8	1
24 Hr. Totals		623		673	1296
AM Peak Hr		6:45		7:15	
AM Peak Hr Total		45		64	

PM Peak Hr	16:15	15:30
PM Peak Hr Total	73	62

File Name: 11-1019-184
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 184
Location 1: Selma Hwy east of Jimmie Kerr Blvd

Time	East	Hourly Total	West	Hourly Total	Total
0:00:00	1		2		3
0:15:00	0		2		2
0:30:00	3		2		5
0:45:00	1	5	0	6	1
1:00:00	2		0		2
1:15:00	2		1		3
1:30:00	1		0		1
1:45:00	0	5	0	1	0
2:00:00	1		0		1
2:15:00	0		1		1
2:30:00	1		1		2
2:45:00	0	2	0	2	0
3:00:00	1		2		3
3:15:00	1		2		3
3:30:00	1		0		1
3:45:00	1	4	0	4	1
4:00:00	1		3		4
4:15:00	2		1		3
4:30:00	0		5		5
4:45:00	1	4	3	12	4
5:00:00	5		4		9
5:15:00	7		7		14
5:30:00	4		7		11
5:45:00	5	21	6	24	11
6:00:00	4		7		11
6:15:00	14		7		21
6:30:00	10		12		22
6:45:00	14	42	23	49	37
7:00:00	7		21		28
7:15:00	18		22		40
7:30:00	15		20		35
7:45:00	12	52	10	79	26
8:00:00	7		15		22
8:15:00	6		28		34
8:30:00	12		18		30
8:45:00	6	31	15	76	21
9:00:00	6		12		18
9:15:00	4		20		24
9:30:00	10		13		23
9:45:00	8	28	20	65	28
10:00:00	12		9		21
10:15:00	11		5		16
10:30:00	10		7		17
10:45:00	8	41	8	29	16
11:00:00	7		14		21
11:15:00	5		11		16
11:30:00	9		7		16
11:45:00	6	27	8	40	14
12:00:00	11		8		19
12:15:00	8		9		17
12:30:00	12		22		34
12:45:00	11	42	18	57	29
13:00:00	23		6		29
13:15:00	15		13		28
13:30:00	9		19		28
13:45:00	8	55	18	56	26
14:00:00	14		13		27
14:15:00	14		20		34
14:30:00	20		9		29
14:45:00	15	63	22	64	37
15:00:00	18		18		36
15:15:00	14		20		34
15:30:00	19		16		35
15:45:00	18	69	22	76	40
16:00:00	10		16		26
16:15:00	21		18		38
16:30:00	19		20		39
16:45:00	22	72	18	72	40
17:00:00	26		12		38
17:15:00	19		14		33
17:30:00	18		11		29
17:45:00	22	85	11	48	33
18:00:00	13		15		28
18:15:00	9		5		14
18:30:00	13		16		29
18:45:00	16	51	7	43	23
19:00:00	9		8		17
19:15:00	5		4		9
19:30:00	9		9		18
19:45:00	6	29	4	25	10
20:00:00	10		3		13
20:15:00	4		4		8
20:30:00	10		3		13
20:45:00	3	27	4	14	7
21:00:00	3		6		9
21:15:00	10		4		14
21:30:00	5		3		8
21:45:00	3	21	3	16	6
22:00:00	6		2		8
22:15:00	6		4		10
22:30:00	3		2		5
22:45:00	2	17	2	10	4
23:00:00	1		1		2
23:15:00	1		6		7
23:30:00	2		1		3
23:45:00	1	5	1	9	2
24 Hr. Totals	798		877		1675
AM Peak Hr	6:45		6:45		
AM Peak Hr Total	54		86		

PM Peak Hr	16:15	14:45
PM Peak Hr Total	86	76

File Name: 11-1019-185
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 185
Location 1: Jimmie Kerr Blvd east of Selma Hwy

Time	East	Hourly Total	West	Hourly Total	Total
0:00:00	6		8		14
0:15:00	7		7		14
0:30:00	7		8		15
0:45:00	6	26	2	25	8
1:00:00	7		3		10
1:15:00	5		4		9
1:30:00	9		3		12
1:45:00	4	25	2	12	6
2:00:00	2		4		6
2:15:00	3		4		7
2:30:00	7		4		11
2:45:00	5	17	2	14	7
3:00:00	6		2		8
3:15:00	6		10		16
3:30:00	1		14		15
3:45:00	7	20	9	35	16
4:00:00	4		19		23
4:15:00	15		25		40
4:30:00	9		10		19
4:45:00	7	35	10	64	17
5:00:00	9		17		26
5:15:00	38		36		74
5:30:00	28		31		59
5:45:00	18	93	28	112	46
6:00:00	34		48		82
6:15:00	42		46		88
6:30:00	34		67		101
6:45:00	42	152	47	208	89
7:00:00	45		88		133
7:15:00	57		95		152
7:30:00	64		100		164
7:45:00	48	214	88	371	136
8:00:00	47		87		134
8:15:00	48		88		134
8:30:00	76		91		167
8:45:00	62	231	63	329	125
9:00:00	54		89		143
9:15:00	72		94		166
9:30:00	69		78		147
9:45:00	62	257	67	328	129
10:00:00	61		98		159
10:15:00	76		66		142
10:30:00	69		69		138
10:45:00	66	272	74	307	140
11:00:00	60		80		140
11:15:00	65		88		153
11:30:00	58		85		143
11:45:00	57	240	75	328	132
12:00:00	75		69		144
12:15:00	88		100		188
12:30:00	101		92		193
12:45:00	125	369	99	360	224
13:00:00	100		93		193
13:15:00	95		83		179
13:30:00	94		82		176
13:45:00	92	382	85	343	177
14:00:00	103		95		198
14:15:00	107		95		202
14:30:00	104		87		191
14:45:00	117	431	94	371	211
15:00:00	133		95		228
15:15:00	124		113		237
15:30:00	104		89		193
15:45:00	129	490	79	376	208
16:00:00	119		114		233
16:15:00	106		102		208
16:30:00	113		74		187
16:45:00	131	469	83	373	214
17:00:00	118		84		202
17:15:00	126		70		196
17:30:00	110		71		181
17:45:00	87	441	58	283	145
18:00:00	95		44		139
18:15:00	81		57		136
18:30:00	61		44		105
18:45:00	74	311	45	190	119
19:00:00	72		51		123
19:15:00	70		32		102
19:30:00	47		24		71
19:45:00	43	232	26	133	69
20:00:00	48		30		78
20:15:00	49		26		75
20:30:00	40		31		71
20:45:00	45	182	18	105	63
21:00:00	47		15		62
21:15:00	27		16		43
21:30:00	35		24		59
21:45:00	36	145	26	81	62
22:00:00	25		14		39
22:15:00	25		14		39
22:30:00	21		11		32
22:45:00	15	87	12	51	28
23:00:00	17		15		32
23:15:00	13		17		30
23:30:00	19		7		26
23:45:00	15	64	8	47	23
24 Hr. Totals	5185		4846		10031
AM Peak Hr	11:45		7:00		
AM Peak Hr Total	301		371		

208 330 371

231

490 394

PM Peak Hr	15:00	15:15
PM Peak Hr Total	490	395

File Name: 11-1019-186
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 186
Location 1: Pearl Rd north of Jimmie Kerr Blvd

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	3		3		6
0:15:00	2		3		5
0:30:00	3		1		4
0:45:00	0	8	4	11	4
1:00:00	1		0		1
1:15:00	3		1		4
1:30:00	2		2		4
1:45:00	0	6	0	3	0
2:00:00	3		0		3
2:15:00	1		1		2
2:30:00	1		0		1
2:45:00	1	6	0	1	1
3:00:00	0		1		1
3:15:00	2		0		2
3:30:00	5		2		7
3:45:00	2	9	1	4	3
4:00:00	3		4		7
4:15:00	6		2		8
4:30:00	3		4		7
4:45:00	4	16	1	11	5
5:00:00	10		9		19
5:15:00	7		9		16
5:30:00	11		15		26
5:45:00	8	36	12	45	20
6:00:00	13		14		27
6:15:00	17		23		40
6:30:00	22		18		40
6:45:00	28	81	29	84	58
7:00:00	44		23		67
7:15:00	51		19		70
7:30:00	48		42		90
7:45:00	45	188	25	109	70
8:00:00	42		23		65
8:15:00	41		31		72
8:30:00	46		23		69
8:45:00	28	157	30	107	58
9:00:00	36		33		69
9:15:00	25		30		55
9:30:00	44		34		78
9:45:00	33	138	33	130	66
10:00:00	30		29		59
10:15:00	32		28		60
10:30:00	28		29		57
10:45:00	38	128	38	124	76
11:00:00	49		33		82
11:15:00	40		56		96
11:30:00	45		38		83
11:45:00	32	166	47	174	79
12:00:00	45		46		91
12:15:00	47		47		94
12:30:00	46		43		89
12:45:00	35	173	55	191	90
13:00:00	39		51		90
13:15:00	38		39		77
13:30:00	39		51		90
13:45:00	30	146	47	188	77
14:00:00	51		50		101
14:15:00	43		51		94
14:30:00	39		55		94
14:45:00	37	170	57	213	94
15:00:00	54		46		100
15:15:00	46		57		103
15:30:00	55		54		109
15:45:00	38	193	59	216	97
16:00:00	45		61		106
16:15:00	52		34		86
16:30:00	44		46		90
16:45:00	44	185	60	201	104
17:00:00	39		47		86
17:15:00	42		50		92
17:30:00	37		41		78
17:45:00	35	153	26	164	61
18:00:00	27		46		73
18:15:00	27		33		60
18:30:00	22		38		60
18:45:00	20	96	43	160	63
19:00:00	26		32		58
19:15:00	15		32		47
19:30:00	17		34		51
19:45:00	17	75	20	118	37
20:00:00	13		24		37
20:15:00	13		18		31
20:30:00	13		13		26
20:45:00	11	50	16	71	27
21:00:00	6		15		21
21:15:00	9		10		19
21:30:00	12		9		21
21:45:00	3	30	14	48	17
22:00:00	3		10		13
22:15:00	3		5		8
22:30:00	5		10		15
22:45:00	7	18	8	33	15
23:00:00	3		8		11
23:15:00	3		3		6
23:30:00	2		9		11
23:45:00	3	11	2	22	5
24 Hr. Totals	2239		2428		4667
AM Peak Hr	7:00		11:15		
AM Peak Hr Total	188		187		

17

102 121

231

PM Peak Hr	15:00	15:15
PM Peak Hr Total	193	231

File Name: 11-1019-187
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 187
Location 1: Pearl Rd south of Jimmie Kerr Blvd

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	0		0		0
0:15:00	0		0		0
0:30:00	0		0		0
0:45:00	0	0	0	0	0
1:00:00	0		0		0
1:15:00	0		1		1
1:30:00	1		0		1
1:45:00	0	1	0	1	0
2:00:00	0		0		0
2:15:00	0		0		0
2:30:00	0		0		0
2:45:00	0	0	1	1	1
3:00:00	5		0		5
3:15:00	1		0		1
3:30:00	0		1		1
3:45:00	2	8	0	1	2
4:00:00	1		0		1
4:15:00	2		1		3
4:30:00	1		1		2
4:45:00	2	6	1	3	3
5:00:00	0		0		0
5:15:00	5		2		7
5:30:00	4		6		10
5:45:00	3	12	2	10	5
6:00:00	3		4		7
6:15:00	5		7		12
6:30:00	9		17		26
6:45:00	10	27	7	35	17
7:00:00	5		2		7
7:15:00	9		5		14
7:30:00	10		17		27
7:45:00	24 *	48	20	44	44
8:00:00	9		12		21
8:15:00	15		11		26
8:30:00	12		7		19
8:45:00	13	49	7	37	20
9:00:00	2		5		7
9:15:00	8		7		15
9:30:00	9		8		17
9:45:00	9	28	12	32	21
10:00:00	10		9		19
10:15:00	10		13		23
10:30:00	14		12		26
10:45:00	8	42	10	44	18
11:00:00	11		8		19
11:15:00	14		12		26
11:30:00	19		9		28
11:45:00	12	56	10	39	22
12:00:00	19		8		27
12:15:00	18		9		27
12:30:00	12		12		24
12:45:00	10	59	9	38	19
13:00:00	9		13		22
13:15:00	12		8		20
13:30:00	11		13		24
13:45:00	16	48	14	48	30
14:00:00	15		11		26
14:15:00	22		9		31
14:30:00	9		6		15
14:45:00	21	67	11	37	32
15:00:00	14		8		22
15:15:00	14		7		21
15:30:00	4		16		20
15:45:00	7	39	5	36	12
16:00:00	18		12		30
16:15:00	8 *		7		15
16:30:00	18 *		6		24
16:45:00	19 *	63	8	33	27
17:00:00	10		7		17
17:15:00	9		8		17
17:30:00	12		8		20
17:45:00	16	47	8	31	24
18:00:00	7		7		14
18:15:00	4		6		10
18:30:00	7		6		13
18:45:00	9	27	11	30	20
19:00:00	9		9		18
19:15:00	1		8		9
19:30:00	3		9		12
19:45:00	3	16	7	33	10
20:00:00	4		2		6
20:15:00	3		1		4
20:30:00	1		2		3
20:45:00	1	9	5	10	6
21:00:00	2		2		4
21:15:00	0		3		3
21:30:00	4		0		4
21:45:00	3	9	2	7	5
22:00:00	0		1		1
22:15:00	2		1		3
22:30:00	0		0		0
22:45:00	1	3	0	2	1
23:00:00	2		0		2
23:15:00	0		0		0
23:30:00	2		1		3
23:45:00	0	4	1	2	1
24 Hr. Totals	668		554		1222
AM Peak Hr	11:30		7:30		
AM Peak Hr Total	68		50		

W

63

PM Peak Hr	14:00	13:00
PM Peak Hr Total	87	48

File Name: 11-1019-188
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 188
Location 1: Jimmie Kerr Blvd west of Pearl Rd

Time	East	Hourly Total	West	Hourly Total	Total
0:00:00	9		9		18
0:15:00	9		3		12
0:30:00	11		3		14
0:45:00	5	34	5	20	10
1:00:00	7		4		11
1:15:00	7		5		12
1:30:00	3		6		9
1:45:00	3	20	1	16	4
2:00:00	4		2		6
2:15:00	6		2		8
2:30:00	2		10		12
2:45:00	2	14	7	21	9
3:00:00	5		4		9
3:15:00	3		10		13
3:30:00	3		19		22
3:45:00	7	18	5	38	12
4:00:00	5		10		16
4:15:00	11		23		34
4:30:00	13		24		37
4:45:00	18	46	18	75	34
5:00:00	21		21		42
5:15:00	27		34		61
5:30:00	25		35		60
5:45:00	17	90	37	127	54
6:00:00	21		39		60
6:15:00	49		56		105
6:30:00	52		55		107
6:45:00	53	175	55	205	108
7:00:00	53		84		137
7:15:00	63	*	94		157
7:30:00	89	*	110		199
7:45:00	79	* 284	85	373	164
8:00:00	73	*	58		131
8:15:00	51	*	66		117
8:30:00	60		78		138
8:45:00	63	247	73	275	136
9:00:00	57		66		123
9:15:00	58		73		131
9:30:00	45		71		116
9:45:00	49	209	60	270	109
10:00:00	88		66		154
10:15:00	80		69		149
10:30:00	87		75		162
10:45:00	48	303	62	272	110
11:00:00	77		95		172
11:15:00	70		99		169
11:30:00	79		78		157
11:45:00	89	315	79	351	168
12:00:00	88		108		196
12:15:00	70		81		151
12:30:00	93		77		170
12:45:00	79	330	91	357	170
13:00:00	86		81		167
13:15:00	86		73		159
13:30:00	80		89		169
13:45:00	91	343	95	338	186
14:00:00	93		96		189
14:15:00	101		114		215
14:30:00	106		92		198
14:45:00	103	403	96	398	199
15:00:00	129		106		235
15:15:00	112		98		210
15:30:00	117		113		230
15:45:00	101	459	97	414	198
16:00:00	88		101		189
16:15:00	91	*	101		192
16:30:00	97	*	97		194
16:45:00	103	* 369	77	376	180
17:00:00	96	*	88		184
17:15:00	80		74		154
17:30:00	68		77		143
17:45:00	79	321	71	310	150
18:00:00	81		88		169
18:15:00	53		59		112
18:30:00	55		56		111
18:45:00	62	251	46	249	108
19:00:00	51		47		98
19:15:00	38		36		74
19:30:00	44		35		79
19:45:00	36	171	27	145	65
20:00:00	40		22		62
20:15:00	38		28		66
20:30:00	36		27		63
20:45:00	29	143	26	103	55
21:00:00	35		14		49
21:15:00	24		21		45
21:30:00	15		21		36
21:45:00	17	91	19	75	36
22:00:00	18		17		35
22:15:00	25		10		35
22:30:00	9		17		26
22:45:00	18	70	10	54	28
23:00:00	16		10		26
23:15:00	17		17		34
23:30:00	16		12		28
23:45:00	15	64	13	52	28
24 Hr. Totals	4770		4914		9684
AM Peak Hr	11:45		7:00		
AM Peak Hr Total	340		373		

304

377

PM Peak Hr	14:45	15:00
PM Peak Hr Total	461	414

File Name: 11-1019-072
Start Date: 3/1/2011
Start Time: 12:00:00 AM
Site Code: 072
Location 1: Pearl Rd south of Earley Rd.

Time	North	Hourly Total	South	Hourly Total	Total
0:00:00	1		1		2
0:15:00	1		2		3
0:30:00	3		3		6
0:45:00	1	6	2	8	3
1:00:00	2		1		3
1:15:00	3		2		5
1:30:00	0		0		0
1:45:00	2	7	1	4	3
2:00:00	1		1		2
2:15:00	2		1		3
2:30:00	0		2		2
2:45:00	0	3	3	7	3
3:00:00	1		0		1
3:15:00	4		0		4
3:30:00	1		0		1
3:45:00	4	10	1	1	5
4:00:00	3		1		4
4:15:00	8		3		11
4:30:00	4		4		8
4:45:00	3	18	3	11	6
5:00:00	9		0		9
5:15:00	7		12		19
5:30:00	13		15		28
5:45:00	7	36	9	36	16
6:00:00	21		13		34
6:15:00	15		20		35
6:30:00	22		21		43
6:45:00	23	81	25	79	48
7:00:00	40		19		59
7:15:00	43		32		75
7:30:00	40		24		64
7:45:00	31	154	34	109	65
8:00:00	35		18		53
8:15:00	45		20		65
8:30:00	29		26		55
8:45:00	53	162	24	88	77
9:00:00	33		29		62
9:15:00	37		47		84
9:30:00	44		27		71
9:45:00	30	144	42	145	72
10:00:00	39		35		74
10:15:00	33		42		75
10:30:00	28		24		52
10:45:00	24	124	28	129	52
11:00:00	29		32		61
11:15:00	22		30		52
11:30:00	20		33		53
11:45:00	25	96	26	121	51
12:00:00	41		53		94
12:15:00	39		39		78
12:30:00	44		55		99
12:45:00	45	169	39	186	84
13:00:00	40		57		97
13:15:00	36		39		75
13:30:00	40		56		96
13:45:00	32	148	52	204	84
14:00:00	44		50		94
14:15:00	49		48		97
14:30:00	39		46		85
14:45:00	38	170	53	197	91
15:00:00	46		57		103
15:15:00	63		54		117
15:30:00	48		42		90
15:45:00	44	201	50	203	94
16:00:00	40		53		93
16:15:00	58		62		120
16:30:00	49		46		95
16:45:00	31	178	53	214	84
17:00:00	33		65		98
17:15:00	35		53		88
17:30:00	43		43		86
17:45:00	32	143	36	197	68
18:00:00	20		46		66
18:15:00	24		33		57
18:30:00	25		36		61
18:45:00	27	96	28	143	55
19:00:00	29		33		62
19:15:00	14		44		58
19:30:00	9		24		33
19:45:00	14	66	20	121	34
20:00:00	14		12		26
20:15:00	13		23		36
20:30:00	8		20		28
20:45:00	6	41	22	77	28
21:00:00	13		12		25
21:15:00	3		14		17
21:30:00	14		14		28
21:45:00	8	38	17	57	25
22:00:00	4		11		15
22:15:00	8		11		19
22:30:00	6		6		12
22:45:00	4	22	5	33	9
23:00:00	7		7		14
23:15:00	3		4		7
23:30:00	5		8		13
23:45:00	4	19	3	22	7
24 Hr. Totals	2132		2392		4524
AM Peak Hr	8:45		11:45		
AM Peak Hr Total	167		173		

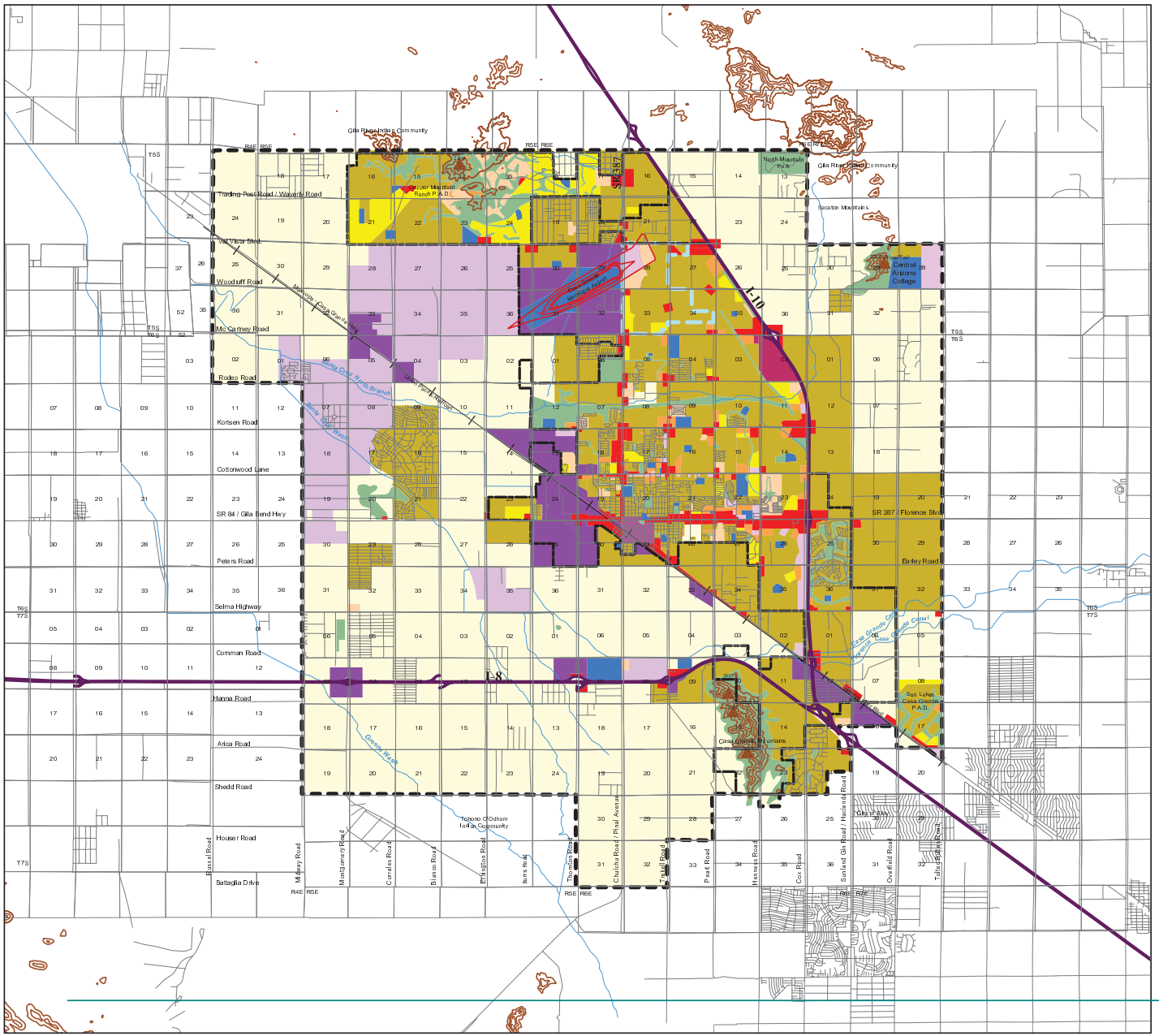
File Name: 11-1019-139
Start Date: 2/23/2011
Start Time: 12:00:00 AM
Site Code: 139
Location 1: Jimmie Kerr Blvd. west of Sunland Gin Rd.

Time	East	Hourly Total	West	Hourly Total	Total
0:00:00	11		9		20
0:15:00	10		12		22
0:30:00	8		14		22
0:45:00	7	36	8	43	15
1:00:00	5		7		12
1:15:00	8		5		13
1:30:00	5		8		13
1:45:00	9	27	6	25	14
2:00:00	6		9		15
2:15:00	3		6		9
2:30:00	2		8		10
2:45:00	5	16	7	30	12
3:00:00	4		11		15
3:15:00	7		14		21
3:30:00	4		18		22
3:45:00	8	23	24	67	32
4:00:00	11		29		40
4:15:00	10		33		43
4:30:00	14		30		44
4:45:00	8	43	32	124	40
5:00:00	11		41		52
5:15:00	24		45		69
5:30:00	41		55		96
5:45:00	45	121	50	191	95
6:00:00	55		58		113
6:15:00	50		57		107
6:30:00	58		74		132
6:45:00	63	226	79	268	142
7:00:00	66		85		151
7:15:00	60		122		182
7:30:00	74		121		195
7:45:00	78	278	133	461	211
8:00:00	88		104		192
8:15:00	80		87		167
8:30:00	87		85		172
8:45:00	75	330	89	365	164
9:00:00	58		104		162
9:15:00	59		101		160
9:30:00	63		108		171
9:45:00	66	246	97	400	153
10:00:00	80		65		145
10:15:00	54		122		176
10:30:00	74		120		194
10:45:00	89	277	104	431	193
11:00:00	111		87		198
11:15:00	104		85		189
11:30:00	101		96		197
11:45:00	108	424	99	367	207
12:00:00	79		103		182
12:15:00	85		111		196
12:30:00	88		104		192
12:45:00	103	355	108	426	211
13:00:00	101		85		186
13:15:00	108		89		197
13:30:00	87		96		183
13:45:00	122	418	99	369	221
14:00:00	128		111		239
14:15:00	124		104		228
14:30:00	143		87		230
14:45:00	139	534	96	398	235
15:00:00	133		122		255
15:15:00	111		104		215
15:30:00	104		122		226
15:45:00	128	476	120	468	248
16:00:00	122		104		226
16:15:00	120		104		224
16:30:00	133		85		218
16:45:00	141	516	89	382	230
17:00:00	145		103		248
17:15:00	159		101		260
17:30:00	139		85		224
17:45:00	133	576	88	377	221
18:00:00	111		80		191
18:15:00	101		74		175
18:30:00	87		59		146
18:45:00	85	384	66	279	151
19:00:00	66		54		120
19:15:00	60		52		112
19:30:00	54		29		83
19:45:00	42	222	33	168	75
20:00:00	41		30		71
20:15:00	44		32		76
20:30:00	47		28		75
20:45:00	42	174	24	114	66
21:00:00	32		21		53
21:15:00	28		14		42
21:30:00	24		16		40
21:45:00	29	113	12	63	41
22:00:00	22		8		30
22:15:00	20		11		31
22:30:00	21		14		35
22:45:00	14	77	18	51	32
23:00:00	16		8		24
23:15:00	8		5		13
23:30:00	7		6		13
23:45:00	9	40	3	22	12
24 Hr. Totals	5932		5889		11821
AM Peak Hr	11:00		7:15		
AM Peak Hr Total	424		480		

263

357

PM Peak Hr	16:45	15:00
PM Peak Hr Total	584	468



City of Casa Grande General Plan 2010

Future Land Use

Legend **Figure 3.1**

Land Use Designation

- Rural Residential (0-1 DU/AC*) Target ,5 DU/AC
- Low Density Residential (1-4 DU/AC) Target: 2.5 DU/AC
- Medium Density Residential #1 (4-8 DU/AC) Target: 5.0 DU/AC
- Medium Density Residential #2 (8-12 DU/AC) Target: 10.0 DU/AC
- High Density Residential (12-16 DU/AC) Target: 14.0 DU/AC
- Commercial
- Regional Commercial
- Office/Business Park
- Employment
- Natural Resource Extraction
- Public/Semi-Public
- Parks/Open Space
- Revitalization Area
- Master Planned Community (MPC)
- City Incorporated Boundary
- Planning Area Boundary
- Airport Noise Exposure Contours

* DU/AC = dwelling units per acre

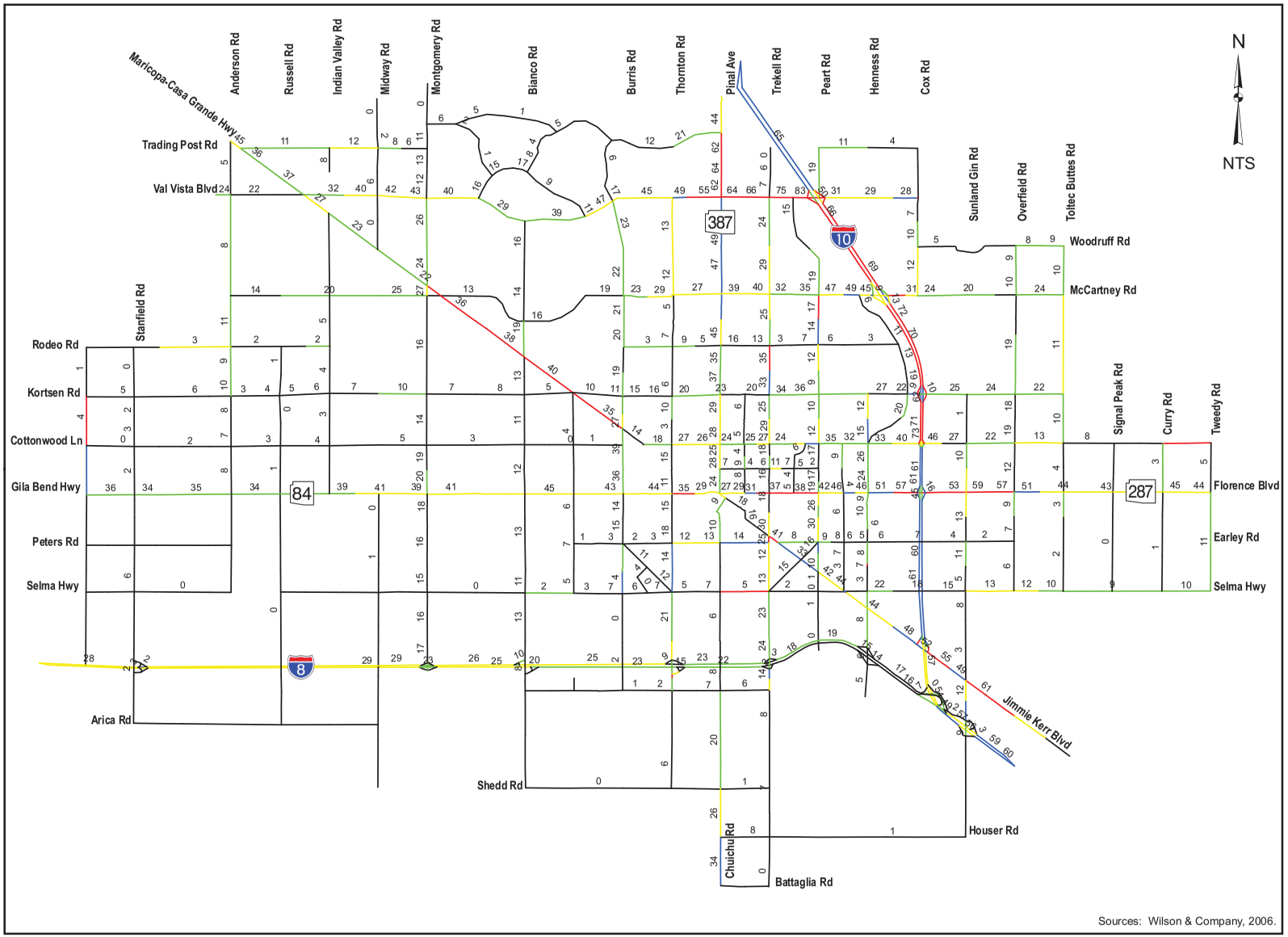
Note: A different target density for land designated Low Density Residential may be allowed depending on location. See Growth Areas and text in the General Plan document.

2 0 2 Miles

N W E S

Partners For Strategic Action, Inc.
Lima & Associates
January 2005

YEAR 2020 NEEDS NETWORK PERFORMANCE AND VOLUME ESTIMATES



Level of Service

- LOS A - B
- LOS C
- LOS D
- LOS E
- LOS F

XX - Daily Volume Estimates (thousands)

Note: These roadways do not account for all existing planned development, current roadway alignments, or vertical structures, and should not be construed as centerline or roadway alignments.

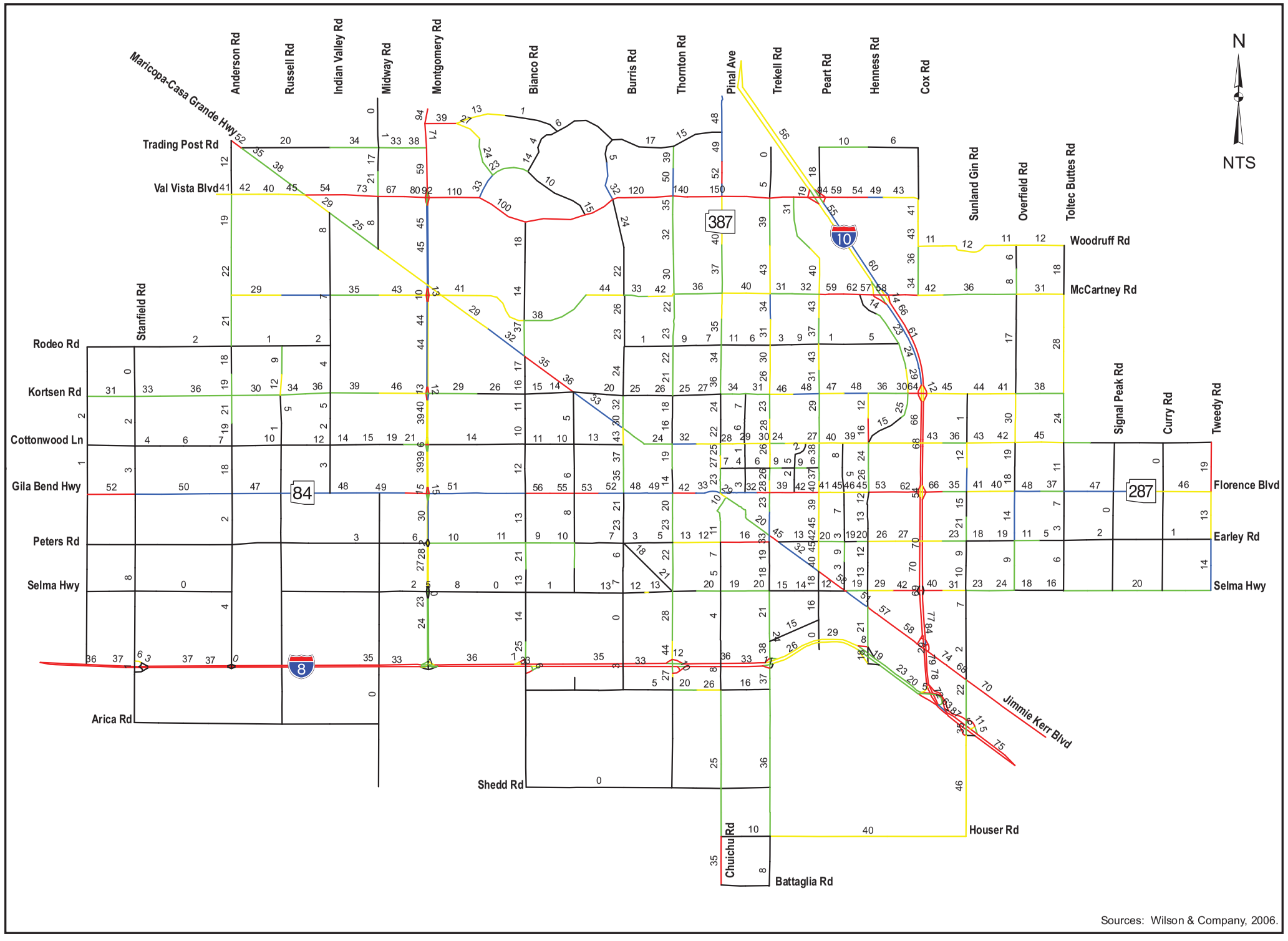
Sources: Wilson & Company, 2006.

FIGURE B-4

WILSON &COMPANY

2006 Casa Grande Small Area Transportation Study

YEAR 2030 NEEDS NETWORK PERFORMANCE AND VOLUME ESTIMATES



Sources: Wilson & Company, 2006.

Level of Service

- LOS A - B
- LOS C
- LOS D
- LOS E
- LOS F

XX - Daily Volume Estimates (thousands)

Note: These roadways do not account for all existing planned development, current roadway alignments, or vertical structures, and should not be construed as centerline or roadway alignments.

FIGURE B-6

Arizona Cities by Population

Arizona Cities by Population

Get a list of Arizona cities by population. The data are from the US Census 2010 dataset. Below are Arizona cities ranked 1 through 451. You can copy and paste this list directly into your favorite spreadsheet program. Don't you just adore lovely numbers listed nicely in columns & rows? We do!

Arizona Cities by Population Rank	City	Population
1	Phoenix	1,445,632
2	Tucson	520,116
3	Mesa	439,041
4	Chandler	236,123
5	Glendale	226,721
6	Scottsdale	217,385
7	Gilbert	208,453
8	Tempe	161,719
9	Peoria	154,065
10	Surprise	117,517
11	Yuma	93,064
12	San Tan Valley	81,321

13	Avondale	76,238
14	Casas Adobes	66,795
15	Flagstaff	65,870
16	Goodyear	65,275
17	Lake Havasu City	52,527
18	Buckeye	50,876
19	Catalina Foothills	50,796
20	Casa Grande	48,571
21	Sierra Vista	43,888
22	Maricopa	43,482
23	Oro Valley	41,011
24	Prescott	39,843
25	Bullhead City	39,540
26	Prescott Valley	38,822
27	Sun City	37,499
28	Apache Junction	35,840
29	Marana	34,961
30	El Mirage	31,797
31	Kingman	28,068
32	Drexel Heights	27,749
33	Queen Creek	26,361
34	Fortuna Foothills	26,265
35	Florence	25,536
36	San Luis	25,505
37	Sahuarita	25,259
38	Sun City West	24,535
39	Fountain Hills	22,489

40	Anthem	21,700
41	Green Valley	21,391
42	Nogales	20,837
43	Rio Rico	18,962
44	Douglas	17,378
45	Tanque Verde	16,901
46	Eloy	16,631
47	Flowing Wells	16,419
48	Payson	15,301
49	New River	14,952
50	Sierra Vista Southeast	14,797
51	Fort Mohave	14,364
52	Somerton	14,287
53	Sun Lakes	13,975
54	Paradise Valley	12,820
55	Tucson Estates	12,192
56	New Kingman-Butler	12,134
57	Coolidge	11,825
58	Verde Village	11,605
59	Cottonwood	11,265
60	Camp Verde	10,873
61	Chino Valley	10,817
62	Show Low	10,660
63	Arizona City	10,475
64	Vail	10,208
65	Gold Canyon	10,159
66	Sedona	10,031

67	Winslow	9,655
68	Saddlebrooke	9,614
69	Safford	9,566
70	Picture Rocks	9,563
71	Valencia West	9,355
72	Tuba City	8,611
73	Golden Valley	8,370
74	Catalina	7,569
75	Globe	7,532
76	Page	7,247
77	Tolleson	6,545
78	Wickenburg	6,363
79	Youngtown	6,156
80	Village of Oak Creek (Big Park)	6,147
81	Avra Valley	6,050
82	Corona de Tucson	5,675
83	South Tucson	5,652
84	Snowflake	5,590
85	Three Points	5,581
86	Bisbee	5,575
87	Guadalupe	5,523
88	Litchfield Park	5,476
89	Williamson	5,438
90	Doney Park	5,395
91	Summit	5,372
92	Paulden	5,231
93	Kayenta	5,189

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	262	32	6	270	134	22	34	10	106	21	7
Satd. Flow (prot)	1703	1760	0	1703	1699	0	0	1727	0	1703	1723	0
Flt Permitted	0.950			0.950				0.873		0.704		
Satd. Flow (perm)	1703	1760	0	1703	1699	0	0	1534	0	1262	1723	0
Satd. Flow (RTOR)		11			42			12			9	
Lane Group Flow (vph)	52	331	0	8	458	0	0	82	0	125	35	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Act Effct Green (s)	11.5	26.2		11.5	23.9			19.3		19.3	19.3	
Actuated g/C Ratio	0.28	0.64		0.28	0.58			0.47		0.47	0.47	
v/c Ratio	0.11	0.29		0.02	0.45			0.11		0.21	0.04	
Control Delay	17.6	11.5		17.8	18.0			12.2		14.5	11.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	17.6	11.5		17.8	18.0			12.2		14.5	11.8	
LOS	B	B		B	B			B		B	B	
Approach Delay		12.3			18.0			12.2			13.9	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	9	52		1	73			10		18	4	
Queue Length 95th (ft)	34	#191		10	#292			39		68	20	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	800	1128		800	1009			727		593	814	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.07	0.29		0.01	0.45			0.11		0.21	0.04	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 41	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

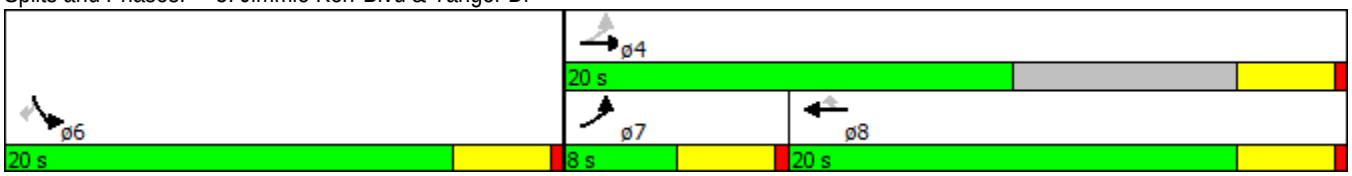
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	332	594	11	11	11
Satd. Flow (prot)	1703	1792	1792	1524	1703	1524
Flt Permitted	0.310				0.950	
Satd. Flow (perm)	556	1792	1792	1524	1703	1524
Satd. Flow (RTOR)				12		12
Lane Group Flow (vph)	12	369	660	12	12	12
Turn Type	pm+pt	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Total Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	29.4	32.6	31.2	31.2	5.8	5.8
Actuated g/C Ratio	0.83	0.92	0.88	0.88	0.16	0.16
v/c Ratio	0.02	0.22	0.42	0.01	0.04	0.05
Control Delay	1.7	1.7	7.5	3.0	13.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	1.7	7.5	3.0	13.1	8.4
LOS	A	A	A	A	B	A
Approach Delay		1.7	7.4		10.7	
Approach LOS		A	A		B	
Queue Length 50th (ft)	0	0	0	0	2	0
Queue Length 95th (ft)	4	54	#280	6	11	9
Internal Link Dist (ft)		12631	390		833	
Turn Bay Length (ft)	325			125		50
Base Capacity (vph)	592	1657	1582	1347	773	698
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.22	0.42	0.01	0.02	0.02

Intersection Summary	
Cycle Length: 48	
Actuated Cycle Length: 35.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 5.4	Intersection LOS: A
Intersection Capacity Utilization 41.3%	ICU Level of Service A
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Jimmie Kerr Blvd & Tanger Dr



Intersection	
Intersection Delay, s/veh	18.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	82	251	0	0	556	11	0	0	0	137	0	33
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	-	-	Stop
Storage Length	250	-	-	250	-	-	-	-	-	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	85	90	90	90	80	90	90	90	85	90	80
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	102	295	0	0	618	14	0	0	0	161	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	632	0	0	295	0	0	1125	1132	295	1125	1125	625
Stage 1	-	-	-	-	-	-	500	500	-	625	625	-
Stage 2	-	-	-	-	-	-	625	632	-	500	500	-
Follow-up Headway	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Capacity-1 Maneuver	932	-	-	1244	-	-	179	200	735	179	202	478
Stage 1	-	-	-	-	-	-	546	537	-	466	471	-
Stage 2	-	-	-	-	-	-	466	468	-	546	537	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	932	-	-	1244	-	-	150	178	735	164	180	478
Mov Capacity-2 Maneuver	-	-	-	-	-	-	150	178	-	164	180	-
Stage 1	-	-	-	-	-	-	486	478	-	415	471	-
Stage 2	-	-	-	-	-	-	426	468	-	486	478	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0	0	110.4
HCM LOS			A	F

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	0	932	-	-	1244	-	-	173	478
HCM Lane V/C Ratio	+	0.11	-	-	-	-	-	1.011	0.058
HCM Control Delay (s)	0	9.339	-	-	0	-	-	125.7	13
HCM Lane LOS	A	A			A			F	B
HCM 95th %tile Q(veh)	+	0.369	-	-	0	-	-	8.221	0.183

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	29	359	439	118	0	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	-	135	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	90	90	85	90	85
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	36	399	488	139	0	152

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	627	0	-	0	1028	557
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	471	-
Follow-up Headway	2.254	-	-	-	3.554	3.354
Pot Capacity-1 Maneuver	936	-	-	-	255	522
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	620	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	936	-	-	-	245	522
Mov Capacity-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	596	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.7
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	936	-	-	-	0	522
HCM Lane V/C Ratio	0.039	-	-	-	+	0.291
HCM Control Delay (s)	9.001	-	-	-	0	14.7
HCM Lane LOS	A				A	B
HCM 95th %tile Q(veh)	0.121	-	-	-	+	1.199

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	278	79	79	497	1	60	1	179	1	1	1
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	200	-	175	250	-	-	-	-	70	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	80	80	90	90	85	90	85	90	90	90
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	309	99	99	552	1	71	1	211	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	553	0	0	309	0	0	1062	1062	309	1062	1061	553
Stage 1	-	-	-	-	-	-	311	311	-	750	750	-
Stage 2	-	-	-	-	-	-	751	751	-	312	311	-
Follow-up Headway	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Capacity-1 Maneuver	997	-	-	1229	-	-	198	220	722	198	220	525
Stage 1	-	-	-	-	-	-	691	651	-	397	413	-
Stage 2	-	-	-	-	-	-	397	413	-	690	651	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	997	-	-	1229	-	-	184	202	722	131	202	525
Mov Capacity-2 Maneuver	-	-	-	-	-	-	184	202	-	131	202	-
Stage 1	-	-	-	-	-	-	690	650	-	397	380	-
Stage 2	-	-	-	-	-	-	363	380	-	487	650	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	19.8	22.7
HCM LOS			C	C

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	292	722	997	-	-	1229	-	-	207
HCM Lane V/C Ratio	0.486	0.194	0.001	-	-	0.08	-	-	0.016
HCM Control Delay (s)	28.4	11.2	8.615	-	-	8.185	-	-	22.7
HCM Lane LOS	D	B	A			A			C
HCM 95th %tile Q(veh)	2.502	0.717	0.003	-	-	0.262	-	-	0.049

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	383	20	21	320	83	23	38	9	212	12	31
Satd. Flow (prot)	1703	1778	0	1703	1737	0	0	1734	0	1703	1599	0
Flt Permitted	0.950			0.950				0.907		0.700		
Satd. Flow (perm)	1703	1778	0	1703	1737	0	0	1598	0	1255	1599	0
Satd. Flow (RTOR)		5			21			11			39	
Lane Group Flow (vph)	16	451	0	26	474	0	0	88	0	249	54	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Act Effct Green (s)	10.2	16.5		10.2	16.5			15.2		15.2	15.2	
Actuated g/C Ratio	0.23	0.37		0.23	0.37			0.34		0.34	0.34	
v/c Ratio	0.04	0.68		0.07	0.72			0.16		0.58	0.09	
Control Delay	15.6	21.8		15.8	22.9			11.2		21.2	7.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	15.6	21.8		15.8	22.9			11.2		21.2	7.0	
LOS	B	C		B	C			B		C	A	
Approach Delay		21.6			22.5			11.2			18.7	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	3	79		4	81			11		41	2	
Queue Length 95th (ft)	15	#299		21	#285			42		#155	21	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	585	665		585	660			556		431	575	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.03	0.68		0.04	0.72			0.16		0.58	0.09	

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 44.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 48.6%	ICU Level of Service A
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

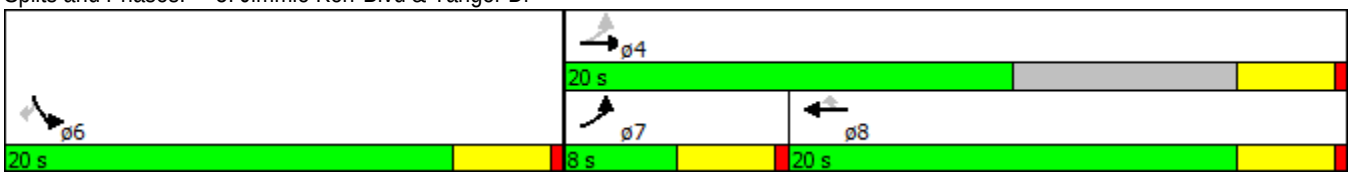
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	410	458	11	11	11
Satd. Flow (prot)	1703	1792	1792	1524	1703	1524
Flt Permitted	0.394				0.950	
Satd. Flow (perm)	706	1792	1792	1524	1703	1524
Satd. Flow (RTOR)				12		12
Lane Group Flow (vph)	12	456	509	12	12	12
Turn Type	pm+pt	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Total Split (s)	8.0	20.0	20.0	20.0	20.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	29.4	32.6	31.2	31.2	5.8	5.8
Actuated g/C Ratio	0.83	0.92	0.88	0.88	0.16	0.16
v/c Ratio	0.02	0.28	0.32	0.01	0.04	0.05
Control Delay	1.7	1.8	4.7	3.0	13.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	1.8	4.7	3.0	13.1	8.4
LOS	A	A	A	A	B	A
Approach Delay		1.8	4.7		10.7	
Approach LOS		A	A		B	
Queue Length 50th (ft)	0	0	0	0	2	0
Queue Length 95th (ft)	4	70	#168	6	11	9
Internal Link Dist (ft)		12631	390		833	
Turn Bay Length (ft)	325			125		50
Base Capacity (vph)	700	1657	1582	1347	773	698
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.28	0.32	0.01	0.02	0.02

Intersection Summary	
Cycle Length: 48	
Actuated Cycle Length: 35.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 3.5	Intersection LOS: A
Intersection Capacity Utilization 34.1%	ICU Level of Service A
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Jimmie Kerr Blvd & Tanger Dr



Intersection	
Intersection Delay, s/veh	21.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	87	322	0	0	437	8	0	0	0	145	0	110
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	-	-	Stop
Storage Length	250	-	-	250	-	-	-	-	-	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	90	90	90	80	90	90	90	85	90	85
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	102	379	0	0	486	10	0	0	0	171	0	129

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	379	0	0	1075	1080	379	1075	1075	491
Stage 1	-	-	-	-	-	-	584	584	-	491	491	-
Stage 2	-	-	-	-	-	-	491	496	-	584	584	-
Follow-up Headway	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Capacity-1 Maneuver	1047	-	-	1158	-	-	194	214	659	194	216	570
Stage 1	-	-	-	-	-	-	491	492	-	552	542	-
Stage 2	-	-	-	-	-	-	552	539	-	491	492	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1047	-	-	1158	-	-	139	193	659	180	195	570
Mov Capacity-2 Maneuver	-	-	-	-	-	-	139	193	-	180	195	-
Stage 1	-	-	-	-	-	-	443	444	-	498	542	-
Stage 2	-	-	-	-	-	-	427	539	-	443	444	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	0	86.6
HCM LOS			A	F

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	0	1047	-	-	1158	-	-	209	570
HCM Lane V/C Ratio	+	0.098	-	-	-	-	-	1.023	0.151
HCM Control Delay (s)	0	8.811	-	-	0	-	-	116.5	12.4
HCM Lane LOS	A	A			A			F	B
HCM 95th %tile Q(veh)	+	0.324	-	-	0	-	-	9.253	0.53

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	53	414	346	96	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	-	135	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	90	90	85	90	85
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	66	460	384	113	0	118

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	1034	441
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	593	-
Follow-up Headway	2.254	-	-	-	3.554	3.354
Pot Capacity-1 Maneuver	1047	-	-	-	253	608
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	544	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1047	-	-	-	237	608
Mov Capacity-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	510	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	12.3
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1047	-	-	-	0	608
HCM Lane V/C Ratio	0.063	-	-	-	+	0.193
HCM Control Delay (s)	8.671	-	-	-	0	12.3
HCM Lane LOS	A				A	B
HCM 95th %tile Q(veh)	0.202	-	-	-	+	0.712

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	300	113	113	383	1	57	1	176	1	1	1
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	200	-	175	250	-	-	-	-	70	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	85	85	90	90	80	90	85	90	90	90
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	1	333	133	133	426	1	71	1	207	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	427	0	0	333	0	0	1029	1029	333	1028	1028	426
Stage 1	-	-	-	-	-	-	336	336	-	692	692	-
Stage 2	-	-	-	-	-	-	693	693	-	336	336	-
Follow-up Headway	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Capacity-1 Maneuver	1111	-	-	1204	-	-	208	230	700	209	230	620
Stage 1	-	-	-	-	-	-	670	635	-	428	439	-
Stage 2	-	-	-	-	-	-	427	439	-	670	635	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1111	-	-	1204	-	-	189	204	700	134	204	620
Mov Capacity-2 Maneuver	-	-	-	-	-	-	189	204	-	134	204	-
Stage 1	-	-	-	-	-	-	669	634	-	428	391	-
Stage 2	-	-	-	-	-	-	378	391	-	471	634	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2	19.8	22
HCM LOS			C	C

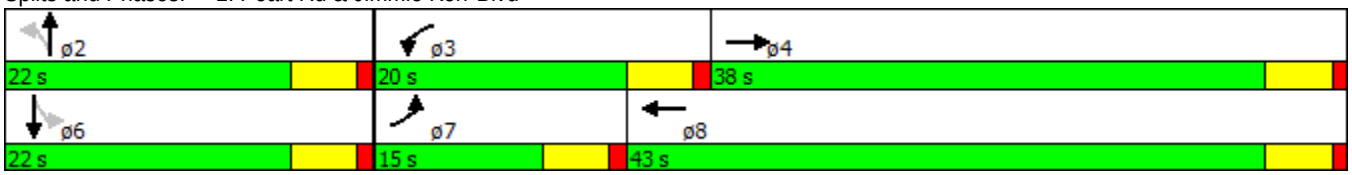
Minor Lane / Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	700	1111	-	-	1204	-	-	215
HCM Lane V/C Ratio	0.481	0.197	0.001	-	-	0.11	-	-	0.016
HCM Control Delay (s)	28.1	11.4	8.244	-	-	8.361	-	-	22
HCM Lane LOS	D	B	A			A			C
HCM 95th %tile Q(veh)	2.461	0.729	0.003	-	-	0.371	-	-	0.047

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	262	97	137	270	134	29	41	29	106	86	7
Satd. Flow (prot)	1703	1714	0	1703	1699	0	0	1697	0	1703	1771	0
Flt Permitted	0.950			0.950				0.881		0.676		
Satd. Flow (perm)	1703	1714	0	1703	1699	0	0	1516	0	1212	1771	0
Satd. Flow (RTOR)		32			45			24			5	
Lane Group Flow (vph)	52	412	0	161	458	0	0	123	0	125	117	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	15.0	38.0		20.0	43.0		22.0	22.0		22.0	22.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Act Effct Green (s)	10.0	33.6		12.4	42.3			15.5		15.5	15.5	
Actuated g/C Ratio	0.13	0.44		0.16	0.55			0.20		0.20	0.20	
v/c Ratio	0.23	0.54		0.59	0.48			0.38		0.51	0.32	
Control Delay	34.0	18.1		39.0	13.2			25.4		36.0	28.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	34.0	18.1		39.0	13.2			25.4		36.0	28.3	
LOS	C	B		D	B			C		D	C	
Approach Delay		19.9			19.9			25.4			32.2	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	23	125		74	131			42		55	47	
Queue Length 95th (ft)	50	229		124	227			77		101	81	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	222	770		333	958			355		269	397	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.23	0.54		0.48	0.48			0.35		0.46	0.29	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 76.6	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	

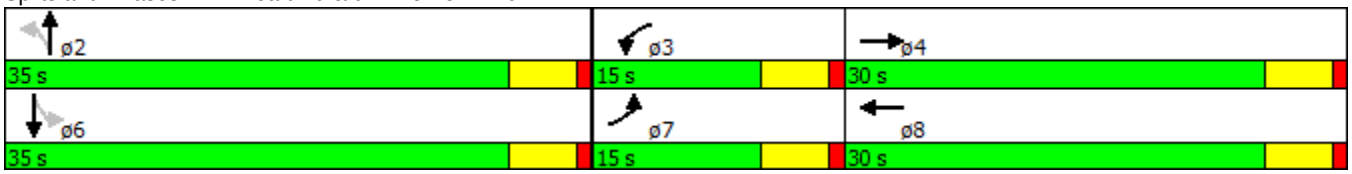
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	383	30	60	320	83	80	85	132	212	22	31
Satd. Flow (prot)	1703	1771	0	1703	1735	0	0	1663	0	1703	1637	0
Flt Permitted	0.950			0.950				0.893		0.468		
Satd. Flow (perm)	1703	1771	0	1703	1735	0	0	1505	0	839	1637	0
Satd. Flow (RTOR)		6			18			58			39	
Lane Group Flow (vph)	16	464	0	75	454	0	0	349	0	249	67	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	15.0	30.0		15.0	30.0		35.0	35.0		35.0	35.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Act Effct Green (s)	10.3	25.8		10.3	34.3			24.7		24.7	24.7	
Actuated g/C Ratio	0.14	0.36		0.14	0.48			0.34		0.34	0.34	
v/c Ratio	0.07	0.73		0.31	0.54			0.63		0.87	0.11	
Control Delay	31.6	31.5		35.3	19.2			22.5		53.3	9.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	31.6	31.5		35.3	19.2			22.5		53.3	9.3	
LOS	C	C		D	B			C		D	A	
Approach Delay		31.5			21.5			22.5			44.0	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	7	203		34	131			113		108	9	
Queue Length 95th (ft)	22	#373		66	#357			181		#214	28	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	244	638		244	835			680		361	726	
Starvation Cap Reductn	0	0		0	0			0		0	0	
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.07	0.73		0.31	0.54			0.51		0.69	0.09	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 72	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

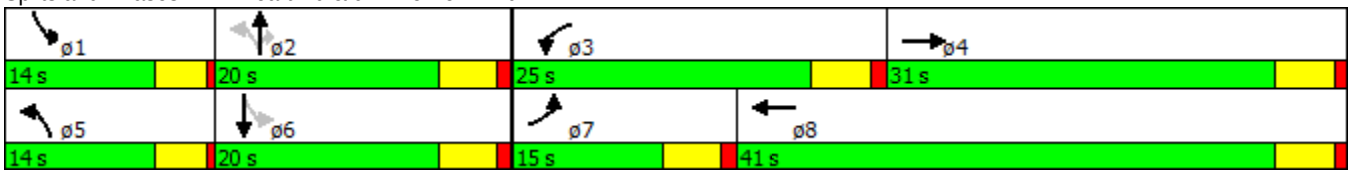
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	262	155	253	270	134	36	48	41	106	144	7
Satd. Flow (prot)	1703	1685	0	1703	1699	0	1703	1792	1524	1703	1780	0
Flt Permitted	0.950			0.950			0.581			0.642		
Satd. Flow (perm)	1703	1685	0	1703	1699	0	1041	1792	1524	1151	1780	0
Satd. Flow (RTOR)		38			35				194		2	
Lane Group Flow (vph)	52	485	0	298	458	0	45	60	51	125	189	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Total Split (s)	15.0	31.0		25.0	41.0		14.0	20.0	20.0	14.0	20.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Act Effct Green (s)	10.1	26.3		18.0	40.8		23.8	15.2	15.2	24.6	17.9	
Actuated g/C Ratio	0.12	0.31		0.21	0.48		0.28	0.18	0.18	0.29	0.21	
v/c Ratio	0.26	0.89		0.83	0.55		0.12	0.19	0.12	0.32	0.51	
Control Delay	40.3	48.6		53.7	20.6		21.6	34.1	0.6	24.1	37.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	40.3	48.6		53.7	20.6		21.6	34.1	0.6	24.1	37.6	
LOS	D	D		D	C		C	C	A	C	D	
Approach Delay		47.8			33.7			19.5			32.2	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	28	251		160	191		17	30	0	51	100	
Queue Length 95th (ft)	56	#448		#259	299		37	58	0	88	149	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	202	545		403	831		369	318	430	396	374	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.26	0.89		0.74	0.55		0.12	0.19	0.12	0.32	0.51	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 85.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

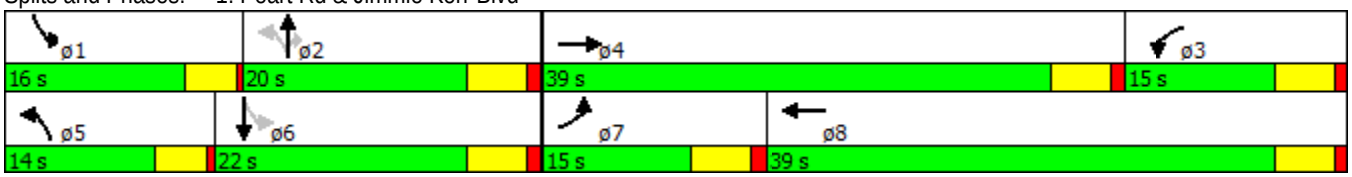
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	383	39	78	320	83	131	136	233	212	31	31
Satd. Flow (prot)	1703	1766	0	1703	1735	0	1703	1792	1524	1703	1658	0
Flt Permitted	0.950			0.950			0.706			0.448		
Satd. Flow (perm)	1703	1766	0	1703	1735	0	1265	1792	1524	803	1658	0
Satd. Flow (RTOR)		7			18				274		39	
Lane Group Flow (vph)	16	475	0	98	454	0	154	160	274	249	78	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Total Split (s)	15.0	39.0		15.0	39.0		14.0	20.0	20.0	16.0	22.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Act Effct Green (s)	10.1	34.2		10.1	42.9		26.2	15.1	15.1	30.3	20.1	
Actuated g/C Ratio	0.12	0.39		0.12	0.49		0.30	0.17	0.17	0.35	0.23	
v/c Ratio	0.08	0.68		0.50	0.52		0.36	0.51	0.56	0.62	0.19	
Control Delay	37.1	28.4		47.0	18.2		23.2	40.5	9.3	29.4	19.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	37.1	28.4		47.0	18.2		23.2	40.5	9.3	29.4	19.5	
LOS	D	C		D	B		C	D	A	C	B	
Approach Delay		28.7			23.3			21.4			27.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	8	222		53	143		61	84	0	105	19	
Queue Length 95th (ft)	24	338		91	315		101	138	54	160	48	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	197	701		197	867		433	311	491	406	413	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.08	0.68		0.50	0.52		0.36	0.51	0.56	0.61	0.19	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 86.7	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd

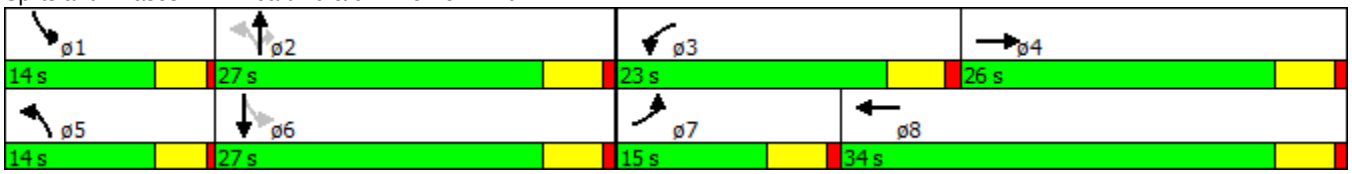


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	262	298	540	270	134	52	64	73	106	287	7
Satd. Flow (prot)	1703	3133	0	3303	3235	0	1703	1792	1524	1703	1787	0
Flt Permitted	0.950			0.950			0.245			0.705		
Satd. Flow (perm)	1703	3133	0	3303	3235	0	439	1792	1524	1264	1787	0
Satd. Flow (RTOR)		298			100				194		1	
Lane Group Flow (vph)	52	622	0	635	476	0	65	80	91	125	346	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Total Split (s)	15.0	26.0		23.0	34.0		14.0	27.0	27.0	14.0	27.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Act Effct Green (s)	10.1	21.3		17.9	35.7		28.7	20.1	20.1	28.7	20.1	
Actuated g/C Ratio	0.12	0.25		0.21	0.42		0.34	0.24	0.24	0.34	0.24	
v/c Ratio	0.26	0.62		0.91	0.34		0.22	0.19	0.18	0.26	0.82	
Control Delay	40.2	18.3		53.9	16.8		18.4	28.5	0.8	18.8	48.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	40.2	18.3		53.9	16.8		18.4	28.5	0.8	18.8	48.9	
LOS	D	B		D	B		B	C	A	B	D	
Approach Delay		20.0			38.0			15.0			40.9	
Approach LOS		B			D			B			D	
Queue Length 50th (ft)	28	85		186	86		22	36	0	44	184	
Queue Length 95th (ft)	56	143		#265	120		42	64	0	76	#287	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	202	1006		707	1417		298	469	542	478	468	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.26	0.62		0.90	0.34		0.22	0.17	0.17	0.26	0.74	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 85.1	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

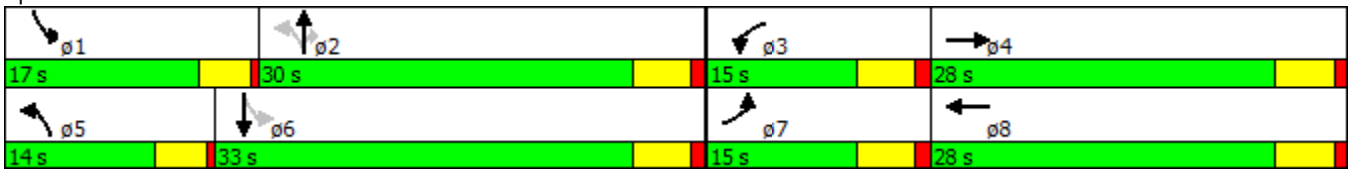
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	383	61	123	320	83	257	262	486	212	53	31
Satd. Flow (prot)	1703	3327	0	3303	3297	0	1703	1792	1524	1703	1692	0
Flt Permitted	0.950			0.950			0.616			0.371		
Satd. Flow (perm)	1703	3327	0	3303	3297	0	1104	1792	1524	665	1692	0
Satd. Flow (RTOR)		22			37				395		34	
Lane Group Flow (vph)	16	502	0	154	454	0	302	308	572	249	105	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Total Split (s)	15.0	28.0		15.0	28.0		14.0	30.0	30.0	17.0	33.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	5.0	5.0	4.0	5.0	
Act Effct Green (s)	10.0	23.1		10.0	35.3		32.7	20.6	20.6	32.5	22.7	
Actuated g/C Ratio	0.12	0.27		0.12	0.41		0.38	0.24	0.24	0.38	0.27	
v/c Ratio	0.08	0.55		0.40	0.33		0.57	0.71	0.86	0.62	0.22	
Control Delay	36.7	28.7		39.3	18.4		21.9	39.2	23.5	23.6	17.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	36.7	28.7		39.3	18.4		21.9	39.2	23.5	23.6	17.5	
LOS	D	C		D	B		C	D	C	C	B	
Approach Delay		29.0			23.7			27.2			21.8	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	8	118		40	74		105	152	90	83	29	
Queue Length 95th (ft)	24	177		64	155		154	223	199	126	58	
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	165			140						120		
Base Capacity (vph)	200	918		389	1389		527	528	727	418	581	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.08	0.55		0.40	0.33		0.57	0.58	0.79	0.60	0.18	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 85.1	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

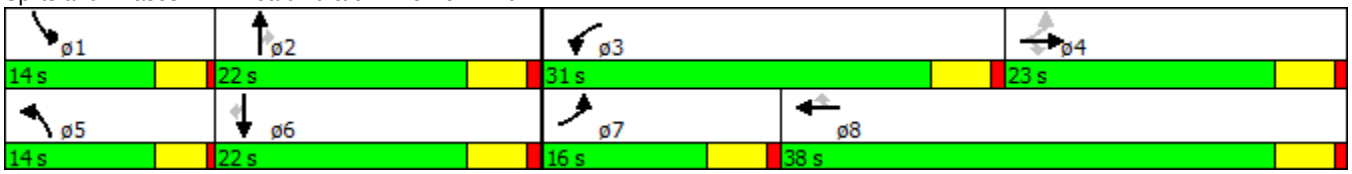
Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	262	363	710	270	134	61	73	92	106	372	7
Satd. Flow (prot)	1703	4893	1524	3303	4893	1524	3303	3406	1524	3303	3406	1524
Flt Permitted	0.562			0.950			0.950			0.950		
Satd. Flow (perm)	1007	4893	1524	3303	4893	1524	3303	3406	1524	3303	3406	1524
Satd. Flow (RTOR)			260			149			194			194
Lane Group Flow (vph)	47	291	403	789	300	149	68	81	102	118	413	8
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Total Split (s)	16.0	23.0	23.0	31.0	38.0	38.0	14.0	22.0	22.0	14.0	22.0	22.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Act Effct Green (s)	28.5	18.3	18.3	23.4	38.4	38.4	10.2	16.2	16.2	10.2	16.2	16.2
Actuated g/C Ratio	0.34	0.22	0.22	0.28	0.46	0.46	0.12	0.19	0.19	0.12	0.19	0.19
v/c Ratio	0.11	0.27	0.75	0.86	0.13	0.19	0.17	0.12	0.23	0.29	0.63	0.02
Control Delay	12.8	29.8	22.6	39.6	16.1	4.1	37.2	31.0	1.2	38.3	37.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	29.8	22.6	39.6	16.1	4.1	37.2	31.0	1.2	38.3	37.3	0.1
LOS	B	C	C	D	B	A	D	C	A	D	D	A
Approach Delay		24.8			29.7			20.5			37.0	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	11	50	73	211	39	0	18	20	0	31	115	0
Queue Length 95th (ft)	28	77	#223	#294	60	37	38	40	0	58	164	0
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	447	1070	536	1043	2242	779	401	703	468	401	703	468
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.27	0.75	0.76	0.13	0.19	0.17	0.12	0.22	0.29	0.59	0.02

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 83.7		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 29.0	Intersection LOS: C	
Intersection Capacity Utilization 69.4%	ICU Level of Service C	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	383	75	149	320	83	331	336	634	212	67	31
Satd. Flow (prot)	1703	4893	1524	3303	4893	1524	3303	3406	1524	3303	3406	1524
Flt Permitted	0.531			0.950			0.950			0.950		
Satd. Flow (perm)	952	4893	1524	3303	4893	1524	3303	3406	1524	3303	3406	1524
Satd. Flow (RTOR)			182			182			345			182
Lane Group Flow (vph)	14	426	83	166	356	92	368	373	704	236	74	34
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8			2			6
Total Split (s)	15.0	20.0	20.0	15.0	20.0	20.0	19.0	41.0	41.0	14.0	36.0	36.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Act Effct Green (s)	25.2	15.1	15.1	10.1	27.5	27.5	18.6	30.0	30.0	10.1	26.3	26.3
Actuated g/C Ratio	0.30	0.18	0.18	0.12	0.33	0.33	0.22	0.36	0.36	0.12	0.31	0.31
v/c Ratio	0.04	0.49	0.20	0.42	0.22	0.15	0.51	0.31	0.92	0.60	0.07	0.06
Control Delay	20.7	34.6	1.0	39.9	24.2	0.5	35.4	19.8	32.0	43.8	20.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	34.6	1.0	39.9	24.2	0.5	35.4	19.8	32.0	43.8	20.1	0.2
LOS	C	C	A	D	C	A	D	B	C	D	C	A
Approach Delay		28.9			24.9			29.8			34.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	5	81	0	46	52	0	102	73	196	67	14	0
Queue Length 95th (ft)	19	115	0	77	97	0	149	106	#439	105	30	0
Internal Link Dist (ft)		4350			12631			1291			849	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	373	876	422	394	1590	618	746	1464	851	394	1261	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.49	0.20	0.42	0.22	0.15	0.49	0.25	0.83	0.60	0.06	0.05

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 84.5	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 1: Peart Rd & Jimmie Kerr Blvd