ELOY
Sunshine Industrial Park

Traffic Impact Study

3E

REPORT

# Sunshine Industrial Park

Master Traffic
Impact Study

Northeast Corner of Sunshine Boulevard
and Interstate 10
Eloy, Arizona

April 2012
Project No. 10-340

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For submittal to:
**City of Eloy**

APPROVED 8/6/2012

CITY OF ELOY ENGINEER DATE

THE CITY APPROVES THIS REPORT FOR CONCEPT ONLY AND ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS

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# SUNSHINE INDUSTRIAL PARK
# MASTER TRAFFIC IMPACT ANALYSIS

## Northeast Corner of Sunshine Boulevard and Interstate 10
## Eloy, Arizona

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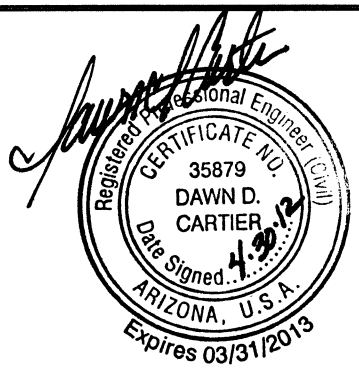
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**April 2012**

CivTech Project No. 10-340

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# EXECUTIVE SUMMARY

This report documents a master traffic impact analysis performed for the Sunshine Industrial Park development located on the northeast corner of Interstate 10 (I-10) and Sunshine Boulevard in Eloy, Arizona. Encompassing approximately 277 acres, the parcel is expected to be developed into industrial, warehousing and commercial land use. CivTech Inc. has been retained by Walton Development and Management (USA), Inc. to perform the traffic impact analysis for the proposed Sunshine Industrial Park development.

The purpose of this analysis is to address the traffic and transportation impacts of the proposed development on the surrounding streets and intersections. This traffic impact study was prepared in accordance with the City of Eloy Traffic Impact Analysis guidelines. The specific objectives of this assessment are:

1. To evaluate lane requirements on all existing roadways and at all existing intersections within the study area.
2. To determine future level of service for all existing intersections within the study area and recommend any capacity related improvements.
3. To determine necessary lane configurations at all new driveways within the proposed development to provide acceptable future levels of service.
4. To evaluate the need for future traffic control changes within the proposed study area.
5. To evaluate the need for deceleration lanes into/for the proposed site accesses.
6. To determine ultimate roadway classifications and right-of-way requirements for the future roadway public improvements.

Access to the Sunshine Industrial Park development could be obtained from Sunshine Boulevard and Date Street. In addition, an internal Loop Collector is planned to provide direct access to the industrial/warehousing areas. The parcels located near the Union Pacific Railroad could be rail served.

The Traffic Impact Analysis (TIA) was completed in accordance with the requirements of the City of Eloy. Based on directions from City staff, Eloy defers to the requirements of the Maricopa County Department of Transportation (MCDOT) study guidelines. The proposed Sunshine Industrial Park development is anticipated to generate more than 1,000 and less than 1,500 peak hour trips, which places the development into a Category III. However, this study is being provided as a Master document to guide future development access and provide recommendations for right-of-way needs adjacent to the site. Therefore, the scope of this study was revised to include all major/main site accesses and adjacent major intersections within one (1) mile of the proposed site. Also both the AM and PM peak hours for the existing year and opening plus twenty (20) years were analyzed. Per conversations and meetings with Mr. John Mitchell at the City of Eloy, CivTech has been required to perform a large master study

for the Sunshine Industrial Park which will include the National Gypsum Corporation area adjacent to the proposed site. CivTech has also been advised to analyze only the existing year and opening plus twenty (20) years based on a meeting held on July 12, 2010 with the City of Eloy.

The following conclusions and recommendations have been documented in this study:

- All existing study intersections are expected to operate with an overall passing level of service (LOS A) under existing conditions.
- The proposed development is expected to generate 13,167 total daily trips, with 826 occurring in the AM peak hour and 1,140 occurring in the PM peak hour.
- The recommendations provided herein relate to the overall master development and the required improvements at full buildout. In order to facilitate the interim improvements required to allow for acceptable traffic operations, an updated analysis should be prepared for each phase of development to ensure that off-site improvements are adequately recommended and constructed.
- The new Sunshine Boulevard traffic interchange improvements as recommended in the *I-10 Corridor Study: Junction I-8 to Tangerine Road* are anticipated be in place and fully constructed by horizon year 2030.
- A 50-foot strip of land adjacent to I-10 located on the proposed Sunshine Industrial Park site will remain undeveloped. This land will be reserved for future right-of-way purchase should it be required for the I-10 widening project.
- The City of Eloy 2010 Small Area Transportation Study (SATS) indicates that Sunshine Road is considered to be a regionally significant route (RSR) in the future even with the anticipated additional widening of I-10. As such, Sunshine Boulevard is programmed as a six-lane major arterial street within a 150-foot right-of-way.
- All collector streets shown within the Sunshine Industrial Park shall be commercial collectors containing 80-feet of right-of-way per the City of Eloy SATS.
- The National Gypsum Corporation ("National Gypsum") has planned for a facility located just north of the Sunshine Industrial Park. A Traffic Impact Study was approved for National Gypsum by the City of Eloy and the ultimate Date Street paving has been constructed for Date Street between Sunshine Boulevard and the National Gypsum site. Excerpts from the National Gypsum TIA have been provided in **Appendix E**.
- This master study was prepared as a guiding document for the future Sunshine Industrial Park development as part of the zoning process. Since site specific developments have not been shown, and the timing of site specific development is unknown, exact access locations have not been provided for review or approval. Future access along Date Street, Sunshine Boulevard and the Loop Road should generally follow the guidance provided by the RSR Access Management Requirements and the City of Eloy SATS.
- Interparcel connectivity between commercial developments would significantly enhance the circulation within and surrounding the Sunshine Industrial Park. The

City may require joint/assembled driveways to support their interest of preserving safety along with balancing the access locations in comparison to the through traffic along the adjacent roadways.

*Horizon Year 2030*

- By horizon year 2030, all study intersections are expected to operate with an acceptable level of service (LOS C or better) under the proposed lane configurations shown in **Figure 9**.
- The intersection of Sunshine Boulevard and Alsdorf Road experiences a poor/failing level of service in the eastbound direction during the peak hours due to the expected regional growth within the area, thus increasing the north-south through traffic along Sunshine Boulevard. Poor levels of service during peak hours are not uncommon on side street approaches to major arterial roadways. The expected increase in traffic volumes along Sunshine Boulevard would decrease the number of acceptable gaps in traffic for eastbound left-turns. This increases delay to these eastbound movements resulting in a poor LOS during peak hours; however it is expected that these movements will operate at an acceptable LOS during non-peak hours. Furthermore, the Traffix software utilized for this analysis does not account for gaps in traffic due to near-by signalization. Although the PM peak hour experiences a failing LOS in the eastbound approach both delay and peak hour signal warrants are not meet. Also, due to the close proximity of the Union Pacific Railroad located approximately 80-feet north of Alsdorf Road a signal is not recommended.
- The intersection of Sunshine Boulevard and Date Street experience a poor westbound approach LOS during the AM peak hour due to the need for more green time north/south. With an increase in westbound site traffic during the AM peak hour more green time is needed for the westbound left-turns onto Sunshine Boulevard. This evaluation does not assume the Sunshine Boulevard has been constructed to its ultimate six-lane condition but instead a more conservative evaluation of Sunshine Boulevard in its existing condition. Traffic signalization will be requited at Sunshine Boulevard/SR-84, Sunshine Boulevard/Date Street, Sunshine Boulevard/I-10 Westbound Off-Ramp and the Sunshine Boulevard/1-10 Eastbound Off-Ramp. A traffic signal warrant analysis has been shown for the peak hour approach volumes in **Table 8** and calculation summary sheets have been provided in **Appendix L**. Additional traffic signal warrant evaluations should be prepared with each phase of development to determine the timing for the future signal installation. Future signalization should be consistent with recommendations of the RSRSM and the City of Eloy SATS to foster future mobility along ITS corridors.
- A right-turn deceleration lane is warranted at the intersection of West Loop Road and Date Street. However, due to the minor eastbound through volumes and the four-lane arterial street section already constructed, the outside lane will function as the dedicated right turn deceleration lane. The land area serviced by Date Street is fixed and the volume of traffic along Date Street will be limited by the land area that is services. A separate dedicated lane is not recommended along Date Street at the public street intersections. Additional deceleration lane calculations should be prepared for individual uses within the site as they are proposed. Since the

development is industrial in nature, accommodations for vehicles storage for left turns, maneuverability of large trucks and entrance gaps and tapers for these larger vehicles into turn lanes should be considered.

- Should right turn lanes be considered for uses within the Sunshine Industrial Park, the length of deceleration lane should be calculated using the 20 percent spillback length as reported in TRB Circular E-C01. The length of deceleration lane along with the suggested driveway spacing has been provided in **Appendix K**.
- The contractor should ensure that adequate sight distance is provided at all site access points to allow safe left and right-turning movements from the development. Landscaping should be maintained at a maximum of three (3) feet in height. To maintain sight distance, tree branches should be trimmed lower than seven feet and maintained to meet current acceptable landscape requirements while maintaining sight distance.
- The commercial parcel located in the southeast corner of Sunshine Boulevard and Date Street is proposed to have two (2) site access points along Sunshine Boulevard and two (2) along Date Street. Sunshine Boulevard is proposed to include one (1) 3/4 access point approximately 560-feet from the intersection of Sunshine Boulevard and Date Street (centerline to centerline) and one (1) right-in/right-out access point approximately 300-feet from the intersection. Date Street is proposed to include one (1) full access point approximately 650-feet from the intersection of Sunshine Boulevard and Date Street (centerline to centerline) and one (1) right-in/right-out access point approximately 300-feet from the intersection. All access points, as proposed for the commercial area, provide sufficient queuing distance for all turning movements and exceed the required stopping sight distance for safety. Although the access along Sunshine Boulevard has been preliminarily reviewed, these accesses are subject to final City approval during the City's site plan approval process. An access plan for the commercial development located along Sunshine Boulevard is shown in **Appendix I**.

# INTRODUCTION

The Sunshine Industrial Park development is a proposed mixed-use development located on the northeast corner of Sunshine Boulevard and I-10 in the City of Eloy, Arizona. Encompassing approximately 277 acres, the parcel is expected to be developed into industrial, warehousing and commercial land uses.

Per the site plan provided, access to the Sunshine Industrial Park development could be obtained from Sunshine Boulevard and Date Street. In addition, an internal loop collector is planned to provide direct access to the industrial areas.

## Study Requirements

This study analyzes the traffic impact due to the proposed development on the surrounding street network. The study area has been defined as including Sunshine Boulevard, I-10, State Route 84 (SR-84), State Route 87 (SR-87), Alsdorf Road, Date Street and Milligan Road in Eloy, Arizona. A location map of the study area is provided in **Figure 1**.

This Traffic Impact Analysis has been prepared per the requirements of the City of Eloy. Based on City staff, Eloy defers to the requirements of the Maricopa County Department of Transportation (MCDOT) study guidelines. The proposed mixed-use development is anticipated to generate more than 1,000 and less than 1,500 peak hour trips, which puts the site into a Category III.

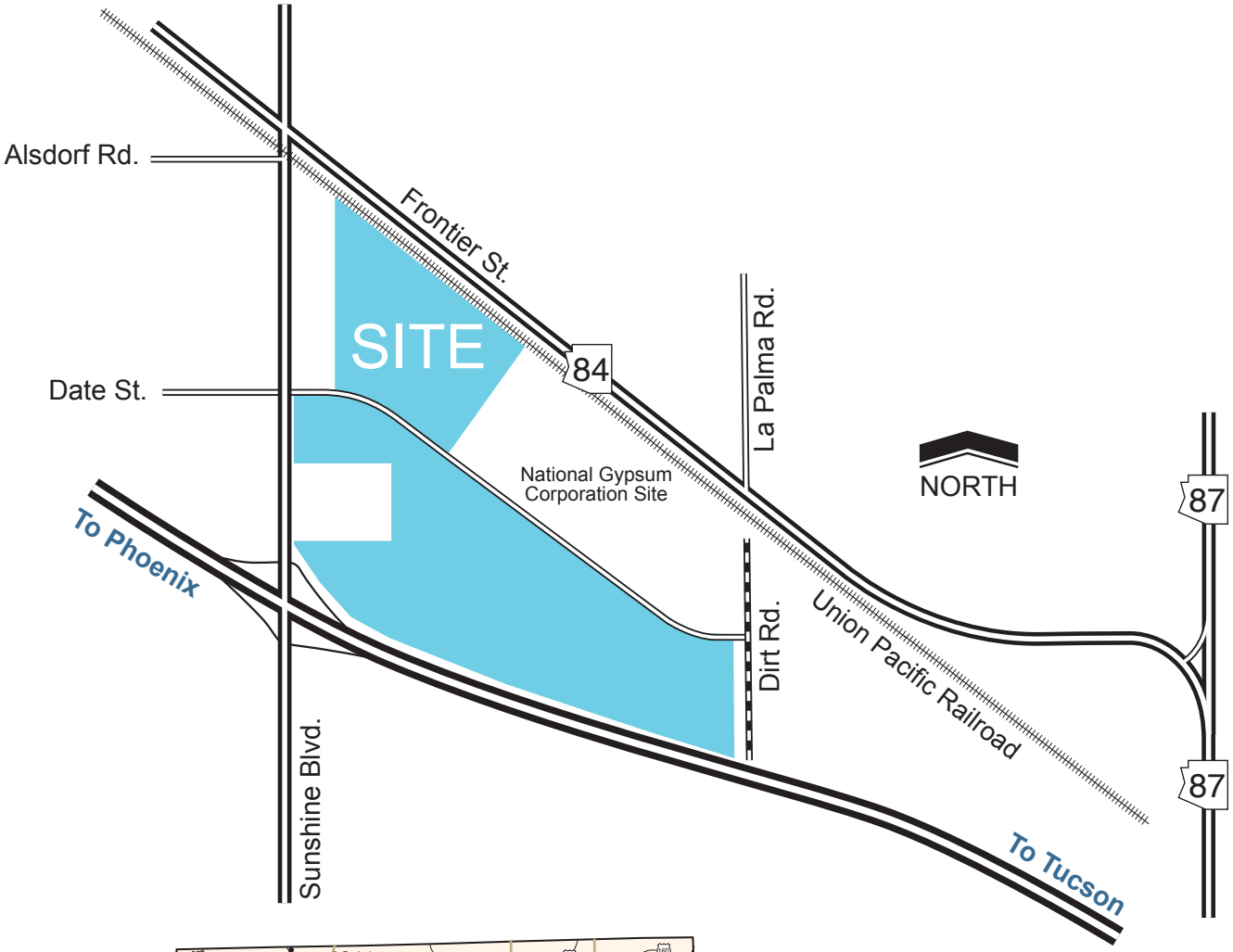
## Study Area

Based on MCDOT criteria, the study area includes all site access points, unsignalized, signalized and/or potential signalized intersections adjacent to the development. Per a meeting with City Staff on July 12, 2010 the study area intersections were identified. The following intersections were included as part of the study area in addition to the access points:

- Sunshine Boulevard & State Route 84
- Sunshine Boulevard & Alsdorf Road
- Sunshine Boulevard & Date Street
- Sunshine Boulevard & Interstate 10
- State Route 87 & State Route 84
- State Route 87 & Milligan Road

## Horizon Years

The study horizon years for a Category III development generating more than 1,000 and less than 1,500 peak hour trips, per MCDOT Traffic Impact Procedures, includes the existing year, the opening/build-out year and the opening plus twenty (20) years. Per the previously mentioned meeting with the City, existing year (2010) and opening plus twenty year (2030) would be sufficient for this study.



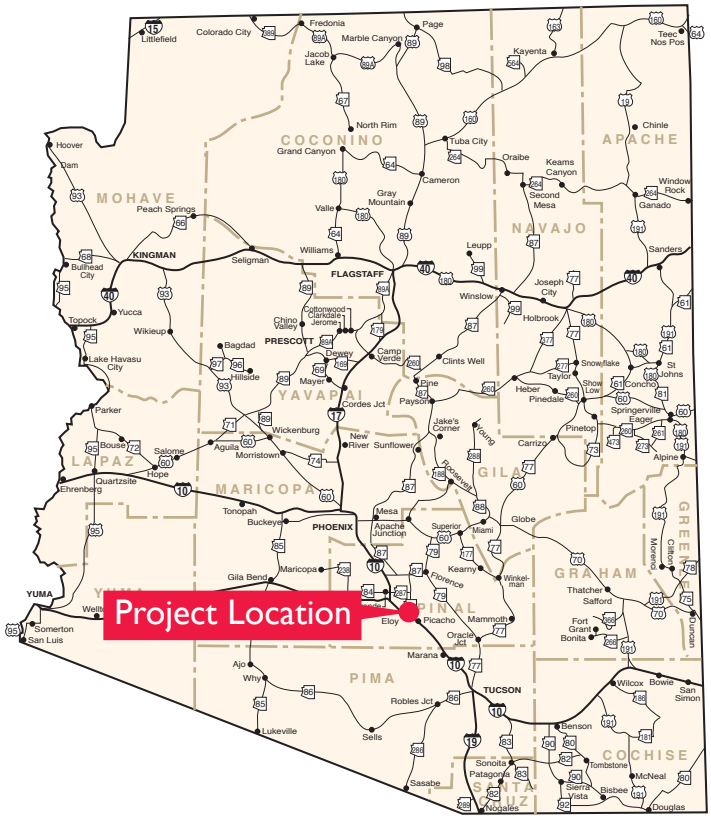




**Figure 1:** Vicinity Map

# EXISTING CONDITIONS

## *SURROUNDING LAND USES*

The proposed site is currently empty/vacant land, surrounded by commercial, master planned residential communities and some single-family homes on large properties. There is also a large portion of land dedicated to agricultural use. The existing Union Pacific Railroad is located along the northern frontage of the proposed site and is planned to service the Industrial/Warehousing land use located near the railroad. Also located in the northeast corner of the site is the National Gypsum Corporation, which is a planned high technology manufacturing plant.

## *ROADWAY NETWORK*

**Sunshine Boulevard** is a north/south five lane (5) lane roadway south of SR-84 within the vicinity of the site providing two (2) through lanes in each direction of travel and a center two-way left-turn lane. Sunshine Boulevard begins to the north at Battaglia Drive and travels southbound terminating at Curtis Road in Eloy. Per the City of Eloy 2010 SATS, Sunshine Boulevard is classified as a minor arterial. The posted speed limit is 35 miles per hour (mph) within the vicinity of the site.

**State Route 84 (SR-84)** is a northwest/southeast two (2) lane highway with one (1) lane in each direction of travel located along the northern frontage of the proposed site. SR-84 begins at Interstate 8 (I-8) west of State Route 347 (SR-347) and continues east to Casa Grande, changing direction and running parallel with I-10 toward Tucson terminating at State Route 87 (SR-87) in Eloy. Per the City of Eloy 2010 SATS, SR-84 is classified as a minor arterial. The posted speed limit is 45 mph within the vicinity of the site.

**Alsdorf Road** is an east/west two lane roadway with one (1) lane in each direction of travel. Alsdorf Road begins to the west at Santa Cruz Boulevard in Arizona City and continues eastbound terminating at Sunshine Boulevard. Per the City of Eloy 2010 SATS, Alsdorf Road is classified as minor arterial. The posted speed limit is 25 mph within the vicinity of the site.

**Date Street** is an east/west two lane roadway west of Sunshine Boulevard and a five (5) lane roadway east of Sunshine Boulevard with two (2) through lanes in each direction of travel and a center two-way left turn lane. Date Street begins to the west at South "D" Street and continues eastbound terminating at La Palma Road. The posted speed limit is 35 mph within the vicinity of the site.

**Interstate 10 (I-10)** is a regional northwest/southeast four lane freeway with two (2) lanes of travel in each direction. The I-10 provides direct access to both Phoenix to the northwest and Tucson to the southeast. The posted speed limit is 75 mph within the vicinity of the site.

**State Route 87 (SR-87)** is a north-south two (2) lane highway with one (1) through lane in each direction of travel. SR-87 begins to the north as the Beeline Highway and

continues south providing direct access to Mesa, Gilbert, Chandler, Sun Lakes and Coolidge, terminating to the south at the I-10 freeway in Eloy. Per the City of Eloy 2010 SATS, SR-87 is classified as a major arterial. The posted speed limit is 65 mph within the vicinity of the site.

**Milligan Road** is an east-west two (2) lane roadway with one (1) through lane in each direction of travel. Milligan Road begins to the west at SR-87 and continues east terminating east of Vail Road in Eloy. The posted speed limit is 35 mph within the vicinity of the site. Currently the portion of Milligan Road that extends through the proposed Sunshine Industrial Park development has been abandoned by the City of Eloy. Milligan Road will continue east of La Palma in the future and is proposed to connect to Sr-87 at a 90 degree angle.

**La Palma Road** is a north-south paved road north of SR-84 and a dirt road between the Union Pacific Railroad and I-10. The current posted speed limit north of SR-84 along La Palma Road is 25 mph. Per conversations with City staff La Palma Road is not planned with a through connection across SR-84 (to the north) or I-10 (to the south) of the proposed site.

***INTERSECTION CONFIGURATIONS***

The intersection of ***Sunshine Boulevard and SR-84*** operates as a two-way stop controlled intersection with stop control on the north-south approaches. The northbound approach consists of a shared left-through lane, one (1) through lane and a dedicated right-turn lane. The southbound approach consists of an exclusive left-turn lane, one (1) through lane and a dedicated right-turn lane. Both the eastbound and westbound approaches consist of an exclusive left-turn lane, one (1) through lane and a shared through-right lane.

The intersection of ***Sunshine Boulevard and Alsdorf Road*** operates as a one-way stop controlled "T" intersection with stop control on the eastbound approach. The northbound approach consists of an exclusive left-turn lane and two (2) through lanes. The southbound approach consists of one (1) through lane and a shared through-right lane. The eastbound approach consists of a shared left-right lane.

The intersection of ***Sunshine Boulevard and Date Street*** operates as a two-way stop controlled intersection with stop control on the east-west approaches. The northbound approach consists of an exclusive left-turn lane, two (2) through lanes and a dedicated right-turn lane. The southbound approach consists of an exclusive left-turn lane, one (1) through lane and a shared through-right lane. Both the eastbound and westbound approaches consist of an exclusive left-turn lane a shared through-right lane.

The intersection of ***Sunshine Boulevard and I-10 WB Ramps*** operates under unsignalized conditions with stop control on the westbound approach. The northbound approach consists of a shared left-through lane. The southbound consists of a shared through-right lane. The westbound approach consists of an exclusive left-turn lane and a dedicated right-turn lane.

The intersection of ***Sunshine Boulevard and I-10 EB Ramps*** operates under unsignalized conditions with stop control on the eastbound approach. The northbound approach consists of a shared through-right lane. The southbound consists of a shared left-through lane. The eastbound approach consists of an exclusive left-turn lane and a dedicated right-turn lane.

The intersection of ***SR-87 and SR-84*** operates as a two-way stop controlled intersection with stop control on the north-south approaches. The northbound approach consists of a shared left-through-right lane. The southbound approach consists of a shared left-through lane and a dedicated right-turn lane. The eastbound approach consists of an exclusive left-turn lane and a shared through-right lane. The westbound approach consists of a shared through-right lane.

The intersection of ***SR-87 and Milligan Road*** operates under unsignalized conditions. The northbound approach consists of a shared through-right lane. The southbound approach consists of an exclusive left-turn lane and one (1) through lane. The westbound approach consists of a shared left-right lane.

**Table 1** summarizes the existing intersection stop control within the project vicinity.

**Table 1 – Existing Intersection Stop Control**

| Intersection | Stop Control |
|---|---|
| Sunshine Blvd. & SR-84 | 2-way stop (NB/SB) |
| Sunshine Blvd. & Alsdorf Rd. | 1-way stop (EB) |
| Sunshine Blvd. & Date St. | 2-way stop (EB/WB) |
| Sunshine Blvd. & I-10 WB Ramps | 1-way stop (WB) |
| Sunshine Blvd. & I-10 EB Ramps | 1-way stop (EB) |
| SR-87 & SR-84 | 2-way stop (NB/SB) |
| SR-87 & Milligan Rd. | 1-way stop (WB) |

### *EXISTING TRAFFIC VOLUMES*

CivTech conducted turning movement counts at the study intersections on Tuesday July 20, 2010 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. Existing traffic volumes for this study are illustrated in **Figure 3** for both the AM and PM peak hours. Data sheets for the recorded volumes are provided in **Appendix B**.

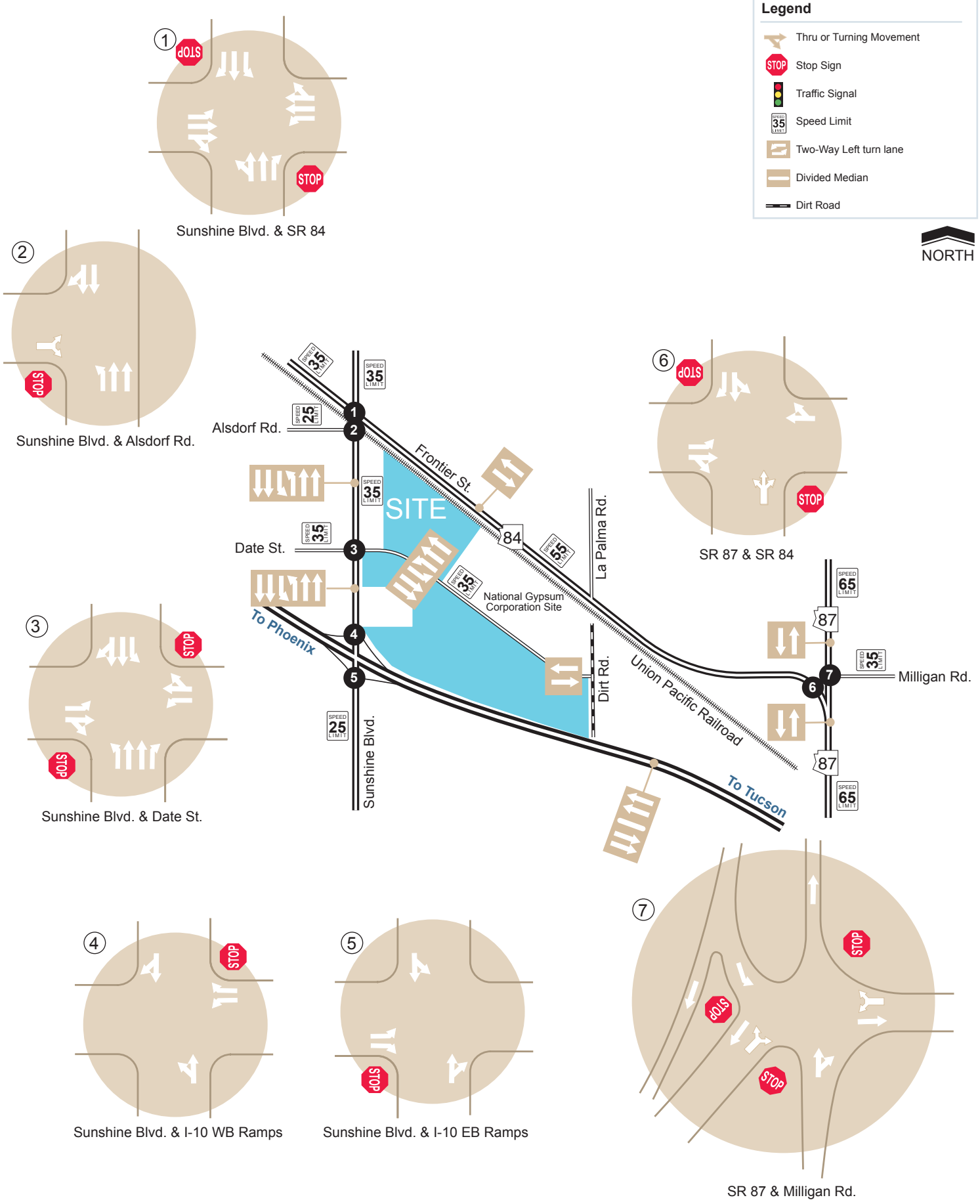
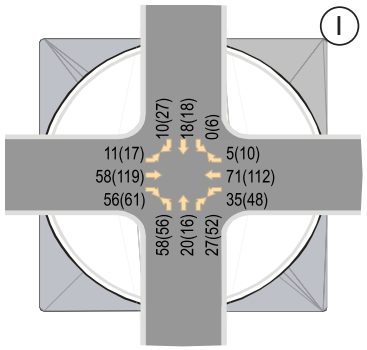
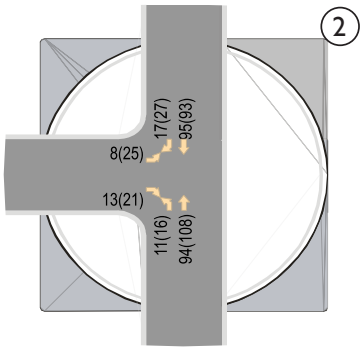


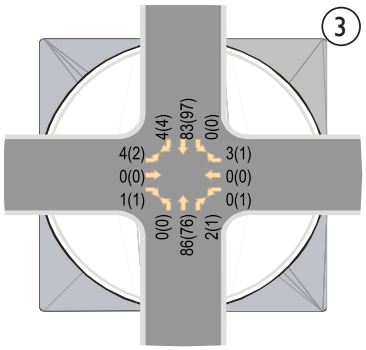

**Figure 2:** Existing Lane Configuration and Stop Control



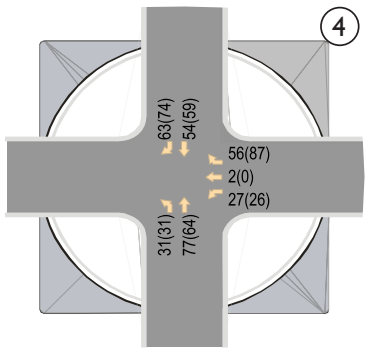

Sunshine Blvd. & SR 84



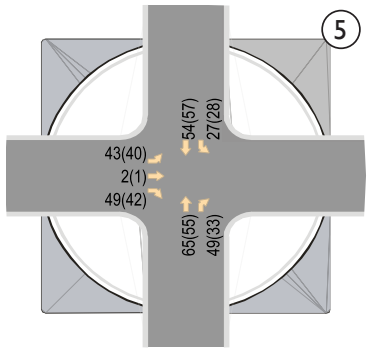

Sunshine Blvd. & Alsdorf Rd.



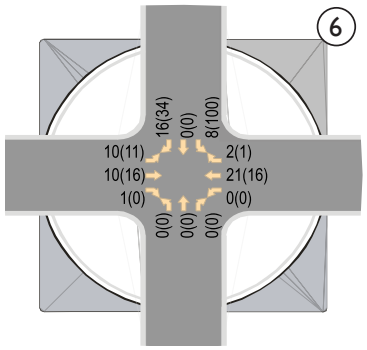

Sunshine Blvd. & Date St.



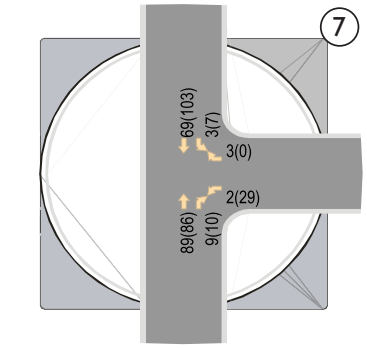

Sunshine Blvd. & I-10 WB Ramps




Sunshine Blvd. & I-10 EB Ramps




SR 87 & SR 84




SR 87 & Milligan Rd.

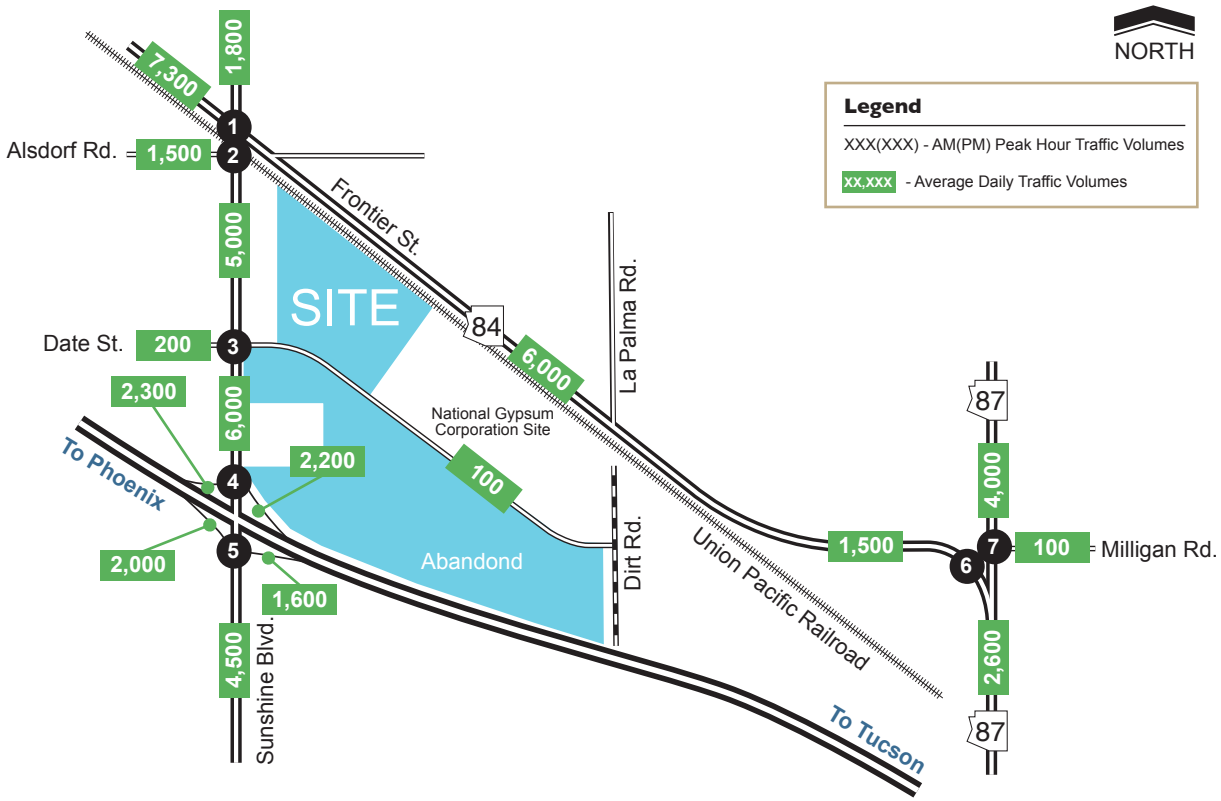



**Figure 3:** Existing Peak Hour Traffic Volumes

### *EXISTING CAPACITY ANALYSIS*

Peak hour capacity analyses have been conducted for the study intersections based on existing lane configurations, stop control and traffic volumes. All intersections have been analyzed using the methodologies presented in the *Highway Capacity Manual (HCM), Special Report 209,* Updated 2000. All signalized and unsignalized intersections have been analyzed as such using the methodologies presented in the *Highway Capacity Manual, Special Report 209,* Updated 2000, and using TRAFFIX Software version 8.0 under the HCM 2000 methodologies.

The concept of level-of-service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels-of-service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. **Table 2** lists the level of service criteria for signalized and unsignalized intersections.

**Table 2 – Level-of-Service Criteria for Controlled Intersections**

| Level-of-Service | Unsignalized Control Delay (sec/veh) | Signalized Control Delay (sec/veh) |
|---|---|---|
| A | ≤ 10 | ≤ 10 |
| B | > 10-15 | > 10-20 |
| C | > 15-25 | > 20-35 |
| D | > 25-35 | > 35-55 |
| E | > 35-50 | > 55-80 |
| F | > 50 | > 80 |

*Source: Exhibit 16-2 and Exhibit 17-2, Highway Capacity Manual 2000*

Results of the existing level-of-service analyses are shown in **Table 3** for both peak hours. The output sheets for the existing conditions have been included in the **Appendix C**.

**Table 3 – Existing Peak Hour Levels of Service**

| ID | Intersection | Stop Control | Approach | Existing LOS | |
|---|---|---|---|---|---|
| | | | | AM Peak Hour | PM Peak Hour |
| 1 | Sunshine Blvd. & SR-84 | 2-way stop (NB/SB) | NB | B | B |
| | | | SB | B | B |
| | | | EB Left | A | A |
| | | | WB Left | A | A |
| | | | **Overall** | **A** | **A** |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 1-way stop (EB) | NB Left | A | A |
| | | | SB | A | A |
| | | | EB | A | A |
| | | | **Overall** | **A** | **A** |
| 3 | Sunshine Blvd. & Date St. | 2-way stop (EB/WB) | NB Left | A | A |
| | | | SB Left | A | A |
| | | | EB | A | A |
| | | | WB | A | A |
| | | | **Overall** | **A** | **A** |
| 4 | Sunshine Blvd. & I-10 WB Ramps | 1-way stop (WB) | NB Left | A | A |
| | | | SB | A | A |
| | | | WB | A | A |
| | | | **Overall** | **A** | **A** |
| 5 | Sunshine Blvd. & I-10 EB Ramps | 1-way stop (EB) | NB | A | A |
| | | | SB Left | A | A |
| | | | EB | A | A |
| | | | **Overall** | **A** | **A** |
| 6 | SR-87 & SR-84 | 2-way stop (NB/SB) | NB | A | A |
| | | | SB | A | A |
| | | | EB Left | A | A |
| | | | WB | A | A |
| | | | **Overall** | **A** | **A** |
| 7 | SR-84 & Houser Rd. | 1-way stop (WB) | NB | A | A |
| | | | SB | A | A |
| | | | WB | A | A |
| | | | **Overall** | **A** | **A** |

All existing study intersections are expected to operate with an overall passing level of service (LOS A).

# FUTURE ROADWAY IMPROVEMENTS

## *REGIONAL IMPROVEMENTS*

Per the City of Eloy 2010 Small Area Transportation Study (SATS) La Palma Road is planned to connect north of SR-84 and to the south of I-10. Alsdorf Road, Milligan Road, La Palma Road and SR-84 are classified as minor arterial roadways which will ultimately provide 2-4 through lanes by horizon year 2030. Sunshine Boulevard is classified as a major arterial which currently provides the ultimate full build cross section of 4 through lanes and a center two-way left-turn lane.

The Interstate 10 (I-10) Corridor Study: Junction I-8 to Tangerine Road, dated September 2008, depicts Alsdorf Road and La Palma Road with an overpass bridge or some connection across the I-10 freeway. Also, the Sunshine Boulevard Traffic Interchange is planned to be improved to provide an ultimate cross section of six (6) through lanes on Sunshine Boulevard and provide an ultimate cross section of three (3) lanes at each off/on ramp. A one-way frontage road is also planned to run westbound along the southern portion of the proposed Sunshine Industrial Park development.

# PROPOSED DEVELOPMENT

## *SITE LOCATION*

The Sunshine Industrial Park development is a proposed industrial, warehousing and commercial development located on the northeast corner of Sunshine Boulevard and Interstate 10 in the City of Eloy, Arizona. The site is depicted north of the I-10, south of the Union Pacific Railroad, east of Sunshine Boulevard and west of La Palma Road.

## *LAND USE AND DENSITY*

The proposed Sunshine Industrial Park development is expected to be fully built out by horizon year 2030. The proposed development encompasses approximately 277 gross acres with an assumed floor area ratio (FAR) of 20%. It was also assumed the Industrial area would consist of 20% Industrial Park and 80% warehousing. **Table 4** below shows the assumed intensity of the proposed Sunshine Industrial Park development.

**Table 4 – Land Use and Intensity**

| Acreage | Building S.F. | Industrial Park | Warehousing | Commercial |
|---|---|---|---|---|
| 251.9 | 2,195,028 | 439,006 | 1,756,022 | - |
| 11.9 | 103,526 | - | - | 103,526 |
| **Total** | **2,298,554** | **439,006** | **1,756,022** | **103,526** |

### *SITE PLAN*

The proposed Sunshine Industrial Park development could obtain access via Sunshine Boulevard and Date Street. In addition an internal loop collector is planned to provide direct access to the industrial areas in the southern portion of the site. The northern parcels are serviced by the Union Pacific Railroad and Date Street. Date Street is located approximately 1,900 S.F. north of the I-10 westbound ramps. The layout of the proposed site is illustrated in **Figure 4**.

### *COMMERCIAL RETAIL PLAN*

Site access points for the proposed commercial parcel located in the southeast corner of Sunshine Boulevard and Date Street were included within this report to help determine future access locations, access management and safety. Sunshine Boulevard is proposed to include one (1) ¾ -access point approximately 560-feet from the intersection of Sunshine Boulevard and Date Street (centerline to centerline) and one (1) right-in/right-out access point approximately 300-feet from the intersection. Date Street is proposed to include one (1) full access point approximately 650-feet from the intersection of Sunshine Boulevard and Date Street (centerline to centerline) and one (1) right-in/right-out access point approximately 300-feet from the intersection. The proposed commercial dimensions and site access is illustrated in **Figure 9**. A conceptual site plan of the proposed commercial parcel has been included in **Appendix I**. Although the access along Sunshine Boulevard has been preliminarily reviewed, these accesses are subject to final City approval during the City's site plan approval process.

Driveway specific analysis for this use has not been completed within this report. Trips for the commercial area were generated and distributed to the roadway network using the Shopping Center land use. These trips were applied to the driveways using engineering judgment to determine acceptable future access locations. A site specific traffic impact analysis should be completed for this site in the future to ensure that the recommendations herein will continue to support the actual development proposal.




**Figure 4:** Site Plan and Access

# FUTURE TRAFFIC VOLUMES

## *SITE TRIP GENERATION*

Generated trips were estimated for the proposed Sunshine Industrial Park development utilizing the data given in the *Institute of Transportation Engineers (ITE) Trip Generation, 8th Edition* report and the methodology discussed in the *ITE Trip Generation Handbook, 2nd Edition.* The *ITE Trip Generation* report contains data collected by various transportation professionals for a wide range of different land uses. The data are summarized in the report and average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily and peak hour trips.

*Pass-By Trips*

Based on the published *ITE* data, as found in *ITE Trip Generation Handbook 2nd Edition*, it could be estimated that some portion of the traffic entering and existing a commercial development would come from traffic already on the external street system. The term 'pass-by' trips refers to traffic already traveling on a study roadway from an origin to a destination that stops into the commercial development on the way. Per the *ITE Trip Generation Handbook, 2nd Edition*, it could be estimated that 5% of the daily trips and 34% of the PM peak hour trips generated by the proposed commercial parcel could be from pass-by trips. To maintain a conservative estimate of impacts, pass-by trips were not taken.

Data for ITE categories "Industrial Park" (Land Use Code 130), "Warehousing" (Land Use Code 150) and "Shopping Center" (Land Use Code 820) were used to estimate trips for the proposed development. The square footage for each land use was found using a Floor Area Ratio (FAR) of twenty (20) percent (a factor of 0.20). CivTech assumed that the proposed industrial area would consist of 20% Industrial Park and 80% warehousing.

Based on the size of the development, the trip generation equations from ITE's *Trip Generation* were used to calculate the total trips for the industrial/warehousing portion of the proposed site. **Table 5** summarizes the full build (2030) trip generation. Detailed trip generation calculations are included in **Appendix D** of this report.

**Table 5 – Trip Generation Summary**

| Land Use | ITE Code | Size | | Weekday Generated Trips | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Daily | AM Peak Hour | | | PM Peak Hour | | |
| | | Quantity | Units | Total | Enter | Exit | Total | Enter | Exit | Total |
| Shopping Center | 820 | 103,526 | S.F. | 4,445 | 63 | 40 | 104 | 185 | 201 | 386 |
| Industrial Park | 130 | 439,006 | S.F. | 2,926 | 265 | 58 | 323 | 80 | 301 | 381 |
| Warehousing | 150 | 1,756,022 | S.F. | 5,796 | 315 | 84 | 399 | 93 | 280 | 373 |
| **Total External Trips** | | | | **13,167** | **643** | **182** | **826** | **359** | **781** | **1,140** |

By full buildout the proposed development is expected to generate 13,167 total daily trips, with 826 occurring in the AM peak hour and 1,140 occurring in the PM peak hour.

### *SITE TRIP DISTRIBUTION*

The proposed project is expected to consist of industrial, warehousing and commercial land uses; therefore, two (2) trip distribution patterns were assumed for this study. It is expected that the majority of the trips generated by the industrial/warehousing land uses would be made by trucks/employees working in the proposed development to/from other distribution and places of residence within a given radius of the site. It was also expected that the majority of the trips generated by the commercial parcels would be home based from nearby population within a given radius of the site. Site trips were distributed to the roadway network based on estimates of total 2030 population within a twenty (20) mile radius of the site as found in Pinal County *Small Transportation Area Study, 2006 update*.

It was determined that the major travel patterns for the site generated traffic are summarized in **Table 6** and shown in **Figure 5**, which displays the overall trip distribution percentages assumed for this study. Anticipated trips to the proposed site varied due to the mixed industrial and commercial land uses.

**Table 6 – Site Trip Distribution Percentages**

| Direction | Industrial | Commercial |
|---|---|---|
| Sunshine Boulevard – North | 2% | 20% |
| Sunshine Boulevard – South | 2% | 30% |
| SR -84 – Northwest | 10% | 15% |
| I-10 (To Phoenix) | 30% | 5% |
| I-10 (To Tucson) | 40% | 5% |
| SR-87 – North | 5% | 8% |
| SR-87 – South | 8% | 10% |
| La Palma Road – North | 1% | 2% |
| La Palma Road – South | 2% | 5% |
| **Total** | **100%** | **100%** |

### *SITE TRIPS ASSIGNMENT*

The distribution percentages were applied to the generated trips to determine the AM and PM peak hour site traffic at the intersections within the study area. **Figure 6** presents the resulting full build site generated traffic assignment during the peak hours.

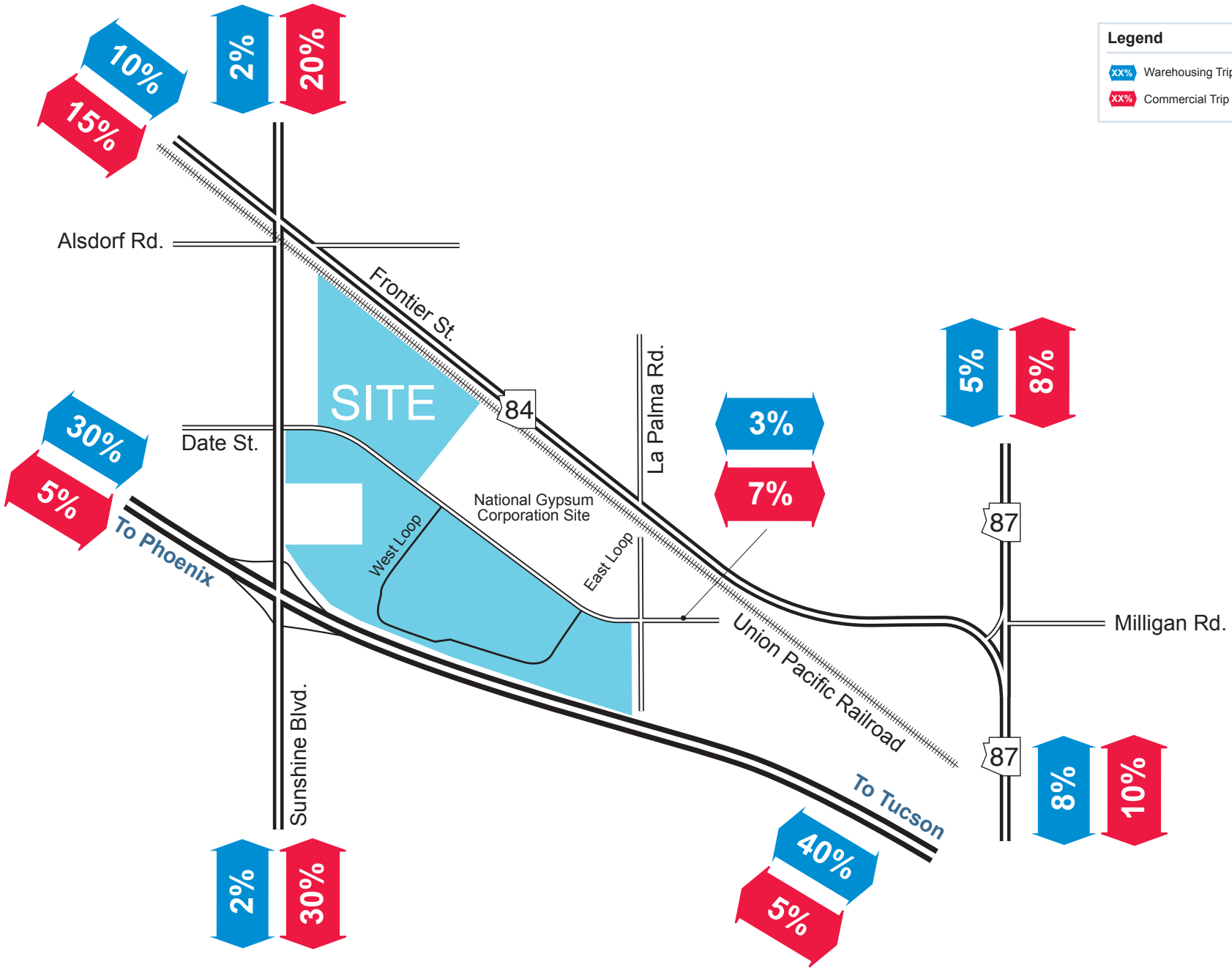
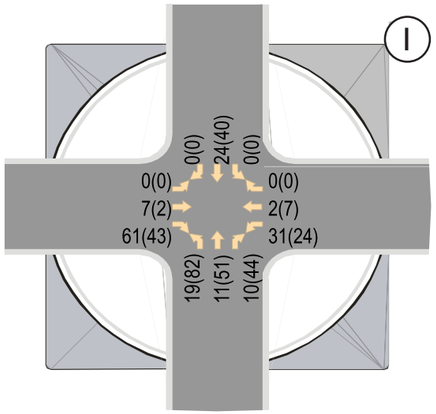
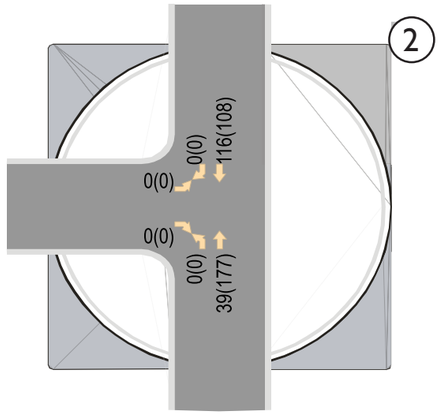


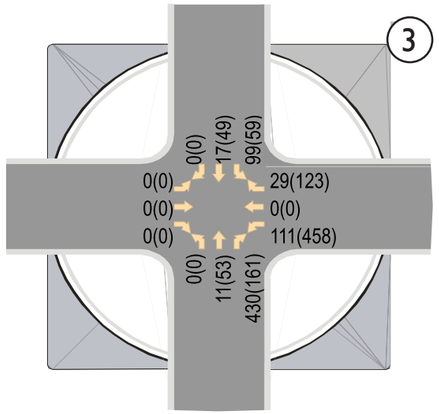

**Figure 5:** Trip Distribution



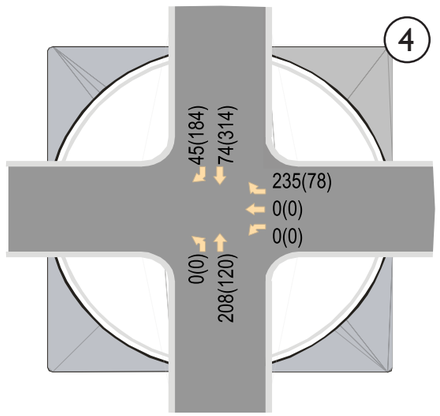

Sunshine Blvd. & SR 84



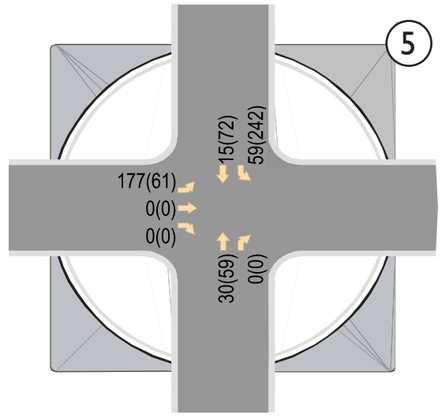

Sunshine Blvd. & Alsdorf Rd.



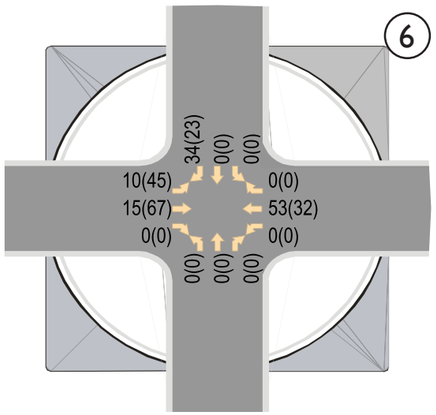

Sunshine Blvd. & Date St.



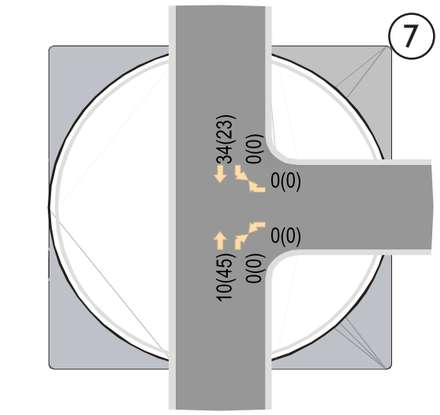

Sunshine Blvd. & I-10 WB Ramps



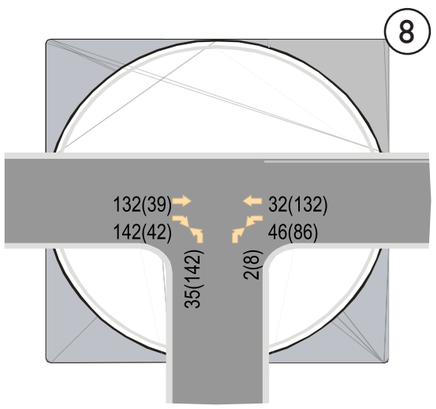

Sunshine Blvd. & I-10 EB Ramps



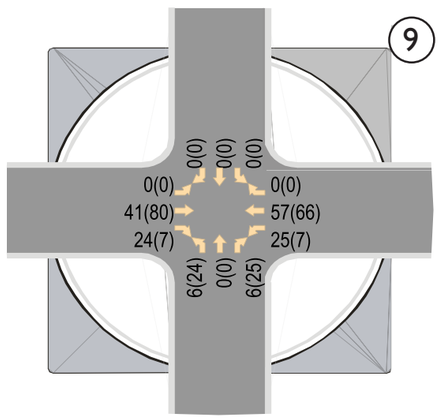

SR 87 & SR 84




SR 87 & Milligan Rd.




West Loop Rd. & Date St.




East Loop Rd. & Date St.

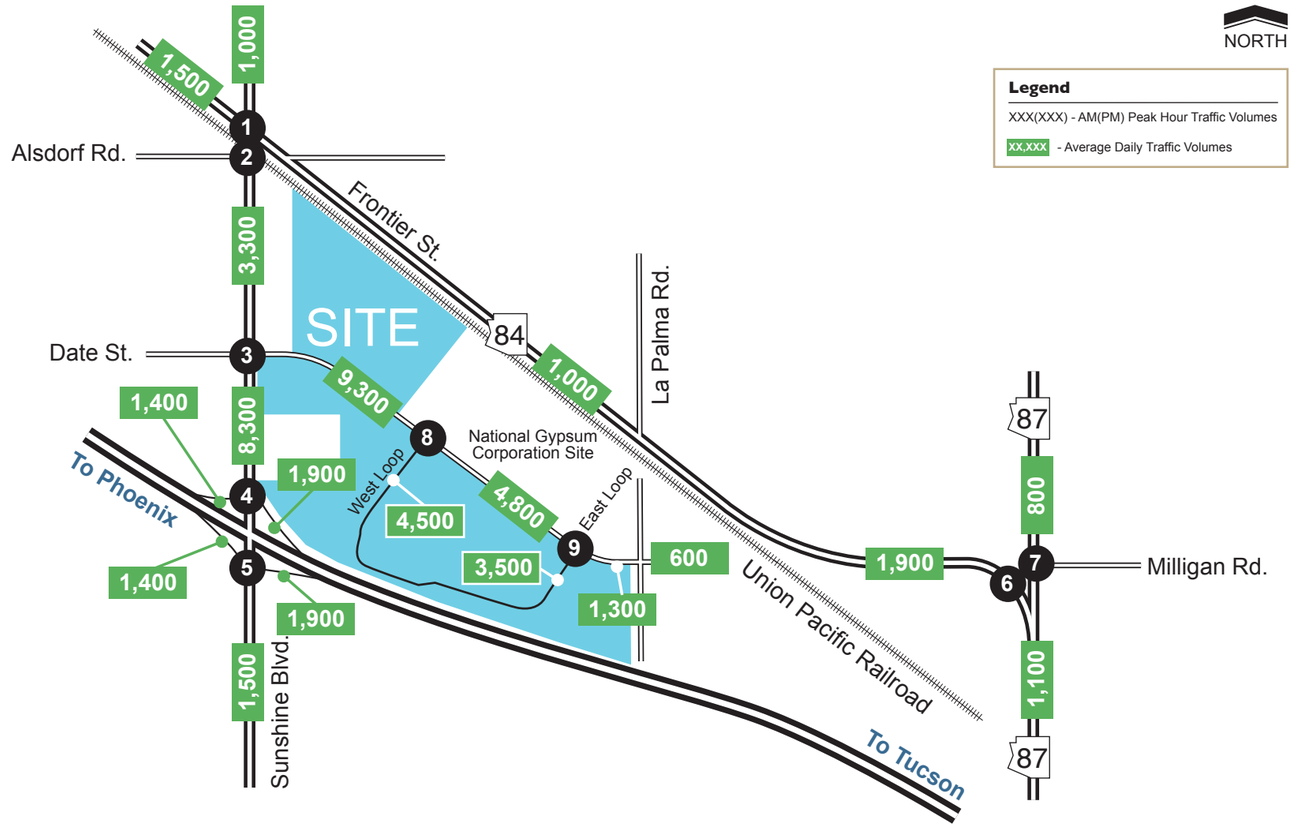



**Figure 6:** 2030 Site Traffic Volumes

## PROJECTED BACKGROUND TRIPS

ADT volumes from the *City of Eloy Small Area Transportation Study (SATS), dated June 2010* were used to determine the peak hour 2030 background volumes. CivTech utilized the National Cooperative Highway Research Program (NCHRP) Report 255 to develop the peak hour turning movements for all the study intersections based on the ADT's. This method provided turning movements based on a nationally recognized methodology while keeping the ADT volumes consistent with the City of Eloy SATS. Detailed 2030 AM and PM peak hour turning movement volume calculations have been included within **Appendix E**.

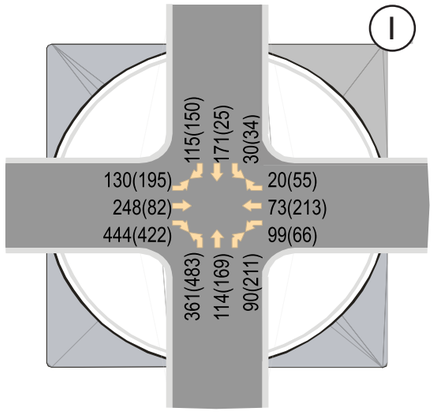
By horizon year 2030, it is assumed that the National Gypsum Corporation will be fully constructed and at full capacity. The National Gypsum Corporation is a high technology manufacturing plant, located along the northern frontage of the proposed site between Date Street and the Union Pacific Railroad. Based on the TIA prepared for the National Gypsum Corporation, development is anticipated to encompass 103 gross acres and will provide an assumed 15 percent FAR or buildable area of 673,002 square feet. Per the ITE Manufacturing (Land Use Code 140) the National Gypsum Corporation is anticipated to generate 2,572 daily trips, with 492 trips occurring during the AM peak hour and 492 trips occurring during the PM peak hour. The 2030 peak hour traffic volumes from the National Gypsum Corporation development have been included in **Figure 7**. Detailed trip generation calculations and excerpts from the approved TIA for the National Gypsum Corporation are included in **Appendix E**.

Land located to the east of the of the Sunshine Industrial Park, east of the La Palma road alignment, is land locked to the north by the BNSF Railroad, to the south by the I-10 freeway and to the east by SR-87. The only opportunity to access the parcel is from the west, through the Sunshine Industrial Park site. Date Street will continue easterly into the currently vacant eastern parcel to provide access for any future development. To account for this likely future traffic, both the land use and the density of the eastern parcel were assumed to be similar to that of the Sunshine Industrial Park. Calculations for the AM and PM peak hours as well as projected ADT's for the development of the eastern parcel have been included in **Appendix E**.

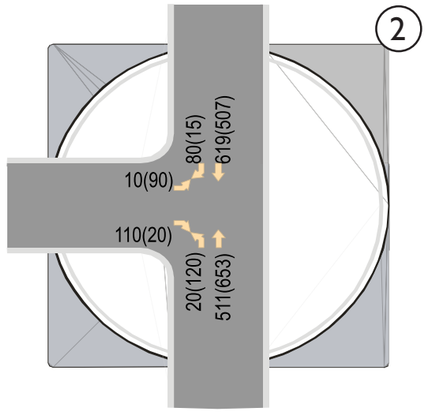
The 2030 projected AM and PM peak hour background traffic volumes include the National Gypsum Corporation traffic, the anticipated development to the east of the La Palma Road alignment, and the turning movements from the 2010 Eloy SATS, without the proposed site. The 2030 peak hour traffic volumes are shown in **Figure 7**.

### *TOTAL TRAFFIC VOLUMES*

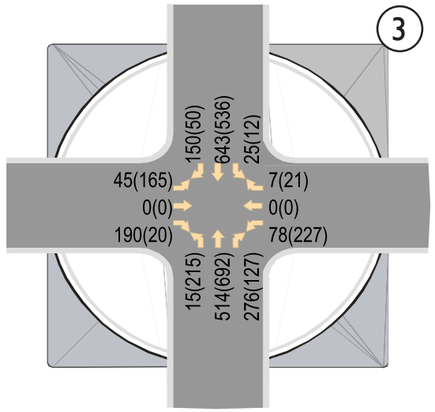
Total traffic was determined by adding the proposed site generated traffic to the projected 2030 background traffic and projected National Gypsum Corporation traffic. The 2030 total peak hour traffic volumes are shown in **Figure 8**.



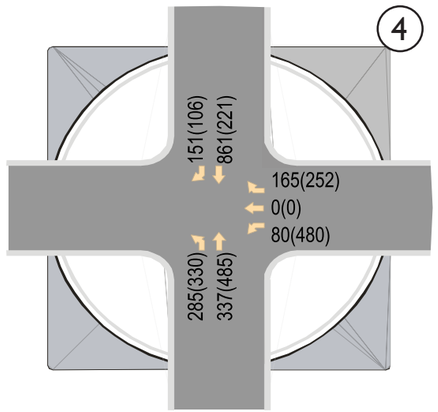

Sunshine Blvd. & SR 84



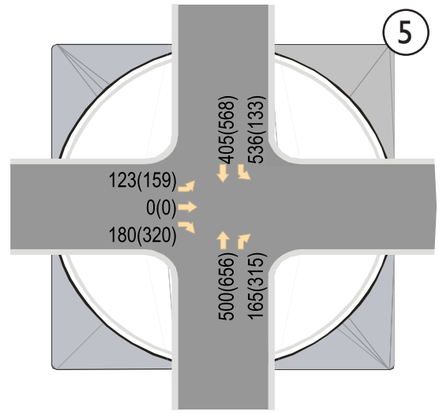

Sunshine Blvd. & Alsdorf Rd.



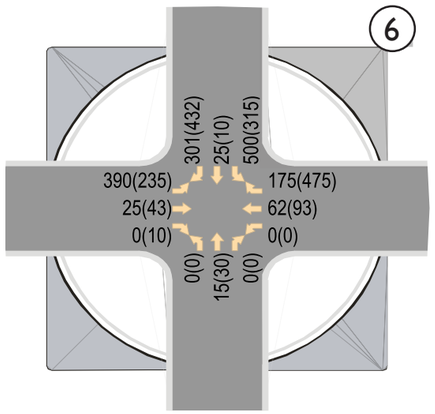

Sunshine Blvd. & Date St.



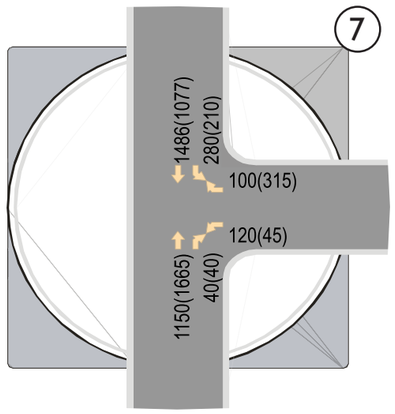

Sunshine Blvd. & I-10 WB Ramps



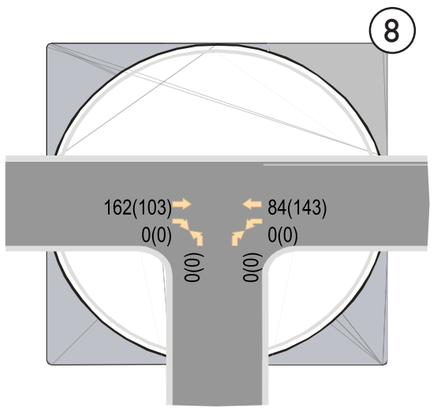

Sunshine Blvd. & I-10 EB Ramps



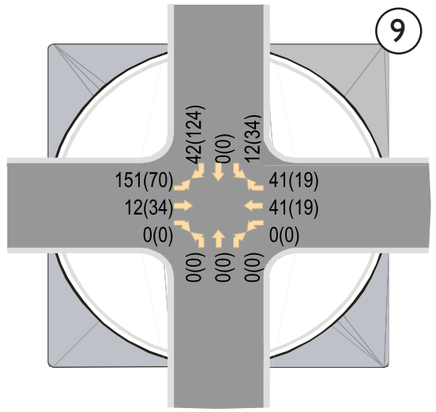

SR 87 & SR 84




SR 87 & Milligan Rd.




West Loop Rd. & Date St.




East Loop Rd. & Date St.

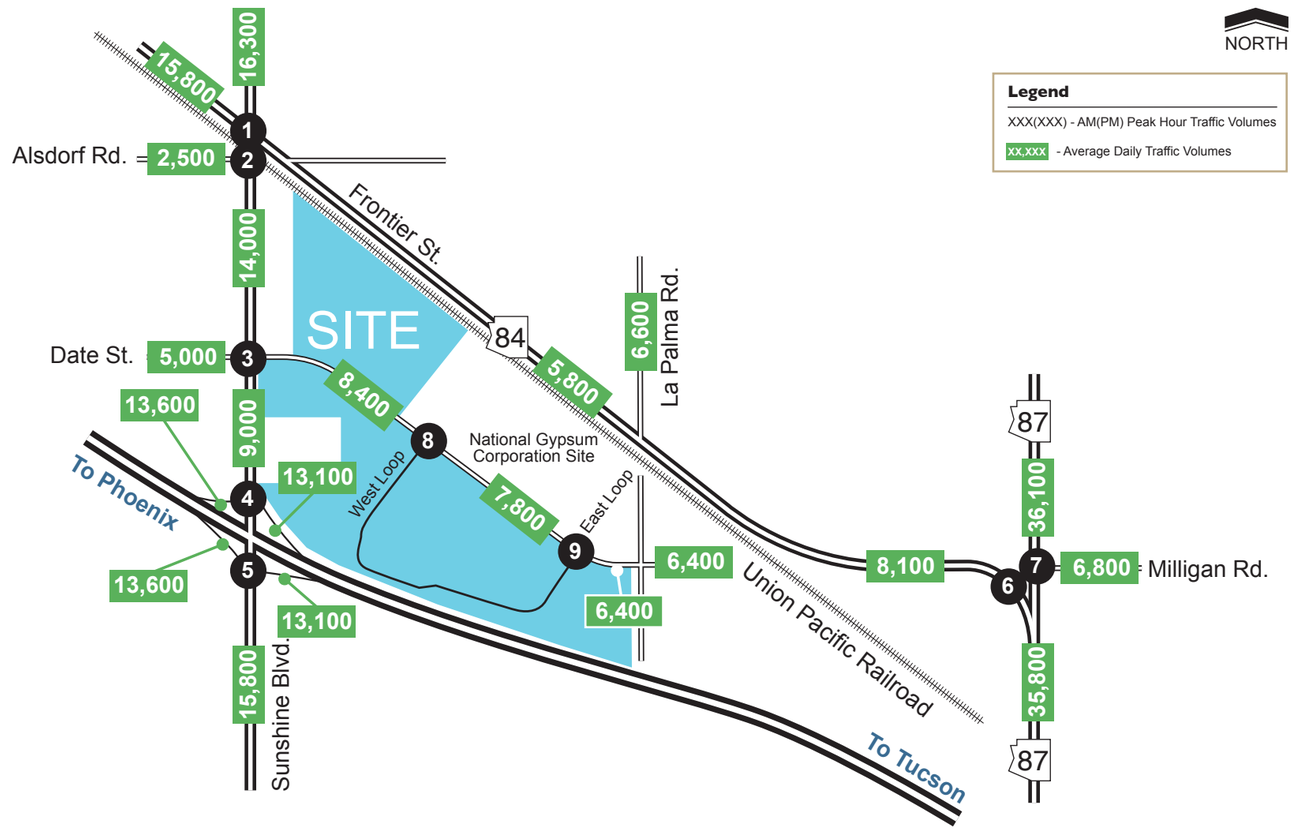
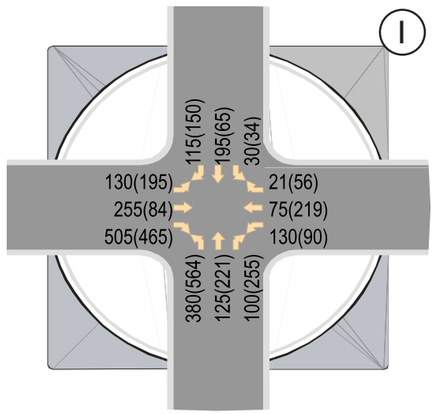
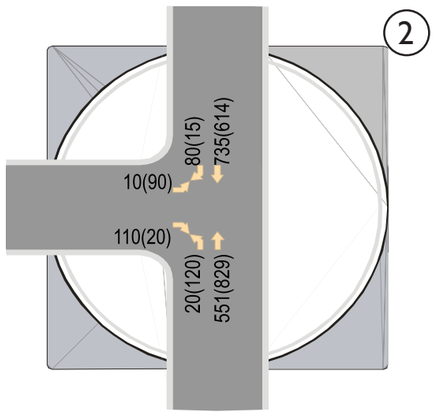


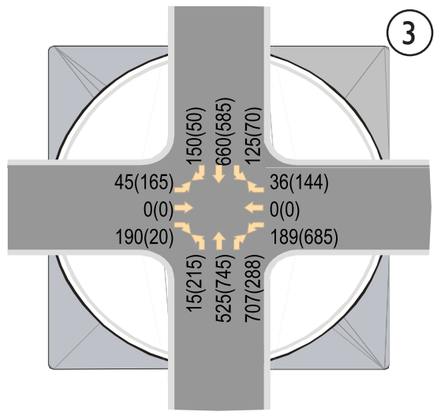

**Figure 7:** 2030 Background Traffic Volumes



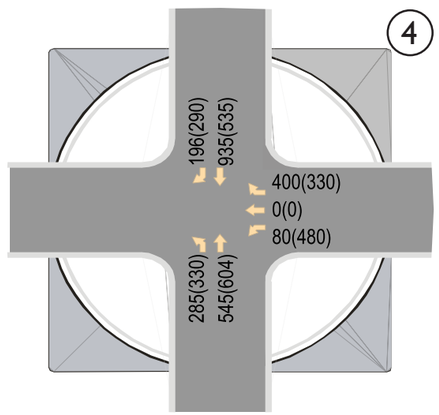

Sunshine Blvd. & SR 84



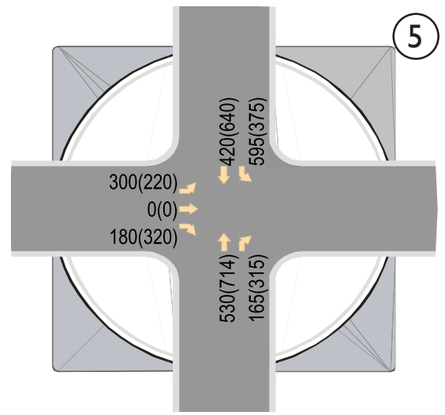

Sunshine Blvd. & Alsdorf Rd.



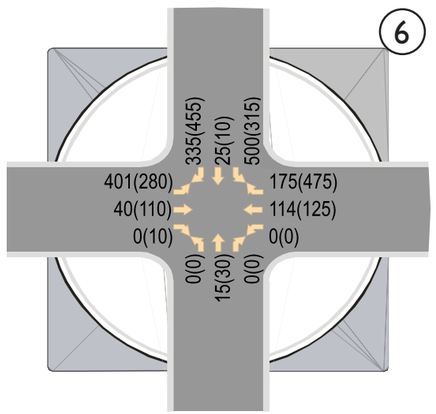

Sunshine Blvd. & Date St.



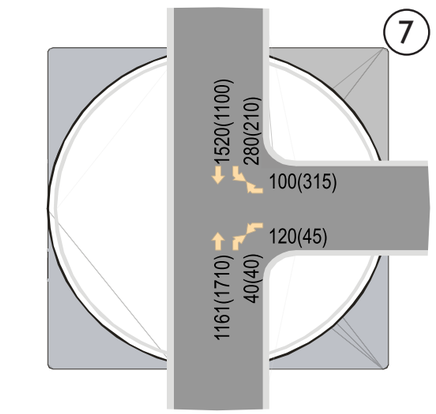

Sunshine Blvd. & I-10 WB Ramps



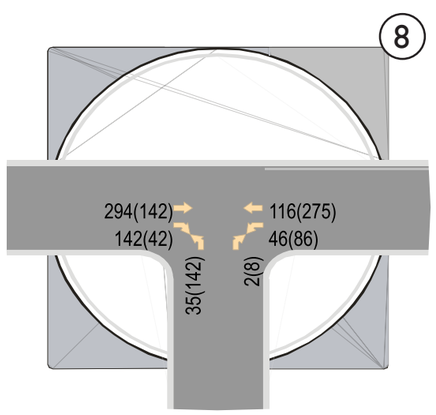

Sunshine Blvd. & I-10 EB Ramps



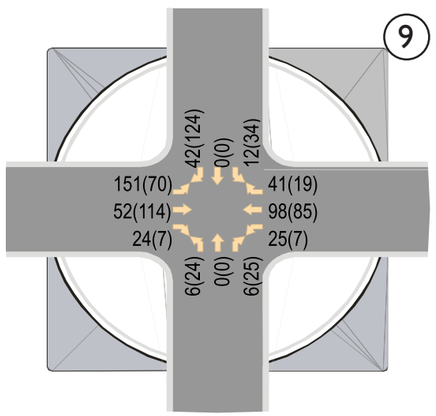

SR 87 & SR 84




SR 87 & Milligan Rd.




West Loop Rd. & Date St.




East Loop Rd. & Date St.

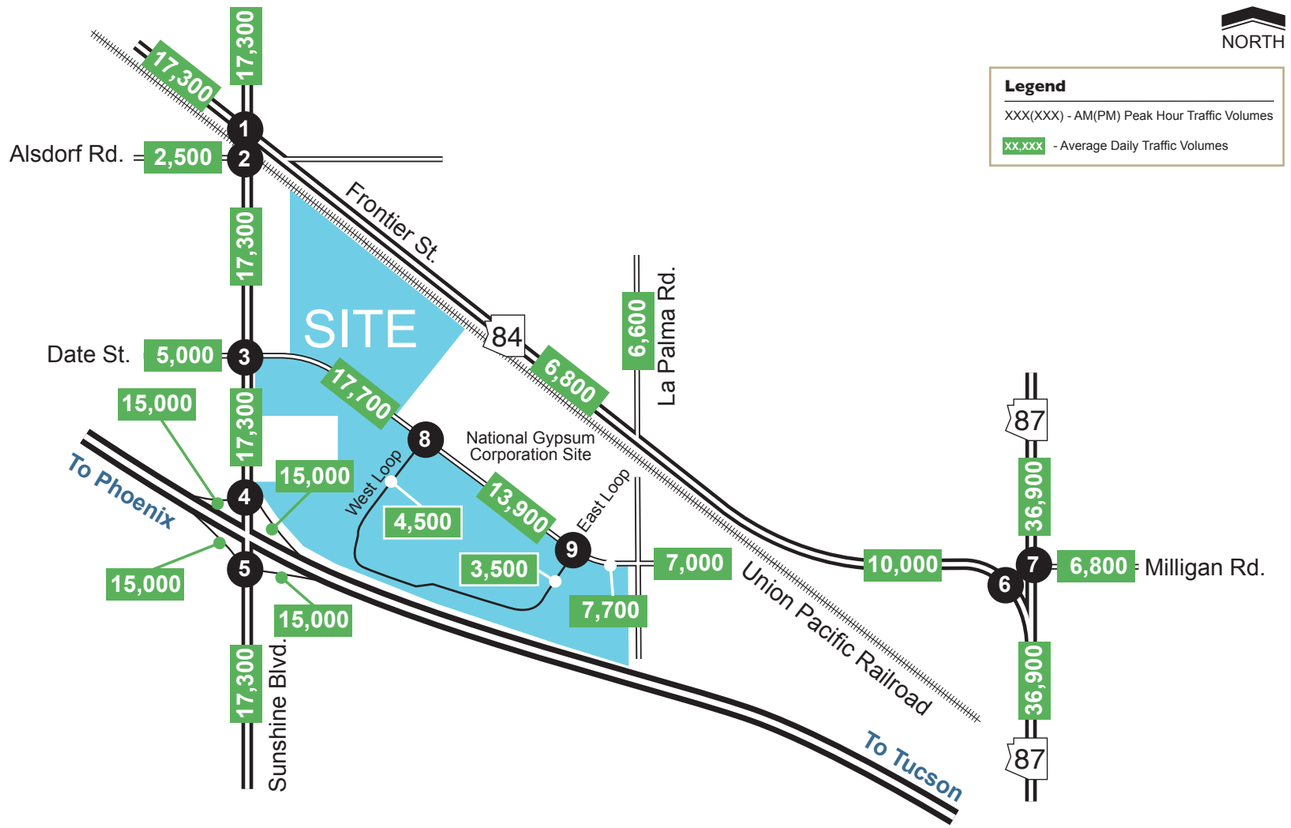



**Figure 8:** 2030 Total Traffic Volumes

# TRAFFIC AND IMPROVEMENT ANALYSIS

## *INTERSECTION CAPACITY ANALYSIS*

Peak hour capacity analyses were conducted for the study intersections and at all major site accesses. All study area intersections were analyzed using the methodologies presented in the HCM 2000 using TRAFFIX, version 8.0 analysis software. Unsignalized intersections shown as operating at poor levels of service in 2030 were also analyzed as signalized intersections where such intersections were considered likely future traffic signal locations, such as at the intersection of two section-line roadways.

For purpose of comparison, two analyses were completed for the 2030 horizon year: one for a background traffic scenario (i.e., without the development) and one for total traffic (with the development). The levels of service presented in the tables are based on the anticipated 2030 lane geometry and stop control. The overall intersection and approach levels of service, movement levels of service and average control delays resulting from this analysis are summarized in **Table 7** for horizon year 2030. The lane configurations and intersection traffic controls assumed in the 2030 analysis are depicted in **Figure 9**. The Traffix analysis summary sheets for 2030 are included in **Appendix F**.

**Table 7 – Intersection Capacity Analysis Summary, 2030**

| ID | Intersection | Stop Control | Approach | 2030 LOS AM(PM) | |
|---|---|---|---|---|---|
| | | | | No Build | Build |
| 1 | Sunshine Blvd. & SR-84 | Signalized | NB | D(C) | D(C) |
| | | | SB | D(D) | D(D) |
| | | | EB | B(B) | B(B) |
| | | | WB | D(D) | D(D) |
| | | | **Overall** | **C(C)** | **C(C)** |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 1-way stop (EB) | NB Left | A(A) | A(A) |
| | | | SB | A(A) | A(A) |
| | | | EB | B(F) | C(F) |
| | | | **Overall** | **A(A)** | **A(A)** |
| 3 | Sunshine Blvd. & Date St. | Signalized | NB | B(A) | B(B) |
| | | | SB | A(C) | A(C) |
| | | | EB | C(C) | D(C) |
| | | | WB | D(C) | E(C) |
| | | | **Overall** | **B(B)** | **C(C)** |
| 4 | Sunshine Blvd. & I-10 WB Ramps | 1-way stop (WB) | NB | B(B) | B(C) |
| | | | SB | C(D) | C(D) |
| | | | WB | D(C) | D(D) |
| | | | **Overall** | **C(C)** | **C(C)** |
| 5 | Sunshine Blvd. & I-10 EB Ramps | 1-way stop (EB) | NB | D(C) | D(C) |
| | | | SB | B(B) | B(B) |
| | | | EB | D(D) | D(D) |
| | | | **Overall** | **C(C)** | **C(C)** |

**Table 7 – Intersection Capacity Analysis Summary, 2030 (Continued.....)**

| ID | Intersection | Stop Control | Approach | 2030 LOS AM(PM) | |
|---|---|---|---|---|---|
| | | | | No Build | Build |
| 6 | SR-87 & SR-84 | Signalized | NB | E(E) | E(E) |
| | | | SB | C(C) | C(C) |
| | | | EB | C(D) | C(C) |
| | | | WB | C(B) | C(B) |
| | | | **Overall** | **C(C)** | **C(C)** |
| 7 | SR-87 & Milligan Rd. | Signalized | NB | B(C) | B(C) |
| | | | SB | B(C) | B(C) |
| | | | WB | E(E) | E(E) |
| | | | **Overall** | **B(C)** | **B(C)** |
| 8 | Loop A & Date St. | 1-way stop (NB) | NB | -(-) | B(B) |
| | | | EB | -(-) | A(A) |
| | | | WB | -(-) | A(A) |
| | | | **Overall** | **-(-)** | **A(A)** |
| 9 | Loop B & Date St. | 1-way stop (NB) | NB | -(-) | B(B) |
| | | | SB | A(A) | B(A) |
| | | | EB | A(A) | A(A) |
| | | | WB | A(A) | A(A) |
| | | | **Overall** | **A(A)** | **A(A)** |

By horizon year 2030, all study intersections are expected to operate with an overall acceptable level of service (LOS C or better) under the proposed lane configurations shown in **Figure 9**.

The intersection of Sunshine Boulevard and Alsdorf Road experiences a poor/failing level of service in the eastbound direction during the peak hours due to the expected regional growth within the area, thus increasing the north-south through traffic along Sunshine Boulevard. Poor levels of service during peak hours are not uncommon on side street approaches to major arterial roadways. The expected increase in traffic volumes along Sunshine Boulevard would decrease the number of acceptable gaps in traffic for eastbound left-turns. This increases delay to these eastbound movements resulting in a poor LOS during peak hours; however it is expected that these movements will operate at an acceptable LOS during non-peak hours. Furthermore, the Traffix software utilized for this analysis does not account for gaps in traffic due to near-by signalization. Although the PM peak hour experiences a failing LOS in the eastbound approach both delay and peak hour signal warrants are not meet. Also, due to the close proximity of the Union Pacific Railroad located approximately 80-feet north of Alsdorf Road a signal is not recommended.

The intersection of Sunshine Boulevard and Date Street experience a poor westbound approach LOS during the AM peak hour due to the need for more green time north/south. With an increase in westbound site traffic during the AM peak hour more green time is required for the westbound left-turns onto Sunshine Boulevard.

## *TRAFFIC SIGNAL WARRANT ANALYSIS*

Eight signal warrants defined in the 2003 MUTCD describe minimum conditions under which signal installations may be justified. The Manual suggests that traffic control signals should not be installed unless one or more of the signal warrants are met. However, the satisfaction of a warrant or warrants is not in itself justification for a signal. Every situation is unique and warrant guidelines must be supplemented by the effects of specific site conditions and the application of good engineering judgment. Installation of a traffic signal should improve the overall safety and/or operation of an intersection and should be considered only when deemed necessary by careful traffic analysis and after less restrictive solutions have been attempted. It was this criterion to which the anticipated approach traffic volumes along Sunshine Boulevard were compared to determine whether or not a traffic signal is currently warranted.

Many of the intersections along Sunshine Boulevard will require signalization in 2030 to achieve acceptable traffic operations. The requirement for signalization is largely due to the projected through traffic along Sunshine Boulevard in the future according to the City of Eloy SATS. Since this study has predicted future peak hour traffic volumes, they have been used as the likely indicator to determine the need for future traffic signalization at an intersection. The Manual on Uniform Traffic Control Devices (MUTCD) provides specific guidance on the application of peak hour volumes as compared to minimum threshold values established for roadways based on the number of approach lanes, this is considered Warrant 3. Excerpts from the MUTCD (2003) for Warrant 3 have been provided in **Appendix L**. **Table 8** displays the peak hour approach volumes for the major roadway (Sunshine Boulevard) and the highest volume approach along the minor roadway (SR-84, Date Street and the I-10 Off-Ramps). Additional traffic signal warrant evaluations should be prepared with each phase of development to determine the timing for the future signal installation.

### WARRANT 3: PEAK-HOUR

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

    1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach; and
    2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Category B was used to determine the relevance of the peak hour warrant for Sunshine Boulevard intersections. If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 70 km/h or exceeds 40 mph and if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, **Figure 4C-4** may be used in place of **Figure 4C-3** to satisfy the criteria in the second category of the Standard.

Since the speed limit on Sunshine Boulevard is 35 mph the 70% factor does not apply to the above warrant. **Table 8** summarizes the volume-based warrant analysis results for the projected 2030 traffic volumes.

**Table 8 – Volume-Based Traffic Signal Warrant Analysis Summary**

| Warrant | Hour of the Day | Projected Traffic Volume | Warrant Satisfying Traffic Volume | Projected Traffic Volume | Warrant Satisfying Traffic Volume | Is Warrant Met? |
|---|---|---|---|---|---|---|
| | | Major Approach Sunshine Boulevard | | Minor Approach | | |
| SR-84 | PM Peak | 1259 | N/A | 512 | 200 | YES |
| Date Street | PM Peak | 1953 | N/A | 757 | 150 | YES |
| Westbound Off-ramp | PM Peak | 1759 | N/A | 645 | 150 | YES |
| Eastbound Off-ramp | PM Peak | 2044 | N/A | 380 | 150 | YES |

** Notes: 1) Minor approach volumes represent all left turning vehicles plus half of the right turning vehicles.*
*2) The values represent minimum threshold volumes as the approach volumes on the major street exceed the maximum volumes on each of the appropriate graphs described above.*
*3) No reduction taken for right turns from major approach.*

Additional traffic signal warrant evaluations should be prepared with each phase of development to determine the timing for the future signal installation. Future signalization should be consistent with recommendations of the RSRSM and the City of Eloy SATS to foster future mobility along ITS corridors.

## *AUXILIARY LANES*

### *Left-turn Lanes*

Separate left-turn lanes shall be provided at all signalized intersections regardless of volumes. Where the design left-turn volume exceeds 300 vehicles per hour, a dual left-turn lane shall be constructed.

It is recommended that left turn lanes are provided on all approaches wherever permanent traffic signals are installed. It is also expected that offsite improvements will be designed so that, as surrounding development occurs, the full cross-section for each roadway would provide for dedicated left-turn lanes or a continuous two-way left-turn lane at each intersection and/or site access.

### *Right-turn Deceleration Lanes*

Per the *TRB Circular E-C019,* the 20% spillback factor should be utilized to determine the location and need for right turn deceleration lanes. This circular suggests that right-turn deceleration lanes should be provided at all locations where driveways intersect the major roadway. Since Date Street has already been constructed with a 4 through lanes, two in each direction, while the through volume of traffic for this type of facility is much lower than the threshold for capacity, right turn deceleration lanes along Date Street are not recommended. The outside lane will facilitate deceleration and turning movements while the inside lane will accommodate the through traffic. Right turn lanes should be further evaluated with each specific development and future driveway location according the RSRSM and the City of Eloy SATS.

### *Deceleration Lanes*

Per discussions with the City of Eloy right-turn deceleration lanes were not analyzed within this Master TIA. Deceleration lanes will be analyzed when each parcel within the Toltec Business Park is build. Both Pinal County and the City of Eloy do not have set criteria for deceleration lanes, therefore the MCDOT deceleration lane criteria should be utilized when she parcel comes online. A right-turn deceleration lane is warranted when any three of the following four criteria are met:

- The posted speed limit is 35 mph or the 85$^{th}$ percentile speed is greater than 35-mph.
- At least 1,000 vehicles per day are using or are expected to use the driveway for the development or adjacent developments (existing or future).
- At least 30 vehicles are expected to make right turns into the driveway for a one-hour period for the development or adjacent developments (existing or future).
- At least 5,000 vehicles per day are using or are expected to be using the adjacent street in the near future (five years after the development is built out).

In summary, should the City of Eloy adopt a deceleration criteria before the other parcel TIA's are needed those standards should be used instead.

## *QUEUING ANALYSIS*

Adequate turn storage should be supplied on any approach where turn lanes are permitted and/or warranted. A queuing analysis for all turn lanes was performed at all the study intersections under stop or signal control within the study area, according to the methodologies documented in *AASHTO's a Policy on Geometric Design of Highways and Streets* and *ADOT's Roadside Design Guide*. Each method was performed to compare the reported queue storage to help confirm sound recommendations for each study intersection. The intersections were analyzed to determine the turn lane queue storage needed to accommodate the expected regional growth and proposed site traffic volumes in the horizon year 2030.

According to the methodology documented in *A Policy on Geometric Design of Highways and Streets* (the AASHTO "Green Book"), the storage length for a turn lane is typically estimated as the length required to hold the average number of arriving vehicles per two minutes, where unsignalized, or per two signal cycles, where signalized.[1] The formulas used for the calculations are shown below. Detailed queue storage calculations are provided in **Appendix G**.

For signalized intersections, the storage length is determined by the following formula:

Storage Length = [2 x (veh/hr)/(cycles/hr)] x 25 feet

For unsignalized intersections, the storage length is determined by the following formula:

Storage Length = [(veh/hr)/(30 periods/hr)] x 25 feet

All signalized study intersections were analyzed with a 120 second cycle length. Per the ITE handbook "Industrial Park" land use (ITE land use code 130) truck trips accounted for 1 to 22 percent of the weekday traffic at the sites surveyed. The average for all sites surveyed was approximately 8 percent. For purposes of this queuing analysis it was assumed that 10 percent of the queuing vehicles would be heavy trucks and the other 90 percent passenger vehicles. Therefore, a 75-foot storage length was assumed to be required for 10 percent of all vehicle trips when calculating the queue storage needs. **Table 9** shows the calculated queue storage with an assumed 10 percent truck percentage.

**Table 9 – Queue Storage Lengths**

| ID | Intersection | Stop Control | Approach | 2030 Left-Turn Queue Storage Lengths | | | |
|---|---|---|---|---|---|---|---|
| | | | | AASHTO | [3] ADOT Minimum | [3] ADOT Desired | [5] Recommended |
| 1 | Sunshine Blvd. & SR-84 | Signalized | NB Left | [2] 575' | [2] 520' | [2] 600' | [1],[2] 350' |
| | | | SB Left | 150' | 175' | 330' | 150' |

[1] The American Association of Highway and Transportation Officials on pages 714-715 of its publication, *Geometric Design of Highways and Streets* ("AASHTO Green Book"), indicates that storage length for a turn lane, exclusive of taper, "should usually be based on one and one-half to two times the average number of vehicles that would store per cycle" at a signalized intersection. In this analysis, CivTech used two signal cycles.

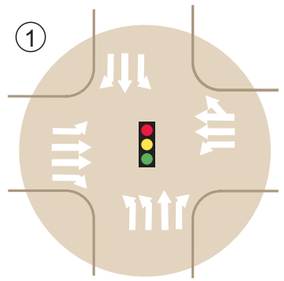
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | EB Left | 450' | 415' | 570' | [1] 350' |
| | | | WB Left | 275' | 315' | 470' | 275' |
| | | | NB Right | 550' | 515' | 670' | [1], [6] 350' |
| | | | SB Right | 300' | 340' | 495' | 300' |
| | | | EB Right | 1,075' | 940' | 1095' | [1], [6] 350' |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 1-way Stop (EB) | NB Left | 175' | - | - | 175' |
| 3 | Sunshine Blvd. & Date St. | Signalized | NB Left | 475' | - | - | [1] 350' |
| | | | SB Left | 275' | - | - | 275' |
| | | | EB Left | 400' | - | - | [1] 350' |
| | | | WB Left | [2] 713' | - | - | [1],[2] 350' |
| | | | NB Right | 1,450' | - | - | [1], [6] 350' |
| | | | WB Right | 300' | - | - | 300' |
| 4 | Sunshine Blvd. & I-10 WB Ramps | Signalized | NB Left | 725' | 640' | 795' | [1] 350' |
| | | | WB Left | 1,025' | 890' | 1045' | [1],[2] 350' |
| | | | SB Right | 600' | 590' | 745' | [1], [6] 350' |
| | | | WB Right | 825' | 765' | 920' | [1],[2], [6] 350' |
| 5 | Sunshine Blvd. & I-10 EB Ramps | Signalized | SB Left | 1200' | 1090' | 1245' | [1] 350' |
| | | | EB Left | 600' | 590' | 745' | [1],[2] 350' |
| | | | NB Right | 700' | 615' | 770' | [1] 350' |
| | | | EB Right | 725' | 640' | 795' | [1],[2], [6] 350' |
| 6 | SR-87 & SR-84 | Signalized | NB Left | - | - | - | [1] 150' |
| | | | SB Left | [2] 525' | [2] 470' | [2] 550' | [2] 275' |
| | | | EB Left | [2] 425' | [2] 385' | [2] 460' | [1],[2] 350' |
| | | | WB Left | - | - | - | [1] 150' |
| | | | SB Right | 1,000' | 865' | 1020' | [1], [6] 350' |
| | | | WB Right | 1,025' | 890' | 1045' | [1], [6] 350' |
| 7 | SR-87 & Milligan Rd. | Signalized | SB Left | 575' | 565' | 720' | [1] 350' |
| | | | WB Left | 275' | 290' | 445' | 275' |
| 8 | West Loop Rd. & Date St. | 1-way Stop (NB) | NB Left | 200' | - | - | 200' |
| | | | WB Left | 150' | - | - | 150' |
| | | | EB Right | 200' | - | - | 200' |
| 9 | East Loop Rd. & Date St. | 2-way Stop (NB/SB) | NB Left | 100' | - | - | 100' |
| | | | SB Left | 125' | - | - | 125' |
| | | | EB Left | 225' | - | - | 225' |
| | | | WB Left | 100' | - | - | 100' |

(1) A minimum of 75' of storage is recommended for all movements at unsignalized intersections and 150' of storage at signalized intersections. For practicality/constructability a maximum queue storage length of 350' is recommended.
(2) Dual turn queue storage does not include taper length.
(3) Calculated per ADOT criteria as shown in the ADOT Design Guidelines Section 4, updated by the memo dated March 16, 1999. Length shown includes the queue distance plus the braking distance minus 1/3 of the taper distance.
(4) Queue Storage length based on Synchro 50$^{th}$ percentile queue storage calculations. Does not include taper calculations.
(5) Recommended storage length does not include taper length.
(6) Right-turn queue lengths can often be reduced due to right on red and signal overlap phasing.

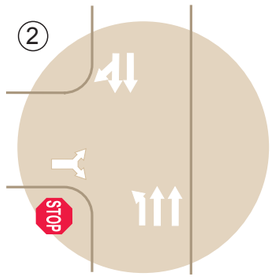
The resulting turn-lane storage queue length requirements are summarized in **Table 9**. It is recommended that additional storage length calculations should be completed prior to implementation of any future capacity improvements to these intersections to more accurately reflect the conditions at that time since additional development may affect CivTech's results.

## FUTURE ROADWAY CLASSIFICATION AND LANE REQUIREMENTS

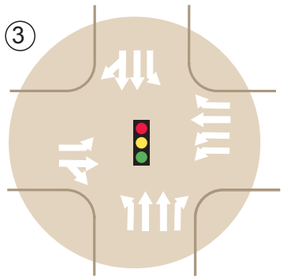
As a result of the intersection capacity analyses and the projected ADT's, the proposed intersection approach lane configuration for the study intersections in the 2030 horizon year is shown in **Figure 9** Future roadway classifications were determined based on the ultimate ADT's from the *City of Eloy 2010 SATS*. **Figure 10** illustrates the future roadway classification based on the anticipated 2030 ADT's.



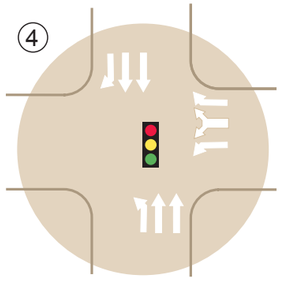

Sunshine Blvd. & SR 84



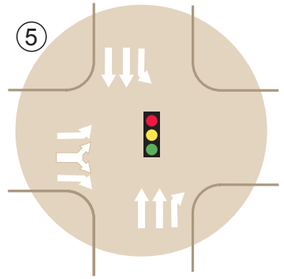

Sunshine Blvd. & Alsdorf Rd.



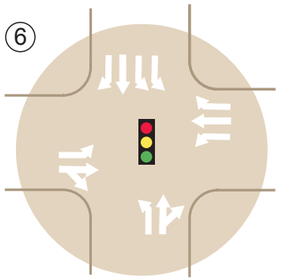

Sunshine Blvd. & Date St.



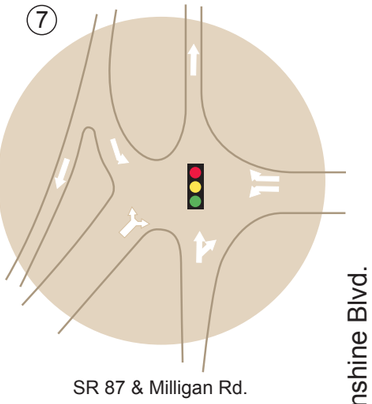

Sunshine Blvd. & I-10 WB Ramps



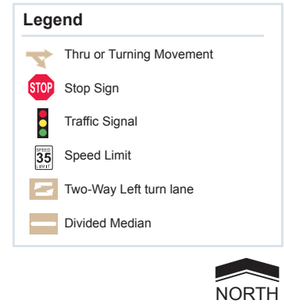

Sunshine Blvd. & I-10 EB Ramps

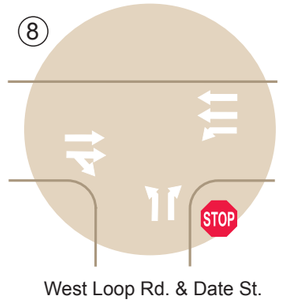



SR 87 & SR 84

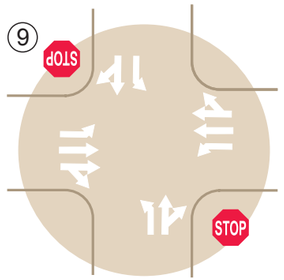



SR 87 & Milligan Rd.




West Loop Rd. & Date St.




East Loop Rd. & Date St.

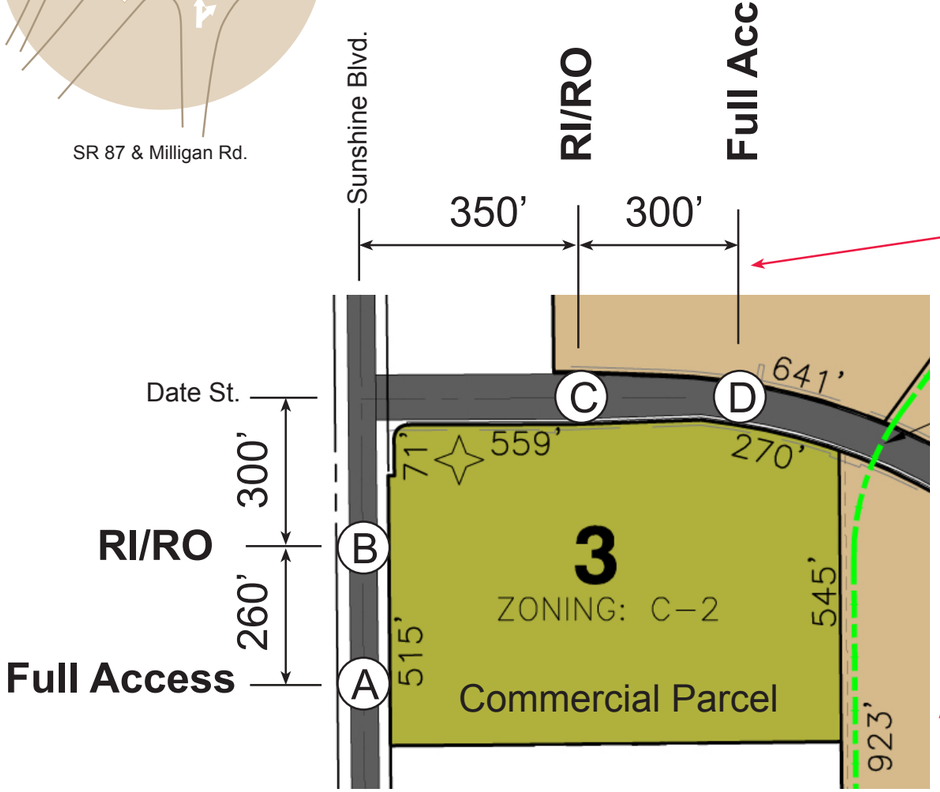






***Figure 9:*** 2030 Proposed Lane Configurations and Stop Control

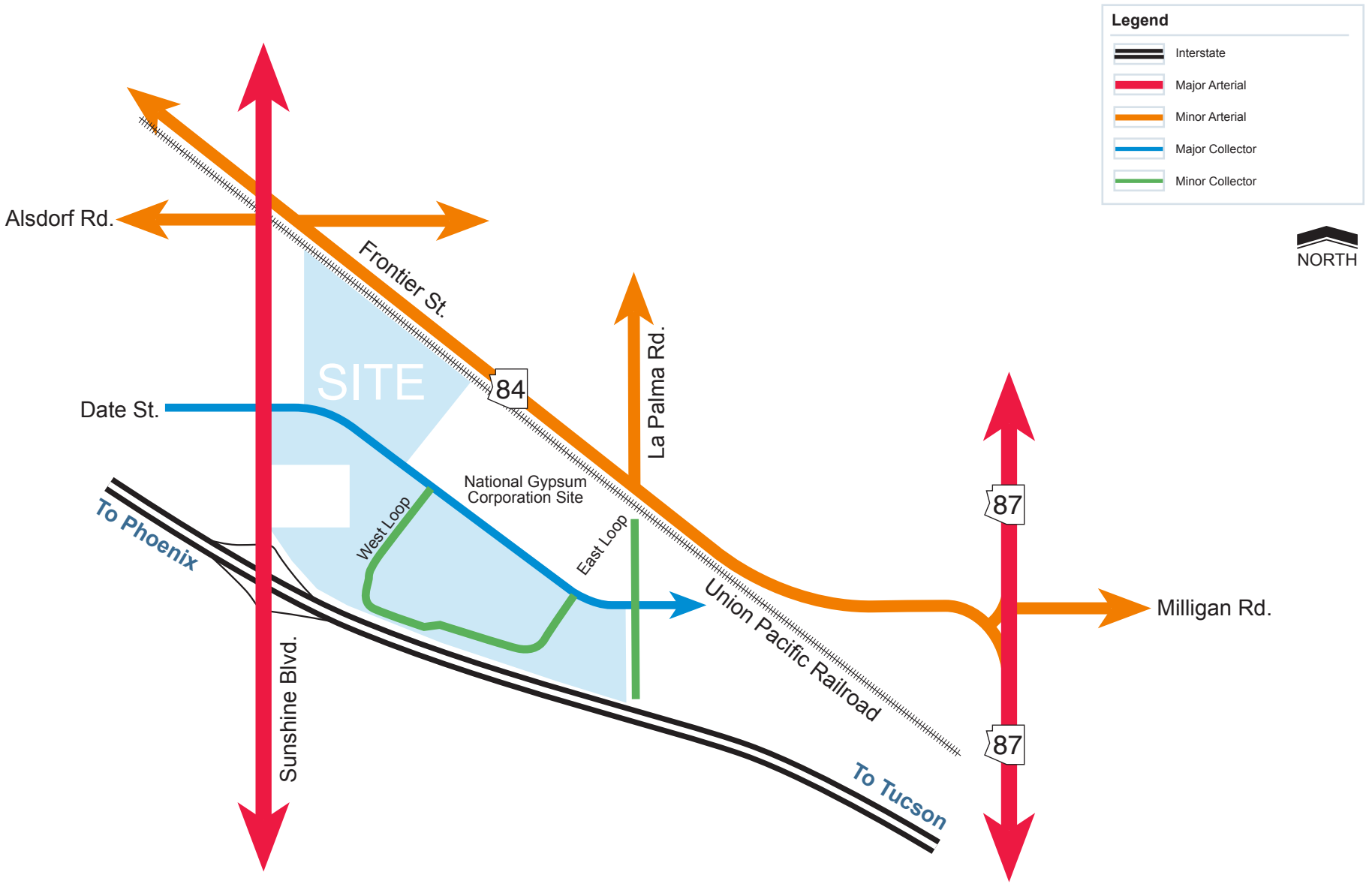
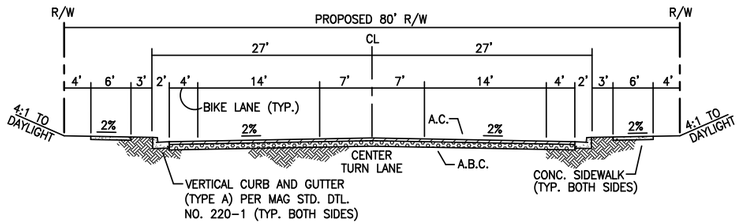
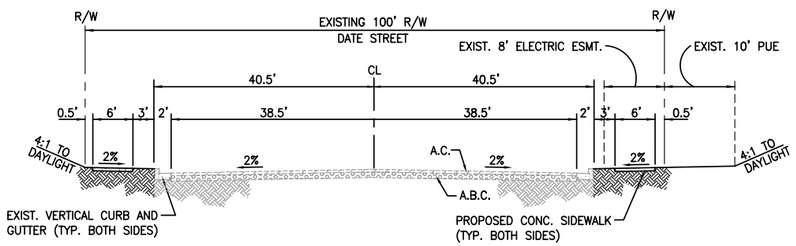


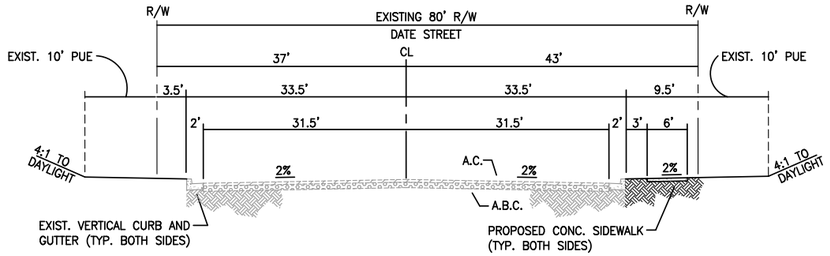

**Figure 10:** Future Roadway Classification



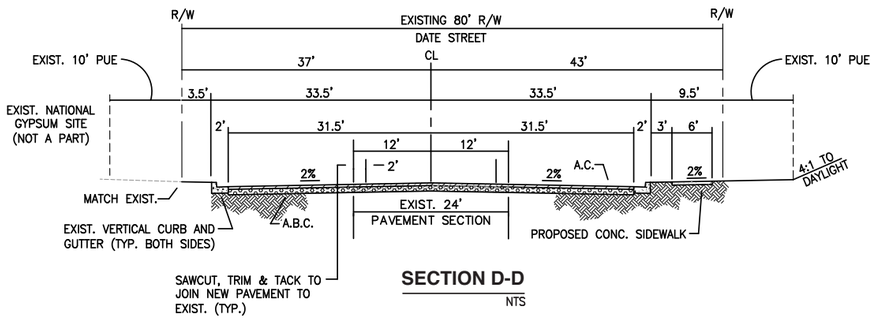

**SECTION A-A**
NTS



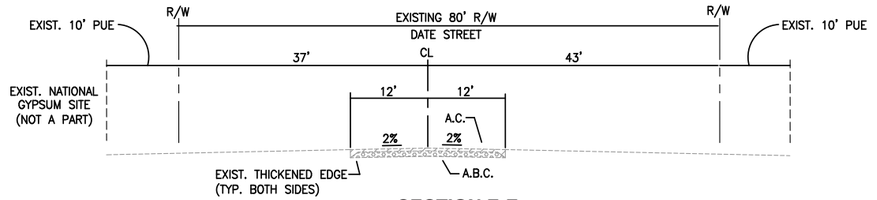

**SECTION B-B**
NTS



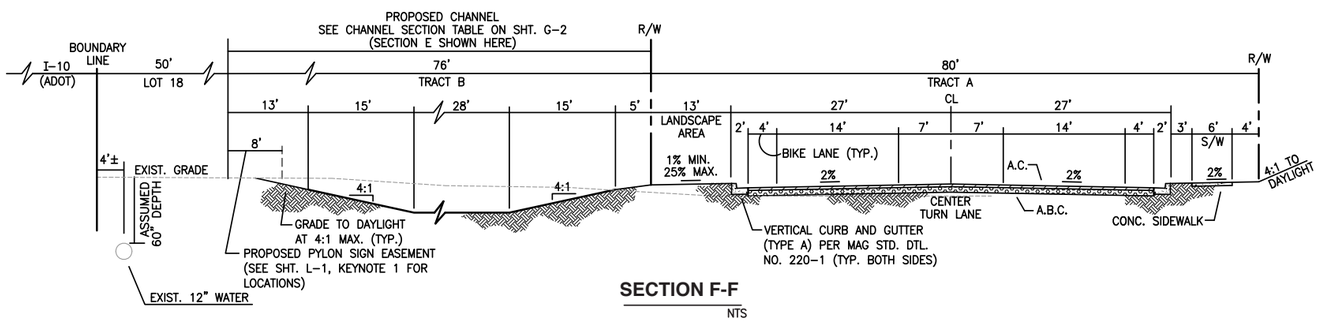

**SECTION C-C**
NTS



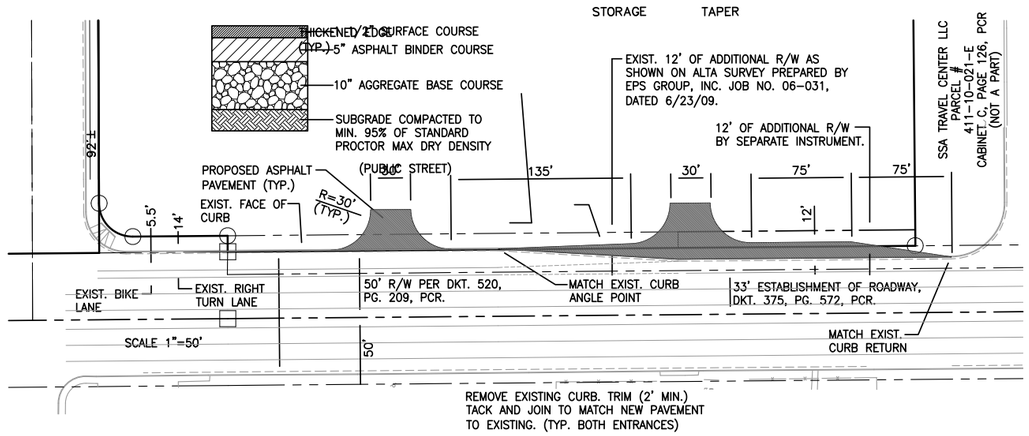

**SECTION D-D**
NTS




**SECTION E-E**
NTS




**SECTION F-F**
NTS




**DETAIL 1**

***Figure 11:*** Proposed Typical Sections

## CRITICAL ACCESS MANAGEMENT REQUIREMENTS

This master study was prepared as a guiding document for the future Sunshine Industrial Park development as part of the zoning process. Since site specific developments have not been shown, and the timing of site specific development is unknown, exact access locations have not been provided for review or approval. Future access along Date Street, Sunshine Boulevard and the Loop Road should generally follow the guidance provided by the RSR Access Management Requirements and the City of Eloy SATS.

## SIGHT DISTANCE

Adequate sight distances must be provided at intersections. A sight triangle is the area encompassed by the line of sight from a stopped vehicle on the minor roadway to the approaching vehicle on the major roadway: there must be sufficient unobstructed sight distance along both approaches of a street or driveway intersection and across their included corners to allow operators of vehicles to see each other. There must also be sufficient sight distance along the major street to allow a driver intending to turn left into the site to see a vehicle approaching in the opposite direction.

A developer can ensure that adequate sight distance is provided at the intersections for left and right turning movements from the development in several ways. Landscaping should be maintained at a maximum of three feet in height or as otherwise specified by the City of Eloy. Tree branches lower than seven feet should be trimmed and maintained to meet current acceptable landscape requirements.

An intersection sight distance analysis was performed to set guidelines for establishing lines of sight for the proposed development at the site access points. Using the guidelines set forth by *A Policy on Geometric Design of Highways and Streets*, appropriate sight distances were calculated for the right and left turn/crossing movements out of each site driveway ("Case B2" and "Case B3/B1," respectively) and the left turn movement into these site driveways ("Case F").

It was assumed that Sunshine Boulevard would have a design speed of 45-mph and Date Street would have a design speed of 40-mph, respectively. It was also anticipated that both Sunshine Boulevard and Date Street would provide two (2) through lanes in each direction with a center two-way left-turn lane. Recommended sight distances for movements from site driveways are summarized in **Table 9**. The calculations for these sight distances can be found in **Appendix H**.

**Table 10 – Recommended Sight Distance**

| Roadway | Design Speed (mph) | Cars (ft) | | | Trucks (ft) | | |
|---|---|---|---|---|---|---|---|
| | | Left Case B1 | Right Case B2 | Ahead Case F | Left Case B1 | Right Case B2 | Ahead Case F |
| Date Street | 40 | 500 | 445 | 385 | 645 | 858 | 465 |
| Sunshine Boulevard | 45 | 565 | 500 | 430 | 725 | 655 | 525 |

It is recommended that sight triangles be designed at all site access driveways to provide at least the required sight distance as found in Table 9 or as otherwise required by the City of Eloy. CivTech recommends that sight distance be recalculated if roadways are to be widened beyond the assumed cross-sections.

# CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations have been documented in this study:

- All existing study intersections are expected to operate with an overall passing level of service (LOS A) under existing conditions.
- The proposed development is expected to generate 13,167 total daily trips, with 826 occurring in the AM peak hour and 1,140 occurring in the PM peak hour.
- The recommendations provided herein relate to the overall master development and the required improvements at full buildout. In order to facilitate the interim improvements required to allow for acceptable traffic operations, an updated analysis should be prepared for each phase of development to ensure that off-site improvements are adequately recommended and constructed.
- The new Sunshine Boulevard traffic interchange improvements as recommended in the *I-10 Corridor Study: Junction I-8 to Tangerine Road* are anticipated be in place and fully constructed by horizon year 2030.
- A 50-foot strip of land adjacent to I-10 located on the proposed Sunshine Industrial Park site will remain undeveloped. This land will be reserved for future right-of-way purchase should it be required for the I-10 widening project.
- The City of Eloy 2010 Small Area Transportation Study (SATS) indicates that Sunshine Road is considered to be a regionally significant route (RSR) in the future even with the anticipated additional widening of I-10. As such, Sunshine Boulevard is programmed as a six-lane major arterial street within a 150-foot right-of-way.
- All collector streets shown within the Sunshine Industrial Park shall be commercial collectors containing 80-feet of right-of-way per the City of Eloy SATS.
- The National Gypsum Corporation ("National Gypsum") has planned for a facility located just north of the Sunshine Industrial Park. A Traffic Impact Study was approved for National Gypsum by the City of Eloy and the ultimate Date Street paving has been constructed for Date Street between Sunshine Boulevard and the National Gypsum site. Excerpts from the National Gypsum TIA have been provided in **Appendix E**.
- This master study was prepared as a guiding document for the future Sunshine Industrial Park development as part of the zoning process. Since site specific developments have not been shown, and the timing of site specific development is unknown, exact access locations have not been provided for review or approval. Future access along Date Street, Sunshine Boulevard and the Loop Road should generally follow the guidance provided by the RSR Access Management Requirements and the City of Eloy SATS.
- Interparcel connectivity between commercial developments would significantly enhance the circulation within and surrounding the Sunshine Industrial Park. The City may require joint/assembled driveways to support their interest of preserving

safety along with balancing the access locations in comparison to the through traffic along the adjacent roadways.

*Horizon Year 2030*

- By horizon year 2030, all study intersections are expected to operate with an acceptable level of service (LOS C or better) under the proposed lane configurations shown in **Figure 9**.
- The intersection of Sunshine Boulevard and Alsdorf Road experiences a poor/failing level of service in the eastbound direction during the peak hours due to the expected regional growth within the area, thus increasing the north-south through traffic along Sunshine Boulevard. Poor levels of service during peak hours are not uncommon on side street approaches to major arterial roadways. The expected increase in traffic volumes along Sunshine Boulevard would decrease the number of acceptable gaps in traffic for eastbound left-turns. This increases delay to these eastbound movements resulting in a poor LOS during peak hours; however it is expected that these movements will operate at an acceptable LOS during non-peak hours. Furthermore, the Traffix software utilized for this analysis does not account for gaps in traffic due to near-by signalization. Although the PM peak hour experiences a failing LOS in the eastbound approach both delay and peak hour signal warrants are not meet. Also, due to the close proximity of the Union Pacific Railroad located approximately 80-feet north of Alsdorf Road a signal is not recommended.
- The intersection of Sunshine Boulevard and Date Street experience a poor westbound approach LOS during the AM peak hour due to the need for more green time north/south. With an increase in westbound site traffic during the AM peak hour more green time is needed for the westbound left-turns onto Sunshine Boulevard. This evaluation does not assume the Sunshine Boulevard has been constructed to its ultimate six-lane condition but instead a more conservative evaluation of Sunshine Boulevard in its existing condition. Traffic signalization will be requited at Sunshine Boulevard/SR-84, Sunshine Boulevard/Date Street, Sunshine Boulevard/I-10 Westbound Off-Ramp and the Sunshine Boulevard/1-10 Eastbound Off-Ramp. A traffic signal warrant analysis has been shown for the peak hour approach volumes in **Table 8** and calculation summary sheets have been provided in **Appendix L**. Additional traffic signal warrant evaluations should be prepared with each phase of development to determine the timing for the future signal installation. Future signalization should be consistent with recommendations of the RSRSM and the City of Eloy SATS to foster future mobility along ITS corridors.
- A right-turn deceleration lane is warranted at the intersection of West Loop Road and Date Street. However, due to the minor eastbound through volumes and the four-lane arterial street section already constructed, the outside lane will function as the dedicated right turn deceleration lane. The land area serviced by Date Street is fixed and the volume of traffic along Date Street will be limited by the land area that is services. A separate dedicated lane is not recommended along Date Street at the public street intersections. Additional deceleration lane calculations should be prepared for individual uses within the site as they are proposed. Since the development is industrial in nature, accommodations for vehicles storage for left

turns, maneuverability of large trucks and entrance gaps and tapers for these larger vehicles into turn lanes should be considered.

- Should right turn lanes be considered for uses within the Sunshine Industrial Park, the length of deceleration lane should be calculated using the 20 percent spillback length as reported in TRB Circular E-C01. The length of deceleration lane along with the suggested driveway spacing has been provided in **Appendix K**.
- The contractor should ensure that adequate sight distance is provided at all site access points to allow safe left and right-turning movements from the development. Landscaping should be maintained at a maximum of three (3) feet in height. To maintain sight distance, tree branches should be trimmed lower than seven feet and maintained to meet current acceptable landscape requirements while maintaining sight distance.

The commercial parcel located in the southeast corner of Sunshine Boulevard and Date Street is proposed to have two (2) site access points along Sunshine Boulevard and two (2) along Date Street. Sunshine Boulevard is proposed to include one (1) 3/4 access point approximately 560-feet from the intersection of Sunshine Boulevard and Date Street (centerline to centerline) and one (1) right-in/right-out access point approximately 300-feet from the intersection. Date Street is proposed to include one (1) full access point approximately 650-feet from the intersection of Sunshine Boulevard and Date Street (centerline to centerline) and one (1) right-in/right-out access point approximately 300-feet from the intersection. All access points, as proposed for the commercial area, provide sufficient queuing distance for all turning movements and exceed the required stopping sight distance for safety. Although the access along Sunshine Boulevard has been preliminarily reviewed, these accesses are subject to final City approval during the City's site plan approval process. An access plan for the commercial development located along Sunshine Boulevard is shown in **Appendix I**.

# LIST OF REFERENCES

*A Policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials, Washington, D.C., 2004.

*Design and Safety of Pedestrian Facilities*, Institute of Transportation Engineers, Washington, D.C., March 1998.

*Highway Capacity Manual.* Transportation Research Board, National Research Council, Washington, D.C., 2000.

*Manual of Uniform Traffic Control Devices.* U.S. Department of Transportation, Federal Highways Administration, Washington, D.C., 2003.

*Transportation and Land Development*, Stover, V. G. and Koepke, F. J., Institute of Transportation Engineers, Washington, D.C, 1988.

*Trip Generation 8th Edition*, Institute of Transportation Engineers, Washington, D.C., 2008.

*City of Eloy Small Area Transportation Study (SATS)*, Lima & Associates, Phoenix, Arizona, March 2010

*Pinal County Small Area Transportation Study (SATS)*, Kirkham Michael Consulting Engineers, Phoenix, Arizona, August 2006.

*Interstate 10 Corridor Study: Junction I-8 to Tangerine Road,* Interstate Tucson *District, Arizona Department of Transportation, September 2008.*

*Transportation Research Board Circular E-C01: Driveway Spacing and Traffic Operations, Jerome S. Gluck, Greg Haas, Jamal Mahmood: Urbitran Associates; Herbert S. Levinson: Transportation Consultant.*

# TECHNICAL APPENDICES


| | |
|---|---|
| **APPENDIX A:** | **REVIEW COMMENTS (RESERVED)** |
| **APPENDIX B:** | **EXISTING TRAFFIC COUNTS** |
| **APPENDIX C:** | **EXISTING CAPACITY ANALYSIS** |
| **APPENDIX D:** | **SUNSHINE INDUSTRIAL PARK TRIP GENERATION** |
| **APPENDIX E:** | **BACKGROUND TRAFFIC CALCULATIONS** |
| **APPENDIX F:** | **2030 PEAK HOUR TRAFFIC ANALYSIS** |
| **APPENDIX G:** | **2030 QUEUE LENGTH ANALYSIS** |
| **APPENDIX H:** | **SIGHT DISTANCE ANALYSIS** |
| **APPENDIX I:** | **COMMERICAL SITE PLAN** |
| **APPENDIX J:** | **MILLIGAN ROAD ABANDONMENT LETTER** |
| **APPENDIX K:** | **TRB CIRCULAR E-C019** |
| **APPENDIX L:** | **PEAK HOUR WARRANT ANALYSIS, MUTCD WARRANT 3** |

# APPENDIX A

## CITY OF ELOY COMMENTS

## (RESERVED)

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

| Item No. | Reviewer | Location | Code | Review Comment | Response |
|---|---|---|---|---|---|
| 1. | Woodrow Scoutten | | 1 | Please clarify the opening year time frame for this development. The report references 2010 as existing and then 2030 (twenty year horizon after opening year) which appears contradicting considering that this development is not completed yet. Please refine horizon and provide a forecast for opening year. | This is a master traffic impact analysis. Per the pre-TIA meeting with Mr. John Mitchell at the City of Eloy, only the 2030 horizon was required for evaluation. |
| 2. | Woodrow Scoutten | | 1 | The 2010 SATS indicates that Sunshine Road is considered to be a regionally significant route (RSR) even with additional freeway corridors and shall be programmed as a six lane major arterial classification with a RSR designation and shall contain 150 of Right-of-Way. | Agreed. |
| 3. | Woodrow Scoutten | | 1 | Please provide an exhibit of proposed/ultimate roadway classifications showing the functional classification and right-of-way and whether or not the right-of-way (if any) will be dedicated to the City. Within the exhibit, please provide a summary table summarizing current rights-of-way and proposed rights-of-way and respective functional classification on all roads within development and roadways adjacent to and contained within the analysis region as part of the regional traffic study. | This has been completed on Figure 10 and an additional Figure 11 has also been added. |
| 4. | Woodrow Scoutten | | 1 | Please provide site specific traffic exhibit(s) showing site generated ADT's and respective intersection turning movements. | This information was included on Figures 6, 7 and 8. It remains in these Figures for your review. |

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| Item No. | Reviewer | Location | Code | Review Comment | Response |
|---|---|---|---|---|---|
| 5. | Woodrow Scoutten | | 1 | Please also provide a separate site specific traffic exhibit(s) showing site generated ADT's from the National Gypsum Plant traffic report that includes ADT volumes and turning movements. Please include background traffic to account for the National Gypsum Company in the event that National Gypsum is opened prior to opening year of the Sunshine Industrial Park. | Excerpts from the National Gypsum TIA have been included in the appendix for reference. Should National Gypsum develop first, the improvements required are shown within the National Gypsum TIA. Furthermore, most of the improvements required have already been constructed. |
| 6. | Woodrow Scoutten | | 1 | Please also include traffic generated to the parcel that is adjacent to Sunshine Industrial Park and National Gypsum as a separate site specific traffic generation that also loads onto Date Street. This is to separate and distinct from the other two exhibits outlined in comment #5. | The property located to the east was assumed to contain warehouse and industrial land uses similar to the Sunshine Industrial Park project. The trip generation for this area has been added to Appendix D. |
| 7. | Woodrow Scoutten | | 1 | Please double check ADT volumes on various exhibits as some locations on each appear to have incorrect or inconsistent volumes between intersection roadway segments that do not balance. | ADT volumes have been reviewed and revised in some locations. Specifically, revisions were provided for Date Street between intersections 8 and 9. |

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| Item No. | Reviewer | Location | Code | Review Comment | Response |
|---|---|---|---|---|---|
| 8. | Woodrow Scoutten | | 1 | Due to the high truck factor and volume that this development generates along with keeping with the access management intentions of the 2010 SATS report, please include right turn bays at all intersections along Sunshine and Date Streets as well as West and East Loop roads that are contained within the development. Please do not use the MCDOT right turn bay warranting criteria and also include additional provisions for increased storage, maneuverability and entrance gap/tapers to said right turn bays. | This is a master traffic impact analysis. Industrial developments located within the Sunshine Industrial Park will be required to provide traffic statements showing the need for deceleration lanes. Only the major intersections have been evaluated herein. The queuing method and right turn lane needs have now been based on the 20% spillback method instead of the MCDOT methodology. |
| 9. | Woodrow Scoutten | | 1 | Please identify the functional classification of West and East Loop roads and include ADT volumes generated by the site and background traffic that may also load onto these streets. | This information was included in Figures 6, 7 and 10. These have now been updated to include the right-of-way for each roadway classification as shown in Figure 11. |
| 10. | Woodrow Scoutten | | 1 | The current development shows only one major access point for ingress and egress at Date Street. In the event that Date Street is closed for incident management reasons, no effective alternative exists to provide for alternate safety ingress or egress. Therefore, please provide secondary connection to this development by providing a critical connection of West and East Loop Road to Milligan Road to the south side of the development to provide a secondary access point to the development. This secondary access may eventually connect to a future I-10 frontage road and also may require additional improvements to Milligan Road. | Per discussions with Mr. John Mitchell, this area is understood to have only one major point of access. Discussions with adjacent neighbors for cross access have been ongoing. ADOT has refused a connection to the frontage road in this location. |

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|---|---|---|---|---|---|
| 11. | Woodrow Scoutten | | 1 | Has any discussion occurred with ADOT about plans for any frontage road along I-10 adjacent to the south portion of the development? Secondary access to a possible frontage road could offer a viable solution to secondary access to the development, National Gypsum and the parcel to the east by allowing secondary access in comment #9, to access a possible frontage road. | |
| 12. | Woodrow Scoutten | | 1 | All collector streets within the development shall be a commercial collector and shall contain 80 feet right-of-way as per City of Eloy Small Area Transportation Study (SATS). | Agreed, Please see Figure 11 for typical sections relating to roadway classifications shown in Figure 10. |
| 13. | Woodrow Scoutten | | 1 | Please provide a signal warrant analysis to support signalization for intersections shown and any additional intersections that may require signalization within the development. Please provide a summary of results in table format. | A signal warrant evaluation has been provided using the peak hour and daily warrants provided by Traffix. Appendix J has been added to provide this information. A table has been provided within the TIA. |
| 14. | Woodrow Scoutten | | 1 | Should above comment #12 results warrant signalization, please incorporate recommended signalization locations along Toltec that are consistent with recommendations of the Regionally Significant Routes Access Management Manual as approved by City of Eloy and the SATS as part of general signal spacing for future ITS corridors that foster mobility. | This information has been added to the TIA. |

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| 15. | Woodrow Scoutten | | 1 | Please also provide a critical access management plan/exhibit for the entire development showing interim and ultimate treatments of appropriate right turn lanes, auxiliary lanes, and raised medians with 1/2 access and 3/4 access controls as per the recommendations from the City of Eloy approved RSR Access Management Requirements. | This is a master traffic impact analysis for the zoning of the property. A statement has been added to the recommendations and conclusions requiring that the access spacing meet the requirements specified in the RSRSM. |
| 16. | Woodrow Scoutten | | 1 | Please provide some additional existing condition information and future impacts that development contributes to the operations of the existing Road Pilot Truck Stop adjacent to the proposed development located NE X of Milligan Road and Sunshine Boulevard, especially when providing secondary access on Milligan Road to East and West Loop Roads. | While the operations of the truck stop are somewhat irrelevant to the site. Milligan Road becomes Date Street. While there is a possibility to provide connectivity, it would be emergency access only and not for site generated trips. |
| 17. | Woodrow Scoutten | | 1 | Please also clarify the utilization of 'two cycle lengths' contained in the footnote for calculating the queue lengths in determining left turn lane design lengths. Please also include analysis for right turn bay design lengths in addition to left turn bay design lengths. | Please see Appendix G for this information. Two signal cycles is the conservative estimate for queuing per the AASHTO and MCDOT (which utilized the AASHTO calculation) methods for determining storage. |



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| 18. | Woodrow Scoutten | | 1 | While it is understood that this report is master in planning and area specific studies will be completed on a case by case basis, please also clarify why some overall ADOT and AASHTO lengths appear to show only one long left turn lane length and some others appear to have dual left turn lengths. Essentially please clarify by revising the left turn lane recommendations to clearly identify which shall be single, and dual left turn lanes. Please also include right turn bay length designs as well. | This has been better explained within the report. |
| 19. | Woodrow Scoutten | | 1 | This development contains a very high truck factor and therefore shall contain a left turn design vehicle length of at least 50 feet in length. | Ten percent of the traffic was assumed to be heavy vehicles with a length of 75 feet. This is consistent with data provide by the ITE on the warehouse and industrial land uses. The ten percent heavy vehicles was assumed within all queuing calcualtions. Please see Appendix G. |



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|---|---|---|---|---|---|
| 20. | Woodrow Scoutten | | 1 | provide "improvement(s) of the transportation infrastructure (contained) in the industrial corridor between Frontier Street and I-10." The 2010 SATS Report indicates the highest crash rates within the City exist along the segment of Sunshine Boulevard at Alsdorf Road. Moreover, it is believed that SR84 will continue to attract development traffic along Sunshine Boulevard, north, to the intersection of SR84 (Frontier Street) where the UPRR is currently double tracking its rail line from Los Angeles to El Paso, Texas in response to increase rail traffic along this critical rail route. Therefore, special attention is called to intersections #1 and #2 (SR84-Frontier Street and Alsdorf Road on Sunshine Boulevard) to provide more analysis and recommendations to account for the interface between crossing and vehicle traffic stopped at Sunshine Boulevard and SR84 due to its close proximity to the UPRR crossing and Frontier Street. | This is a master traffic impact study. According to the pre-TIA scoping meeting with Mr. John Mitchell, the study was only required for zoning. Additional study will be required once land uses and users of the property are known and site plans have been established. It will be important to evaluate the scenario as described once those variables are known. |
| 21. | Woodrow Scoutten | | 1 | Please clarify the basis for the 35 mph speed limit along Sunshine Boulevard? Is this the same speed continuous from SR84 to I-10? The 2010 SATS accounts for this road segment to be at least 45 mph. | Sunshine Boulevard is currently posted at 35 mph. |



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| 22. | Woodrow Scoutten | | 1 | Due to the RSR designation and volumes expected to be from 30,000-50,000 ADT on this facility, full turning movement access at intersection-A (located about 560 feet south of Date Street) shall not be allowed. The possibility of future signalization at this location places signals too close together at Date Street and Location-A to be effective from an access management, operations and capacity standpoints. Right in-right out access (1/2 access control) shall be the only allowable access treatment at this location. Subject to final City approval, 3/4 access (right in-right out and left in) at this location may be allowed, but shall not be guaranteed. | Text has been added to the TIA stating that the access location should be re-evaluated during the site plan approval process and is subject to City approval. |
| 23. | Woodrow Scoutten | | 1 | As a general comment, access control shall be maintained at 660' first median breaks from arterial intersections with right-in-right-out (1/2 access control) at driveways no closer than 330' from arterial intersections are the policies. On a case by case basis the City may allow right-in-right-out and left-in access (i.e., 3/4 access control) to developer parcels. | Text has been added to the TIA stating that the access location should be re-evaluated during the site plan approval process and is subject to City approval. |
| 24. | Woodrow Scoutten | | 1 | The City reserves the right to require that the developers maintain inter-parcel connectivity between commercial developments and further require joint/assembled driveway access points in the interest of preserving safety balanced with through capacity on adjacent roadways. | A statement has been added to the recommendations and conclusions stating that inter parcel connectivity should be provided for all sites within the Sunshine Industrial. |

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| 25. | Woodrow Scoutten | | 1 | In addition to the afore comments, please address miscellaneous redlined comments within the returned report. Please also return the previous review comment report upon resubmittal of updated/revised report. Please also include review comment responses within the new report in the front of revised report before the Table of Contents. | Redline comments found within the report have also been corrected. |



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# APPENDIX B

# EXISTING TRAFFIC COUNTS

CivTech

**Sunshine Industrial Park**

# TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | - | 12 | 15 | - | 15 | 16 | - | - | 9 | - | 13 | - | - | - | - | - | 80 |
| 7:15 AM | 7:30 AM | - | 10 | 13 | - | 13 | 7 | - | - | 13 | 2 | 10 | - | - | - | - | - | 68 |
| 7:30 AM | 7:45 AM | - | 7 | 11 | - | 10 | 10 | - | - | 9 | - | 12 | - | - | - | - | - | 59 |
| 7:45 AM | 8:00 AM | - | 16 | 11 | - | 6 | 15 | - | - | 16 | - | 13 | - | - | - | - | - | 77 |
| 8:00 AM | 8:15 AM | - | 12 | 8 | - | 4 | 6 | - | - | 4 | 1 | 10 | - | - | - | - | - | 45 |
| 8:15 AM | 8:30 AM | - | 14 | 13 | - | 14 | 21 | - | - | 14 | 1 | 12 | - | - | - | - | - | 89 |
| 8:30 AM | 8:45 AM | - | 23 | 17 | - | 3 | 12 | - | - | 9 | - | 14 | - | - | - | - | - | 78 |
| 8:45 AM | 9:00 AM | - | 14 | 11 | - | 6 | 16 | - | - | 5 | 1 | 8 | - | - | - | - | - | 61 |
| **7:00 AM** | **9:00 AM** | **-** | **108** | **99** | **-** | **71** | **103** | **-** | **-** | **79** | **5** | **92** | **-** | **-** | **-** | **-** | **-** | **557** |
| **7:45 AM** | **8:45 AM** | **-** | **65** | **49** | **-** | **27** | **54** | **-** | **-** | **43** | **2** | **49** | **-** | **-** | **-** | **-** | **-** | **289** |

**Peak Hour Factor (PHF)** **0.8118**

**PM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | - | 15 | 10 | - | 5 | 16 | - | - | 16 | - | 9 | - | - | - | - | - | 71 |
| 4:15 PM | 4:30 PM | - | 12 | 6 | - | 8 | 18 | - | - | 6 | - | 15 | - | - | - | - | - | 65 |
| 4:30 PM | 4:45 PM | - | 17 | 10 | - | 7 | 11 | - | - | 10 | - | 7 | - | - | - | - | - | 62 |
| 4:45 PM | 5:00 PM | - | 11 | 7 | - | 8 | 12 | - | - | 8 | 1 | 11 | - | - | - | - | - | 58 |
| 5:00 PM | 5:15 PM | - | 8 | 9 | - | 11 | 13 | - | - | 4 | - | 8 | - | - | - | - | - | 53 |
| 5:15 PM | 5:30 PM | - | 11 | 11 | - | 7 | 12 | - | - | 6 | - | 12 | - | - | - | - | - | 59 |
| 5:30 PM | 5:45 PM | - | 15 | 10 | - | 7 | 9 | - | - | 8 | - | 10 | - | - | - | - | - | 59 |
| 5:45 PM | 6:00 PM | - | 13 | 7 | - | 6 | 12 | - | - | 9 | - | 6 | - | - | - | - | - | 53 |
| **4:00 PM** | **6:00 PM** | **-** | **102** | **70** | **-** | **59** | **103** | **-** | **-** | **67** | **1** | **78** | **-** | **-** | **-** | **-** | **-** | **480** |
| **4:00 PM** | **5:00 PM** | **-** | **55** | **33** | **-** | **28** | **57** | **-** | **-** | **40** | **1** | **42** | **-** | **-** | **-** | **-** | **-** | **256** |

**Peak Hour Factor (PHF)** **0.9014**



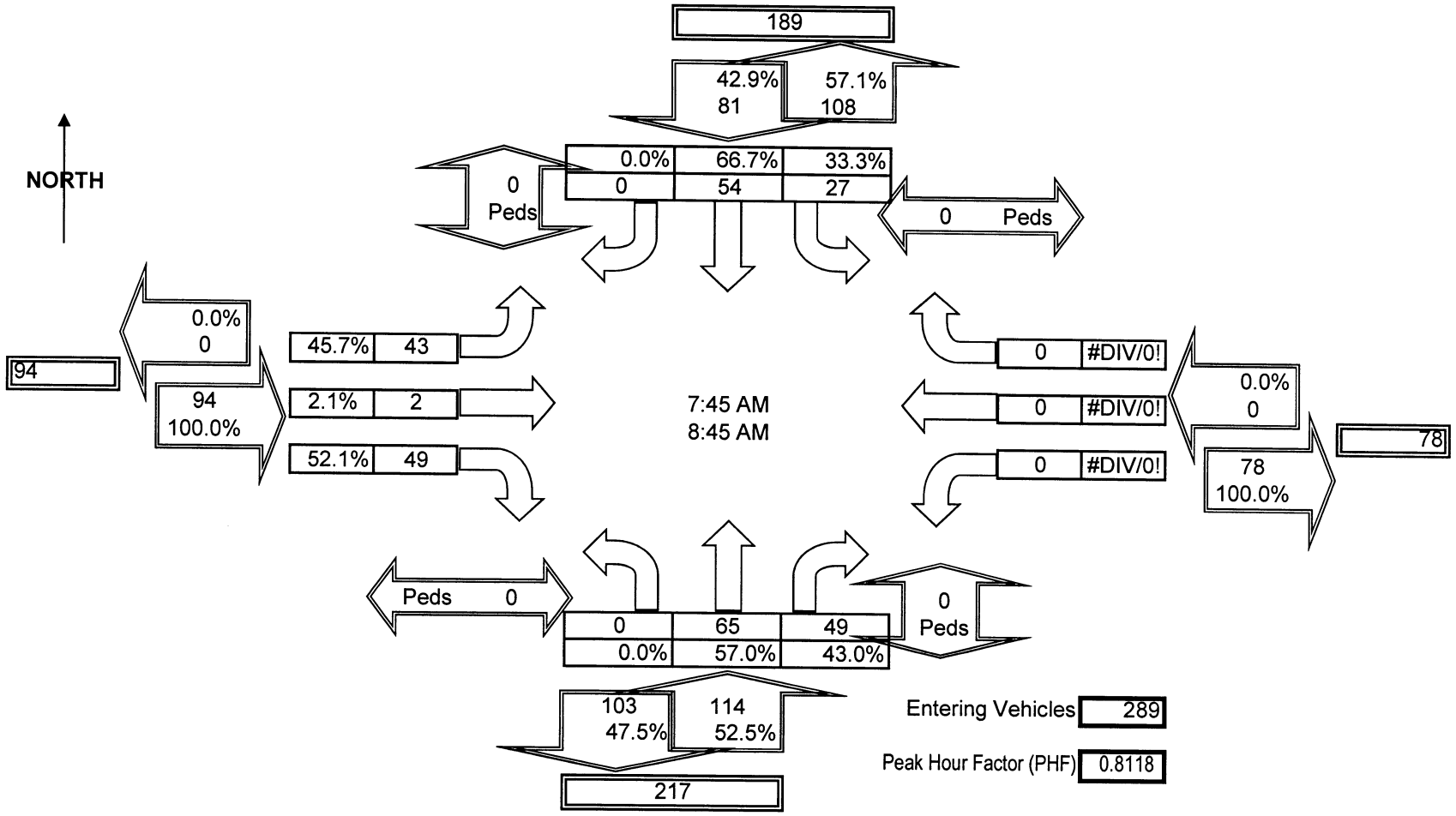


**Sunshine Boulevard and Interstate 10 (Eastbound Ramps)**

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**

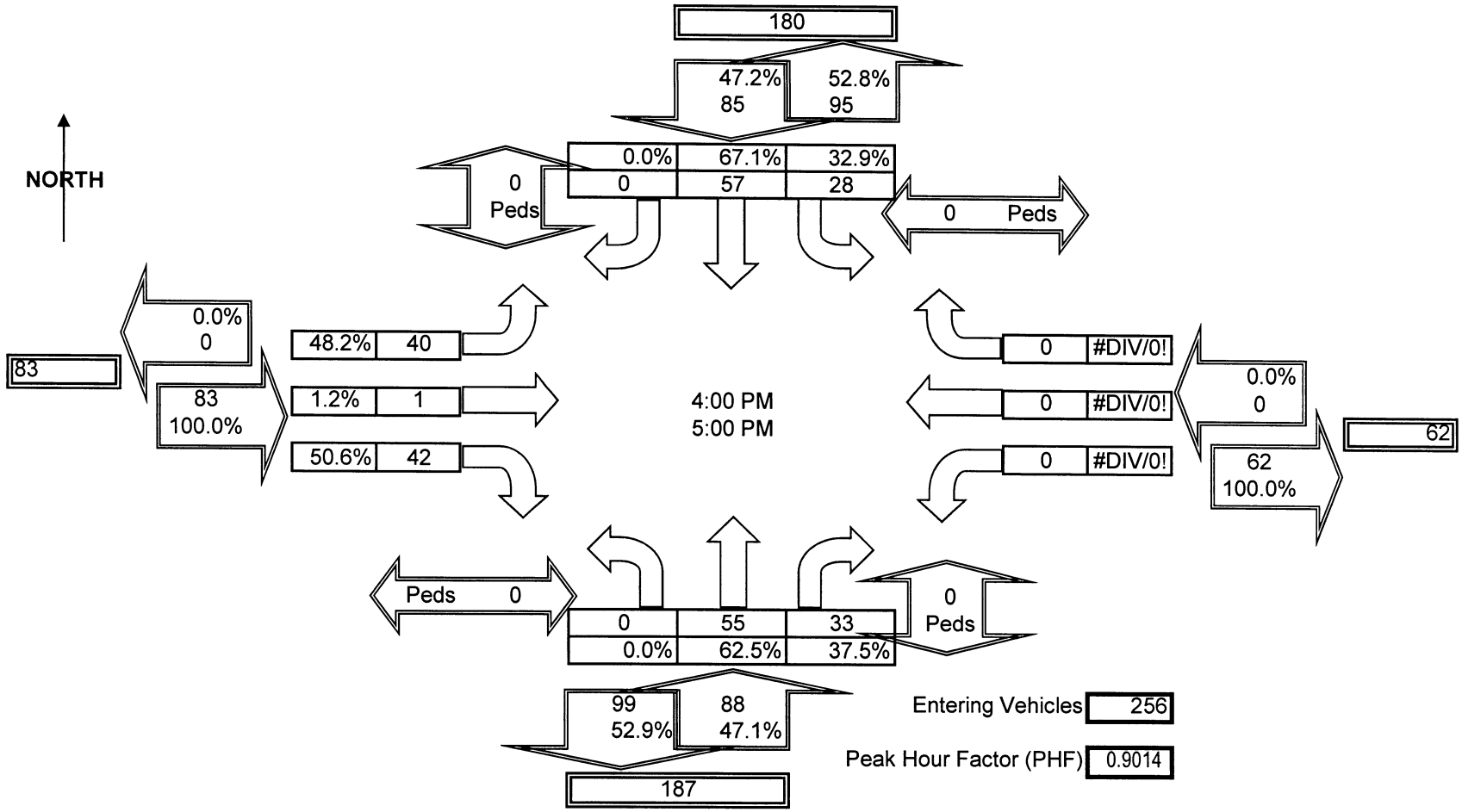



**Sunshine Boulevard and Interstate 10 (Eastbound Ramps)**

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and Interstate 10 (Eastbound Ramps)**

## Sunshine Industrial Park

## TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | 3 | 16 | - | - | 1 | 21 | 2 | - | - | - | - | - | 4 | - | 6 | - | 53 |
| 7:15 AM | 7:30 AM | 2 | 18 | - | - | 2 | 17 | 14 | - | - | - | - | - | 4 | - | 12 | - | 69 |
| 7:30 AM | 7:45 AM | 6 | 12 | - | - | 3 | 13 | 10 | - | - | - | - | - | 4 | - | 17 | - | 65 |
| 7:45 AM | 8:00 AM | 7 | 26 | - | - | 1 | 16 | 16 | - | - | - | - | - | 4 | 2 | 10 | - | 82 |
| 8:00 AM | 8:15 AM | 8 | 9 | - | - | - | 7 | 15 | - | - | - | - | - | 6 | - | 15 | - | 60 |
| 8:15 AM | 8:30 AM | 4 | 23 | - | - | - | 17 | 12 | - | - | - | - | - | 15 | - | 15 | - | 86 |
| 8:30 AM | 8:45 AM | 12 | 25 | - | - | - | 14 | 20 | - | - | - | - | - | 2 | - | 16 | - | 89 |
| 8:45 AM | 9:00 AM | 9 | 10 | - | - | - | 16 | 14 | - | - | - | - | - | 5 | - | 12 | - | 66 |
| **7:00 AM** | **9:00 AM** | **51** | **139** | **-** | **-** | **7** | **121** | **103** | **-** | **-** | **-** | **-** | **-** | **44** | **2** | **103** | **-** | **570** |
| **7:45 AM** | **8:45 AM** | **31** | **83** | **-** | **-** | **1** | **54** | **63** | **-** | **-** | **-** | **-** | **-** | **27** | **2** | **56** | **-** | **317** |

**Peak Hour Factor (PHF)** **0.8904**

**PM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | 7 | 25 | - | - | - | 9 | 12 | - | - | - | - | - | 8 | - | 21 | - | 82 |
| 4:15 PM | 4:30 PM | 3 | 12 | - | - | - | 14 | 15 | - | - | - | - | - | 6 | - | 22 | - | 72 |
| 4:30 PM | 4:45 PM | 13 | 12 | - | - | - | 15 | 31 | - | - | - | - | - | 9 | - | 25 | - | 105 |
| 4:45 PM | 5:00 PM | 8 | 7 | - | - | - | 14 | 16 | - | - | - | - | - | 3 | - | 19 | - | 67 |
| 5:00 PM | 5:15 PM | 4 | 10 | - | - | - | 10 | 15 | - | - | - | - | - | 8 | - | 21 | - | 68 |
| 5:15 PM | 5:30 PM | 6 | 11 | - | - | - | 10 | 19 | - | - | - | - | - | 8 | - | 13 | - | 67 |
| 5:30 PM | 5:45 PM | 9 | 15 | - | - | - | 9 | 10 | - | - | - | - | - | 3 | 1 | 22 | - | 69 |
| 5:45 PM | 6:00 PM | 9 | 13 | - | - | - | 13 | 9 | - | - | - | - | - | 10 | - | 7 | - | 61 |
| **4:00 PM** | **6:00 PM** | **59** | **105** | **-** | **-** | **-** | **94** | **127** | **-** | **-** | **-** | **-** | **-** | **55** | **1** | **150** | **-** | **591** |
| **4:00 PM** | **5:00 PM** | **31** | **56** | **-** | **-** | **-** | **52** | **74** | **-** | **-** | **-** | **-** | **-** | **26** | **-** | **87** | **-** | **326** |

**Peak Hour Factor (PHF)** **0.7762**



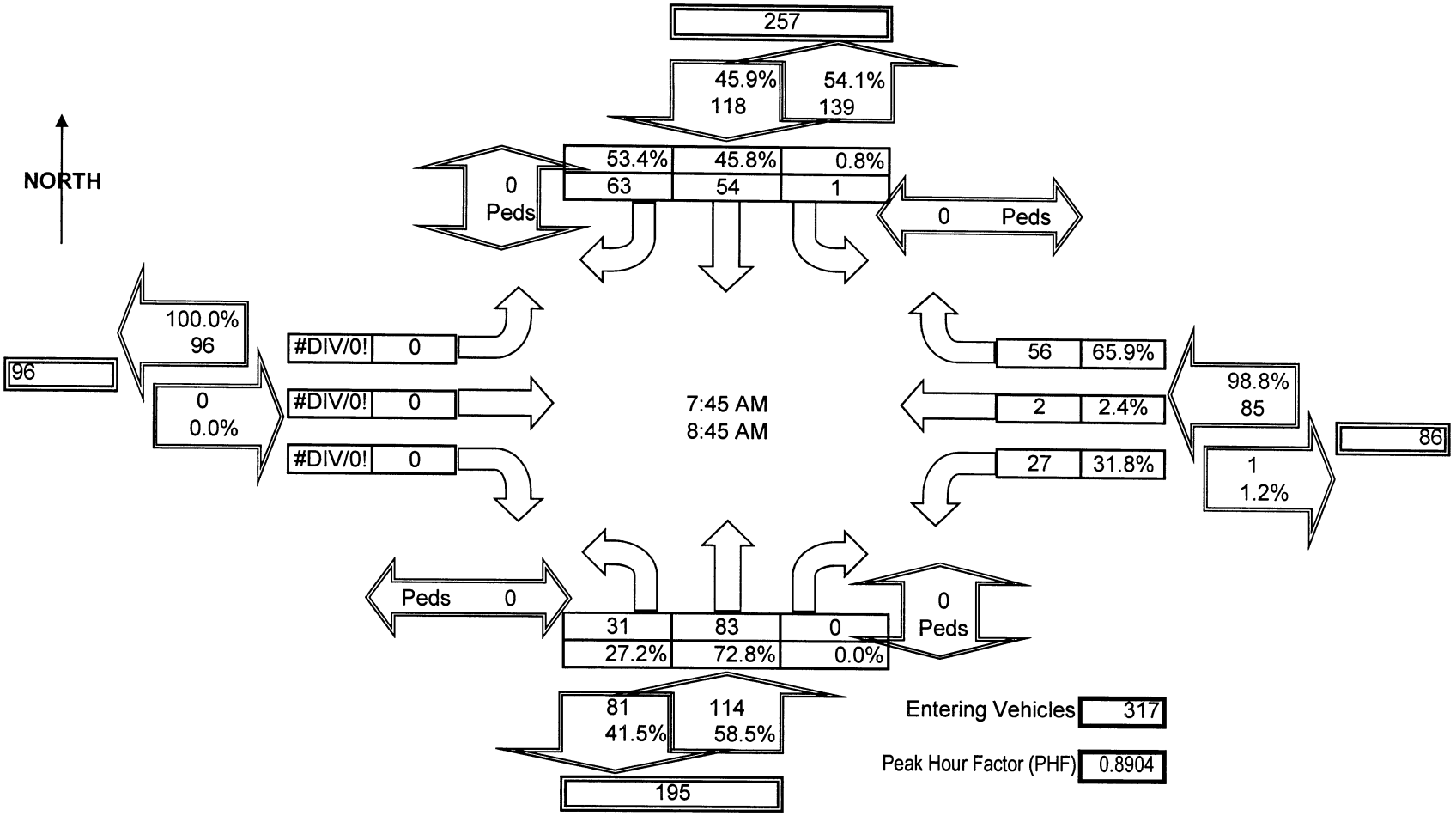


## Sunshine Boulevard and Interstate 10 (Westbound Ramps)

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and Interstate 10 (Westbound Ramps)**



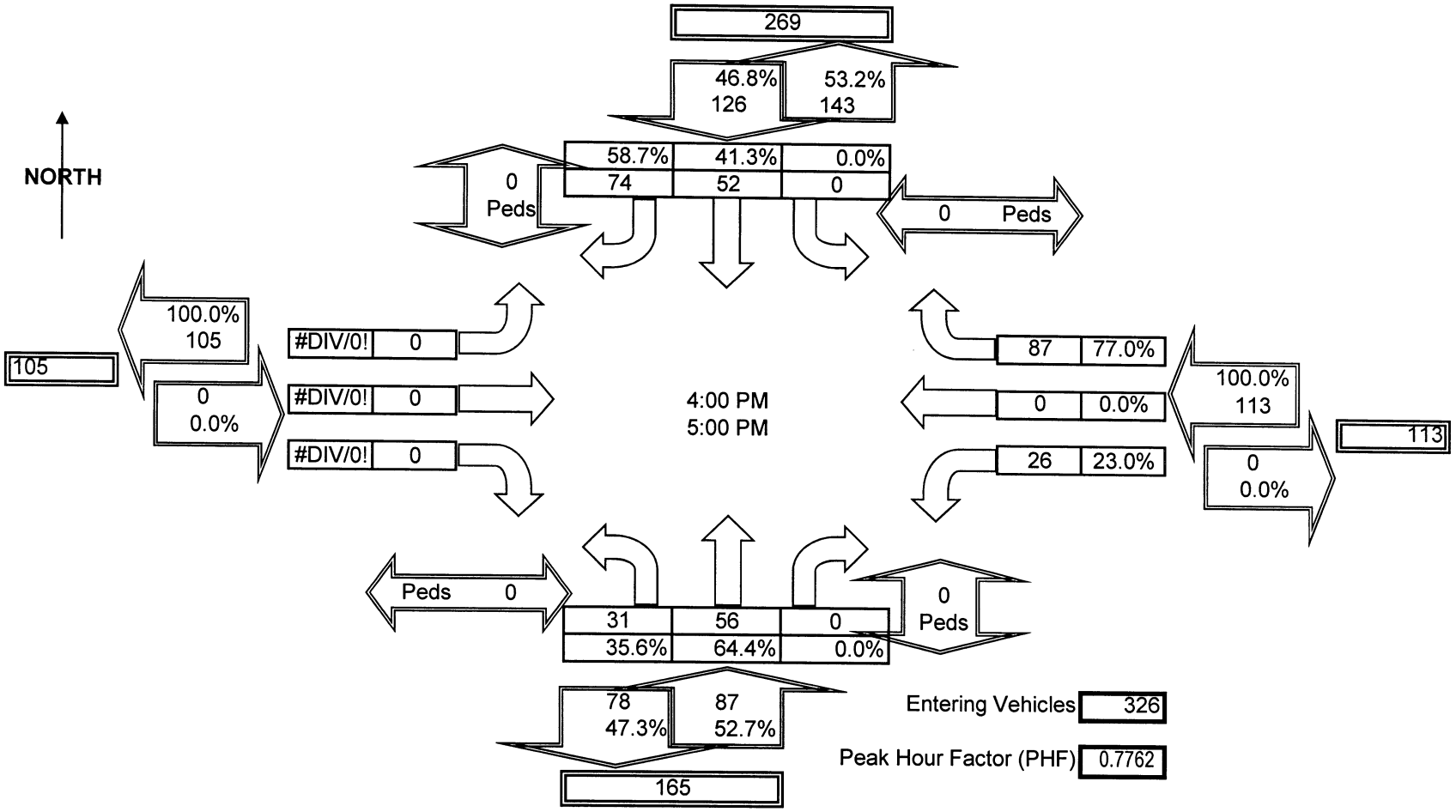
CivTech

Appendix B

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and Interstate 10 (Westbound Ramps)**



CivTech

Appendix B

## Sunshine Industrial Park

## TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

** 4:15-4:30 PM - Man stopped to ask about counting - spoke 2-3 minutes w/counter bc he owns several of the lots

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | - | 15 | - | - | - | 16 | - | - | 1 | - | - | - | - | - | - | - | 32 |
| 7:15 AM | 7:30 AM | - | 20 | - | - | - | 20 | 1 | - | - | - | - | - | - | - | - | - | 41 |
| 7:30 AM | 7:45 AM | - | 22 | 1 | - | - | 20 | - | - | 1 | - | - | - | - | - | - | - | 44 |
| 7:45 AM | 8:00 AM | - | 25 | 1 | - | - | 28 | 2 | - | - | - | 1 | - | - | - | 1 | - | 58 |
| 8:00 AM | 8:15 AM | - | 15 | 1 | - | - | 18 | 1 | - | - | - | - | - | - | - | - | - | 35 |
| 8:15 AM | 8:30 AM | - | 20 | - | - | - | 15 | 1 | - | 3 | - | - | - | - | - | 1 | - | 40 |
| 8:30 AM | 8:45 AM | - | 26 | - | - | - | 22 | - | - | 1 | - | - | - | - | - | 1 | - | 50 |
| 8:45 AM | 9:00 AM | - | 13 | - | - | - | 28 | - | - | - | - | - | - | - | - | 1 | - | 42 |
| **7:00 AM** | **9:00 AM** | **-** | **156** | **3** | **-** | **-** | **167** | **5** | **-** | **6** | **-** | **1** | **-** | **-** | **-** | **4** | **-** | **342** |
| **7:45 AM** | **8:45 AM** | **-** | **86** | **2** | **-** | **-** | **83** | **4** | **-** | **4** | **-** | **1** | **-** | **-** | **-** | **3** | **-** | **183** |

**Peak Hour Factor (PHF)** **0.7888**

**PM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | - | 26 | - | - | - | 24 | 2 | - | - | - | - | - | - | - | 1 | - | 53 |
| 4:15 PM | 4:30 PM | - | 14 | 1 | - | - | 20 | 1 | - | - | - | 1 | - | 1 | - | - | - | 38 |
| 4:30 PM | 4:45 PM | - | 20 | - | - | - | 27 | - | - | 2 | - | - | - | - | - | - | - | 49 |
| 4:45 PM | 5:00 PM | - | 16 | - | - | - | 26 | 1 | - | - | - | - | - | - | - | - | - | 43 |
| 5:00 PM | 5:15 PM | - | 15 | - | - | - | 24 | - | - | - | - | - | - | - | - | - | - | 39 |
| 5:15 PM | 5:30 PM | - | 20 | - | - | - | 20 | 1 | - | - | - | - | - | - | - | - | - | 41 |
| 5:30 PM | 5:45 PM | 1 | 18 | 1 | - | - | 31 | - | - | - | - | - | - | - | - | 1 | - | 52 |
| 5:45 PM | 6:00 PM | - | 19 | - | - | - | 19 | - | - | - | - | - | - | - | - | 1 | - | 39 |
| **4:00 PM** | **6:00 PM** | **1** | **148** | **2** | **-** | **-** | **191** | **5** | **-** | **2** | **-** | **1** | **-** | **1** | **-** | **3** | **-** | **354** |
| **4:00 PM** | **5:00 PM** | **-** | **76** | **1** | **-** | **-** | **97** | **4** | **-** | **2** | **-** | **1** | **-** | **1** | **-** | **1** | **-** | **183** |

**Peak Hour Factor (PHF)** **0.8632**



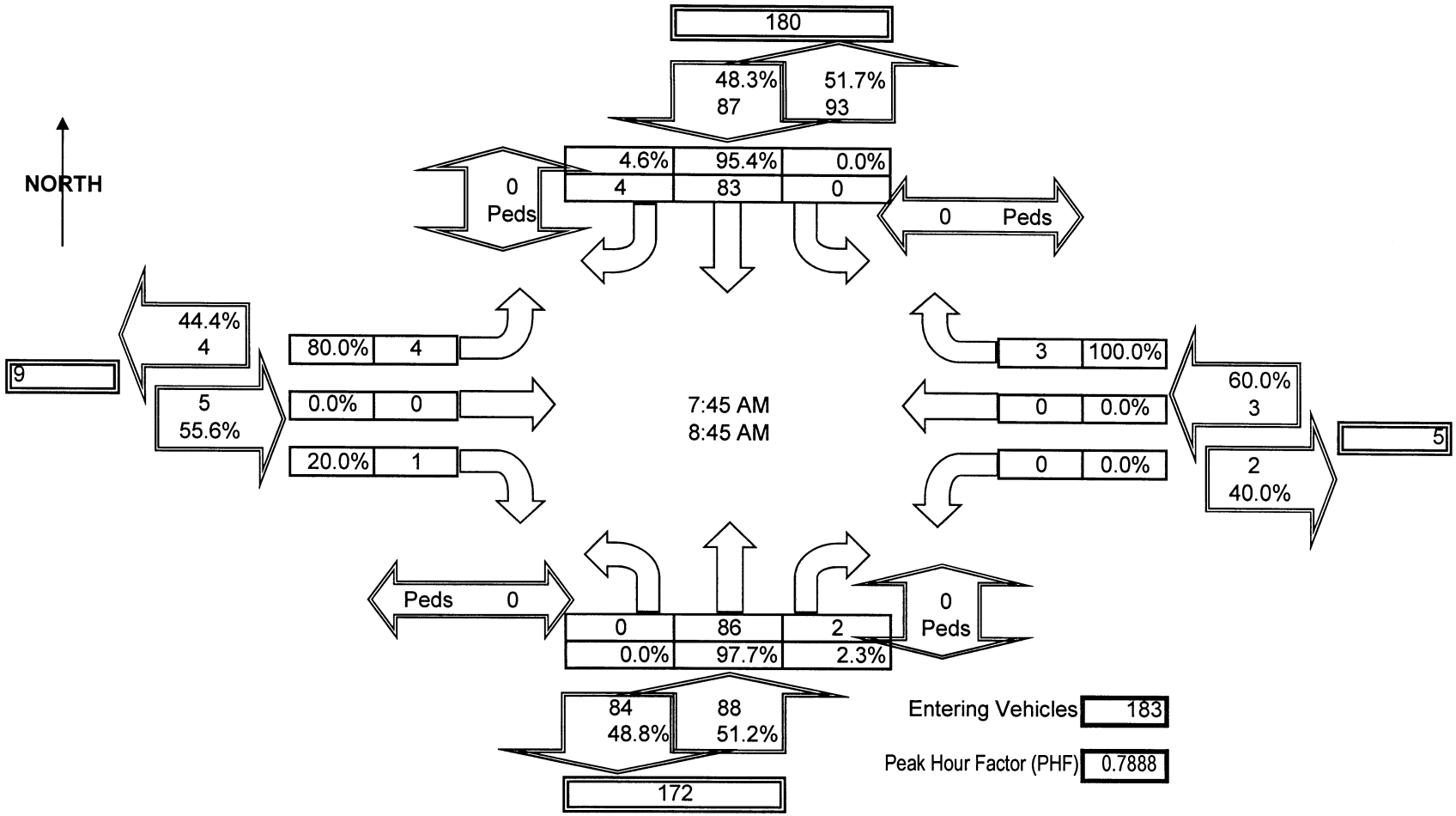


## Sunshine Boulevard and Date Street

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**

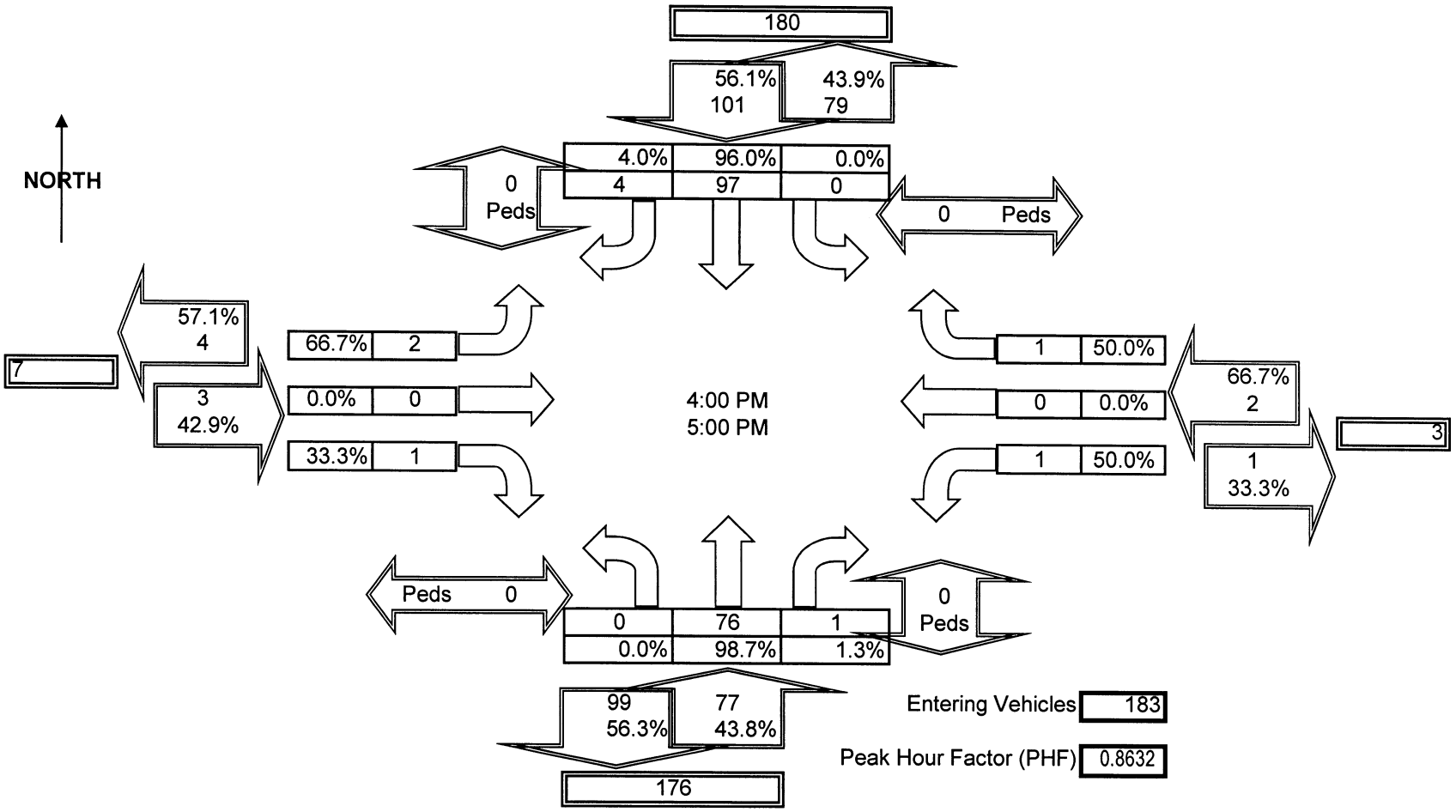



**Sunshine Boulevard and Date Street**

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and Date Street**



CivTech

Appendix B

## Sunshine Industrial Park

## TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | 4 | 10 | - | - | - | 12 | - | - | 2 | - | 7 | - | - | - | - | - | 35 |
| 7:15 AM | 7:30 AM | 3 | 17 | - | - | - | 19 | 2 | - | 2 | - | 4 | - | - | - | - | - | 47 |
| 7:30 AM | 7:45 AM | 2 | 22 | - | - | - | 18 | 2 | - | 1 | - | 5 | - | - | - | - | - | 50 |
| 7:45 AM | 8:00 AM | 3 | 22 | - | - | - | 33 | 4 | - | - | - | 7 | - | - | - | - | - | 69 |
| 8:00 AM | 8:15 AM | 2 | 17 | - | - | - | 19 | 4 | - | 4 | - | 3 | - | - | - | - | - | 49 |
| 8:15 AM | 8:30 AM | - | 29 | - | - | - | 20 | 3 | - | 1 | - | 2 | - | - | - | - | - | 55 |
| 8:30 AM | 8:45 AM | 6 | 26 | - | - | - | 23 | 6 | - | 3 | - | 1 | - | - | - | - | - | 65 |
| 8:45 AM | 9:00 AM | - | 23 | - | - | - | 28 | 4 | - | 1 | - | 4 | - | - | - | - | - | 60 |
| **7:00 AM** | **9:00 AM** | **20** | **166** | **-** | **-** | **-** | **172** | **25** | **-** | **14** | **-** | **33** | **-** | **-** | **-** | **-** | **-** | **430** |
| **7:45 AM** | **8:45 AM** | **11** | **94** | **-** | **-** | **-** | **95** | **17** | **-** | **8** | **-** | **13** | **-** | **-** | **-** | **-** | **-** | **238** |

**Peak Hour Factor (PHF)** **0.8623**

**PM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | 5 | 33 | - | - | - | 23 | 7 | - | 7 | - | 6 | - | - | - | - | - | 81 |
| 4:15 PM | 4:30 PM | 3 | 25 | - | - | - | 18 | 8 | - | 6 | - | 3 | - | - | - | - | - | 63 |
| 4:30 PM | 4:45 PM | 1 | 27 | - | - | - | 22 | 6 | - | 5 | - | 4 | - | - | - | - | - | 65 |
| 4:45 PM | 5:00 PM | 7 | 23 | - | - | - | 30 | 6 | - | 7 | - | 8 | - | - | - | - | - | 81 |
| 5:00 PM | 5:15 PM | 5 | 27 | - | - | - | 27 | 2 | - | 8 | - | 3 | - | - | - | - | - | 72 |
| 5:15 PM | 5:30 PM | 3 | 22 | - | - | - | 24 | 10 | - | 7 | - | 4 | - | - | - | - | - | 70 |
| 5:30 PM | 5:45 PM | 2 | 19 | - | - | - | 31 | 5 | - | 5 | - | 3 | - | - | - | - | - | 65 |
| 5:45 PM | 6:00 PM | 3 | 27 | - | - | - | 21 | 7 | - | 5 | - | 3 | - | - | - | - | - | 66 |
| **4:00 PM** | **6:00 PM** | **29** | **203** | **-** | **-** | **-** | **196** | **51** | **-** | **50** | **-** | **34** | **-** | **-** | **-** | **-** | **-** | **563** |
| **4:00 PM** | **5:00 PM** | **16** | **108** | **-** | **-** | **-** | **93** | **27** | **-** | **25** | **-** | **21** | **-** | **-** | **-** | **-** | **-** | **290** |

**Peak Hour Factor (PHF)** **0.8951**



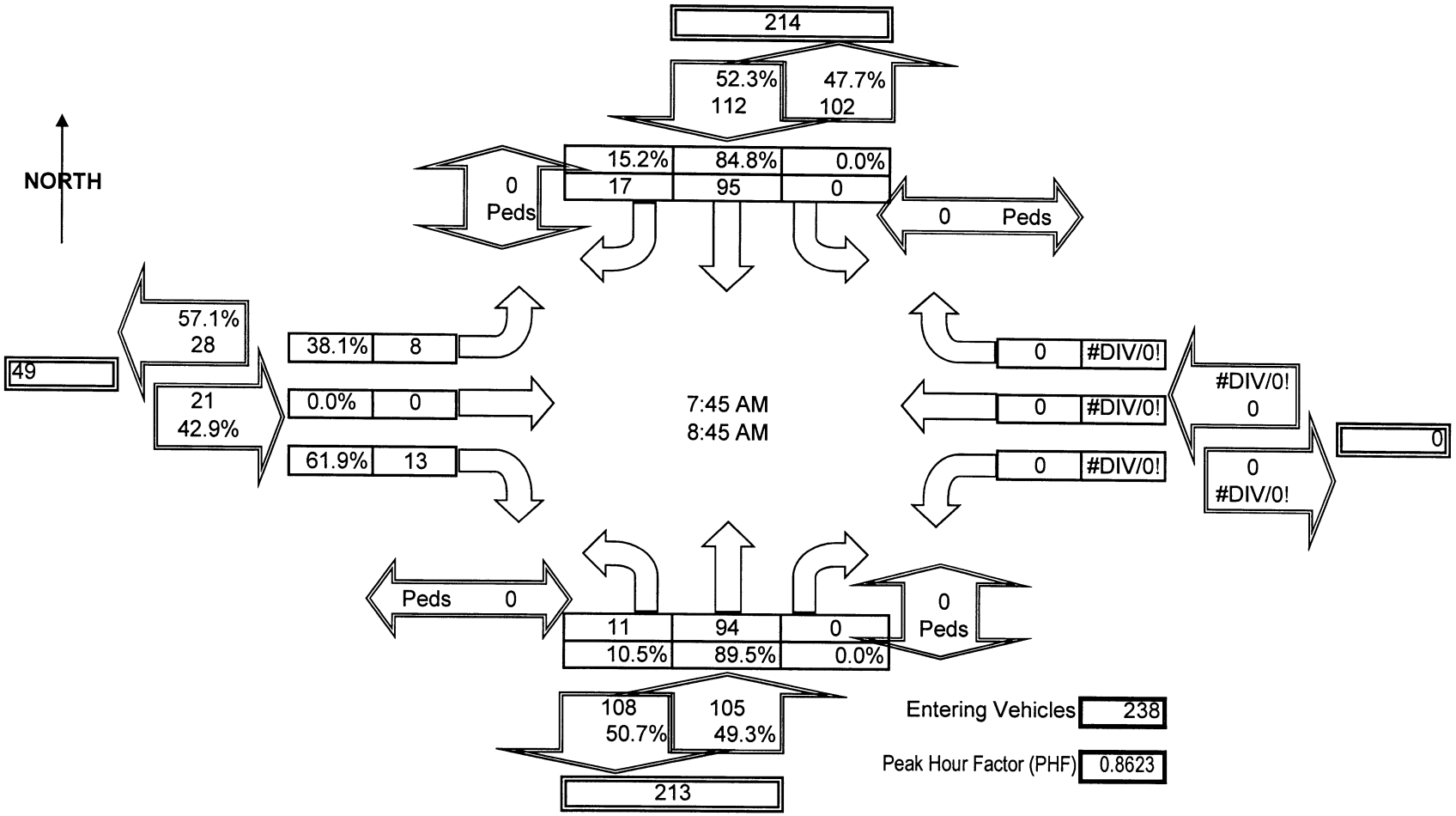


**Sunshine Boulevard and Alsdorf Road**

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and Alsdorf Road**



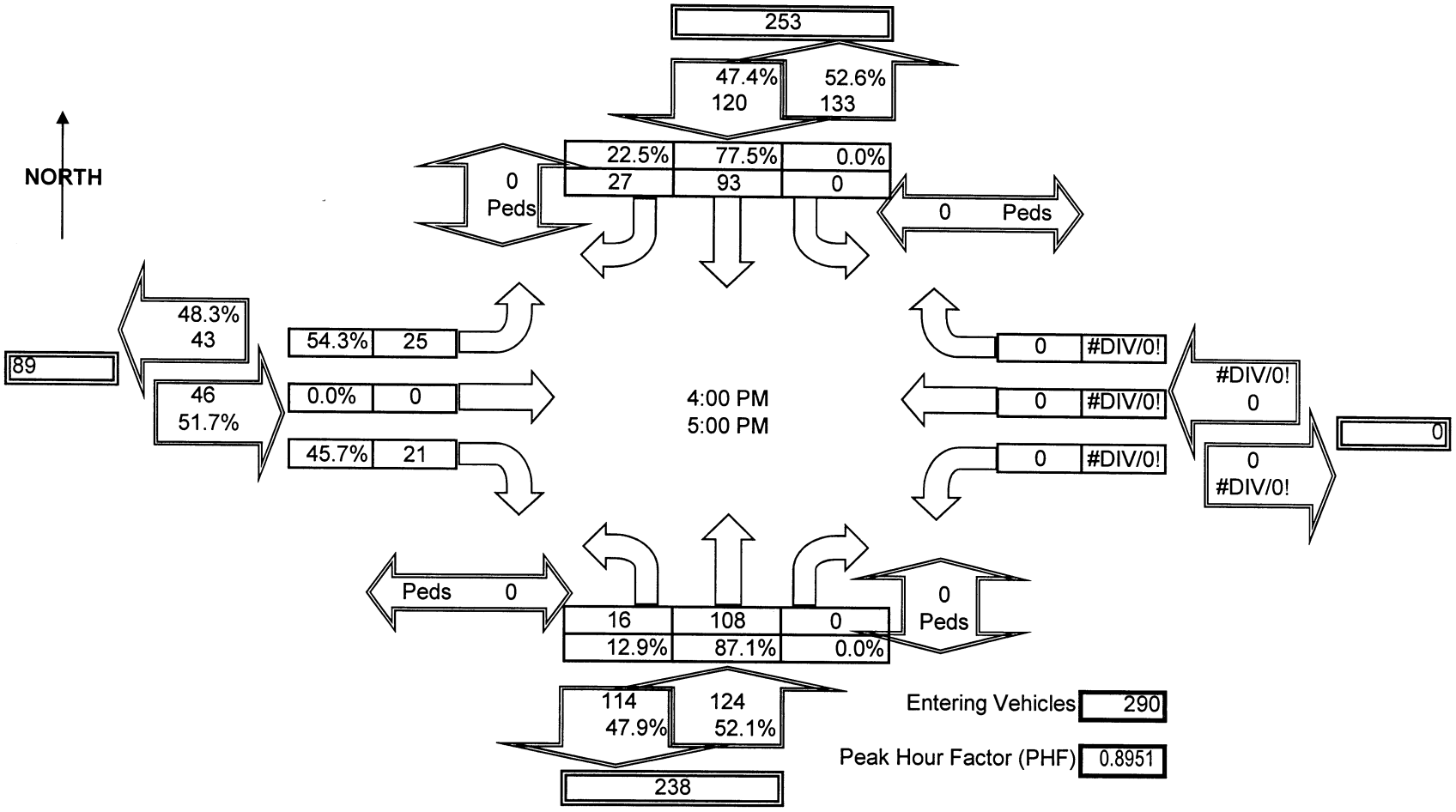
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Appendix B

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and Alsdorf Road**



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Appendix B

## Sunshine Industrial Park

## TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

** Trains through this intersection can account for the variance in traffic

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | 9 | 3 | 5 | - | 1 | 3 | 5 | - | 2 | 16 | 8 | - | 3 | 9 | - | - | 64 |
| 7:15 AM | 7:30 AM | 7 | 3 | 8 | - | - | 2 | 5 | - | 3 | 10 | 10 | - | 10 | 5 | - | - | 63 |
| 7:30 AM | 7:45 AM | 13 | 4 | 8 | - | 3 | 3 | 6 | - | 4 | 9 | 11 | - | 7 | 15 | 2 | - | 85 |
| 7:45 AM | 8:00 AM | 10 | 3 | 8 | - | - | 11 | 6 | - | 1 | 18 | 16 | - | 7 | 14 | 1 | - | 95 |
| 8:00 AM | 8:15 AM | 10 | 4 | 8 | - | - | 4 | 4 | - | 2 | 15 | 10 | - | 11 | 15 | 1 | - | 84 |
| 8:15 AM | 8:30 AM | 20 | 5 | 5 | - | - | 3 | - | - | 1 | 15 | 13 | - | 7 | 13 | 4 | - | 86 |
| 8:30 AM | 8:45 AM | 14 | 8 | 8 | - | - | 5 | 2 | - | 3 | 15 | 12 | - | 11 | 19 | - | - | 97 |
| 8:45 AM | 9:00 AM | 14 | 3 | 6 | - | - | 6 | 4 | - | 5 | 13 | 21 | - | 6 | 24 | - | - | 102 |
| **7:00 AM** | **9:00 AM** | **97** | **33** | **56** | **-** | **4** | **37** | **32** | **-** | **21** | **111** | **101** | **-** | **62** | **114** | **8** | **-** | **676** |
| **8:00 AM** | **9:00 AM** | **58** | **20** | **27** | **-** | **-** | **18** | **10** | **-** | **11** | **58** | **56** | **-** | **35** | **71** | **5** | **-** | **369** |

**Peak Hour Factor (PHF)** **0.9044**

**PM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | 18 | 8 | 15 | - | 2 | 5 | 10 | - | 2 | 27 | 11 | - | 14 | 35 | 2 | - | 149 |
| 4:15 PM | 4:30 PM | 11 | 4 | 18 | - | 1 | 5 | 5 | - | 5 | 21 | 10 | - | 11 | 29 | 1 | - | 121 |
| 4:30 PM | 4:45 PM | 14 | 4 | 13 | - | 1 | 5 | 9 | - | 7 | 27 | 12 | - | 13 | 26 | 2 | - | 133 |
| 4:45 PM | 5:00 PM | 13 | 5 | 12 | - | 1 | 6 | 4 | - | 2 | 30 | 15 | - | 13 | 30 | 4 | - | 135 |
| 5:00 PM | 5:15 PM | 18 | 1 | 17 | - | 2 | 3 | 7 | - | 3 | 30 | 15 | - | 10 | 24 | 3 | - | 133 |
| 5:15 PM | 5:30 PM | 11 | 6 | 10 | - | 2 | 4 | 7 | - | 5 | 32 | 19 | - | 12 | 32 | 1 | - | 141 |
| 5:30 PM | 5:45 PM | 12 | 2 | 13 | - | 1 | 6 | 6 | - | 2 | 24 | 19 | - | 12 | 27 | 3 | - | 127 |
| 5:45 PM | 6:00 PM | 16 | 2 | 13 | - | 3 | 8 | 7 | - | - | 25 | 9 | - | 11 | 18 | - | - | 112 |
| **4:00 PM** | **6:00 PM** | **113** | **32** | **111** | **-** | **13** | **42** | **55** | **-** | **26** | **216** | **110** | **-** | **96** | **221** | **16** | **-** | **1,051** |
| **4:30 PM** | **5:30 PM** | **56** | **16** | **52** | **-** | **6** | **18** | **27** | **-** | **17** | **119** | **61** | **-** | **48** | **112** | **10** | **-** | **542** |

**Peak Hour Factor (PHF)** **0.9610**



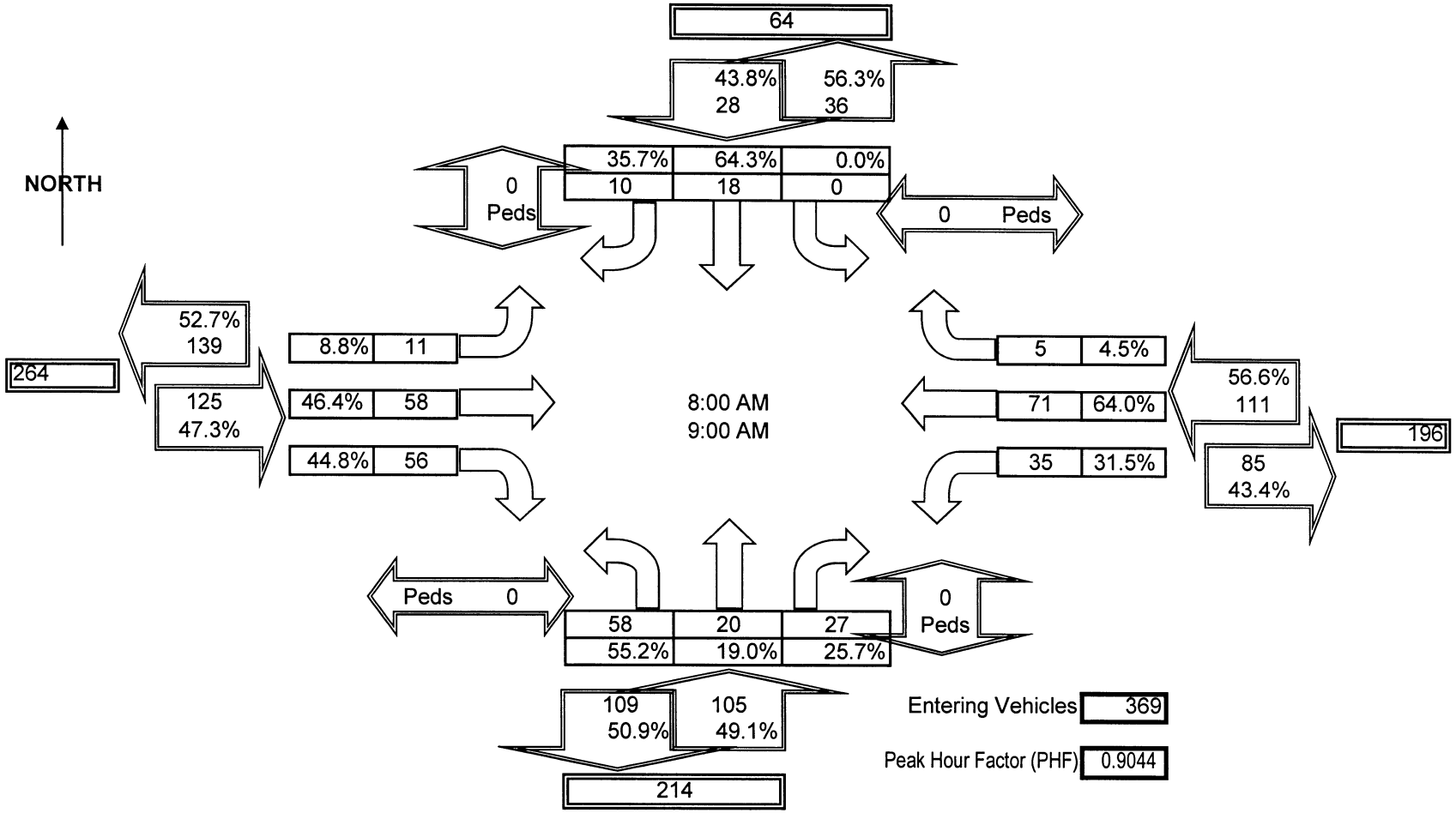


**Sunshine Boulevard and State Route 84**

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**





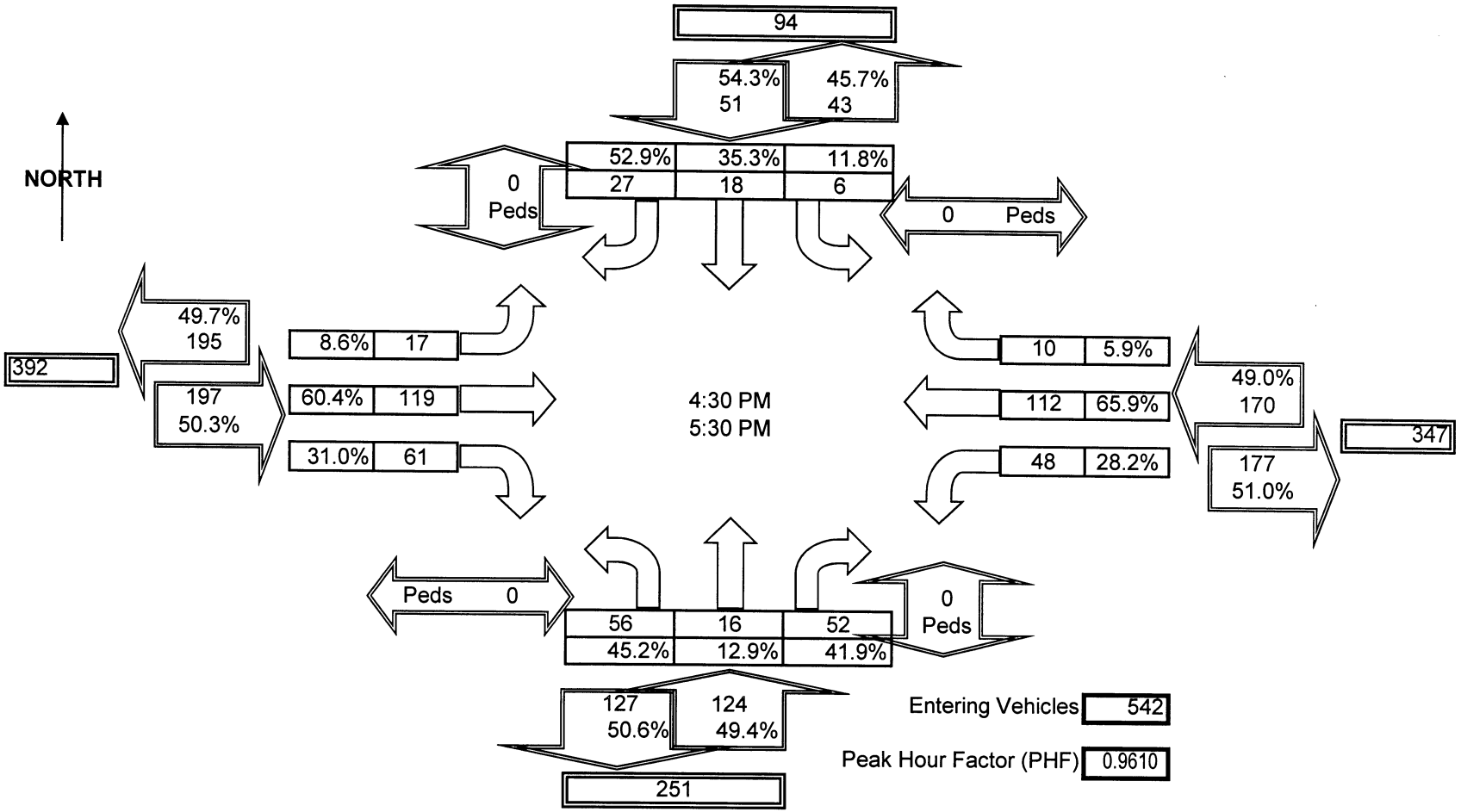



**Sunshine Boulevard and State Route 84**

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**Sunshine Boulevard and State Route 84**

## Sunshine Industrial Park

## TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | - | - | - | - | 20 | - | 1 | - | 5 | 9 | - | - | - | 6 | - | - | 41 |
| 7:15 AM | 7:30 AM | - | - | - | - | 23 | - | - | - | 1 | 3 | - | - | - | 2 | - | - | 29 |
| 7:30 AM | 7:45 AM | - | - | - | - | 15 | - | - | - | - | 4 | - | - | - | 6 | - | - | 25 |
| 7:45 AM | 8:00 AM | - | - | - | - | 10 | - | 1 | - | 4 | 1 | - | - | - | 2 | - | - | 18 |
| 8:00 AM | 8:15 AM | - | - | - | - | 23 | - | 4 | - | 2 | 4 | - | - | - | 7 | - | - | 40 |
| 8:15 AM | 8:30 AM | - | - | - | - | 15 | - | 6 | - | 3 | 1 | - | - | - | 3 | - | - | 28 |
| 8:30 AM | 8:45 AM | - | - | - | - | 17 | - | 2 | - | 2 | 4 | 1 | - | - | 6 | - | - | 32 |
| 8:45 AM | 9:00 AM | - | - | - | - | 14 | - | 4 | - | 3 | 1 | - | - | - | 5 | 2 | - | 29 |
| **7:00 AM** | **9:00 AM** | **-** | **-** | **-** | **-** | **137** | **-** | **18** | **-** | **20** | **27** | **1** | **-** | **-** | **37** | **2** | **-** | **242** |
| **8:00 AM** | **9:00 AM** | **-** | **-** | **-** | **-** | **69** | **-** | **16** | **-** | **10** | **10** | **1** | **-** | **-** | **21** | **2** | **-** | **129** |

**Peak Hour Factor (PHF) 0.8063**

**PM Peak Hour**

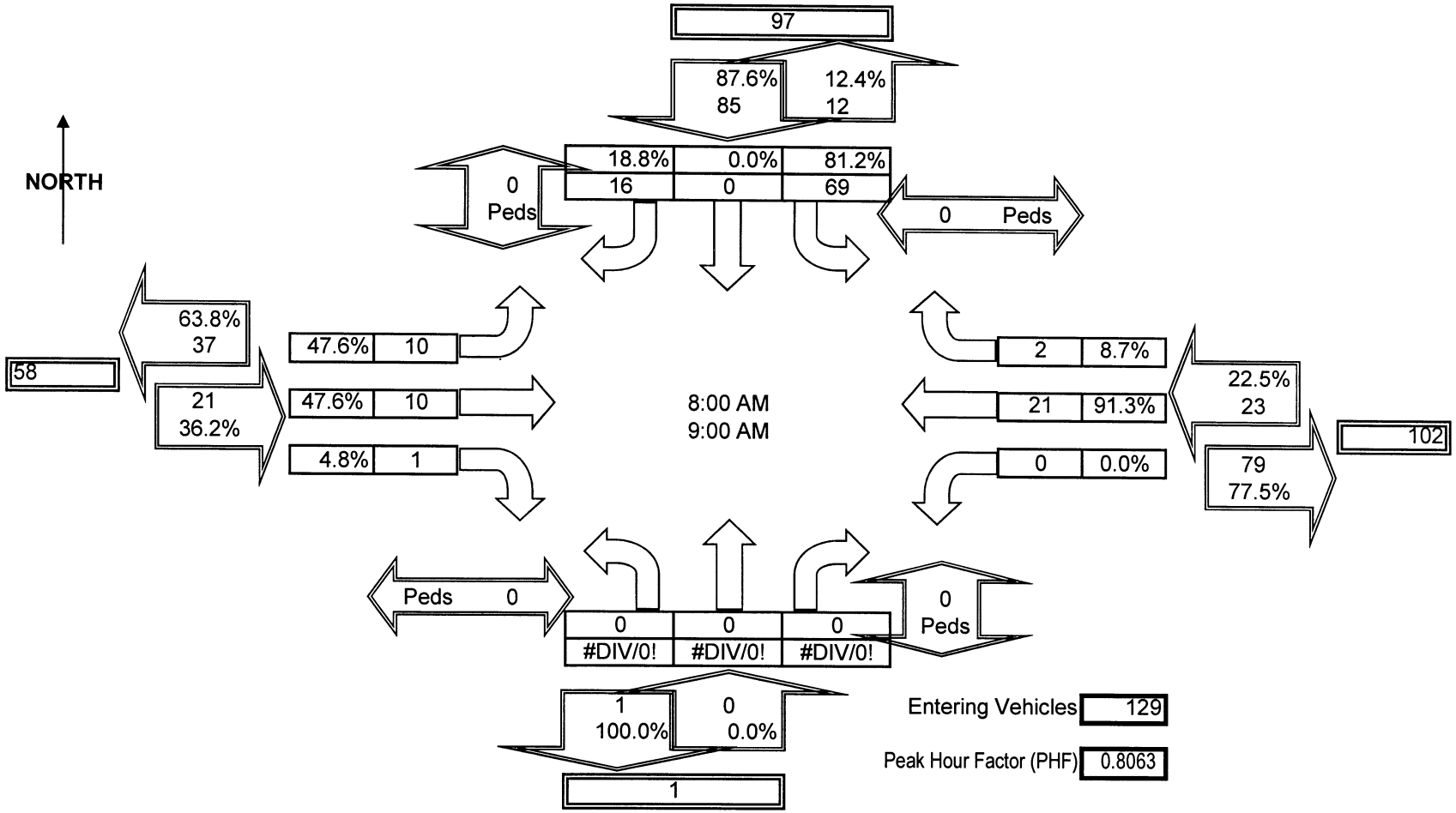
| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | - | - | - | - | 24 | - | 3 | - | 2 | 6 | - | - | - | 8 | 1 | - | 44 |
| 4:15 PM | 4:30 PM | - | - | - | - | 26 | - | 6 | - | 2 | 4 | - | - | - | 1 | - | - | 39 |
| 4:30 PM | 4:45 PM | - | - | - | - | 27 | - | 16 | - | 1 | 2 | - | - | - | 1 | - | - | 47 |
| 4:45 PM | 5:00 PM | - | - | - | - | 23 | - | 9 | - | 6 | 4 | - | - | - | 6 | - | - | 48 |
| 5:00 PM | 5:15 PM | - | - | - | - | 27 | - | 2 | - | 4 | 4 | - | - | - | 3 | - | - | 40 |
| 5:15 PM | 5:30 PM | - | - | - | - | 25 | - | 1 | - | 2 | 9 | - | - | - | 6 | - | - | 43 |
| 5:30 PM | 5:45 PM | - | - | - | - | 15 | - | 4 | - | - | 6 | - | - | - | 3 | - | - | 28 |
| 5:45 PM | 6:00 PM | - | - | - | - | 17 | - | 1 | - | 4 | 4 | - | - | - | 4 | - | - | 30 |
| **4:00 PM** | **6:00 PM** | **-** | **-** | **-** | **-** | **184** | **-** | **42** | **-** | **21** | **39** | **-** | **-** | **-** | **32** | **1** | **-** | **319** |
| **4:00 PM** | **5:00 PM** | **-** | **-** | **-** | **-** | **100** | **-** | **34** | **-** | **11** | **16** | **-** | **-** | **-** | **16** | **1** | **-** | **178** |

**Peak Hour Factor (PHF) 0.9271**

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**





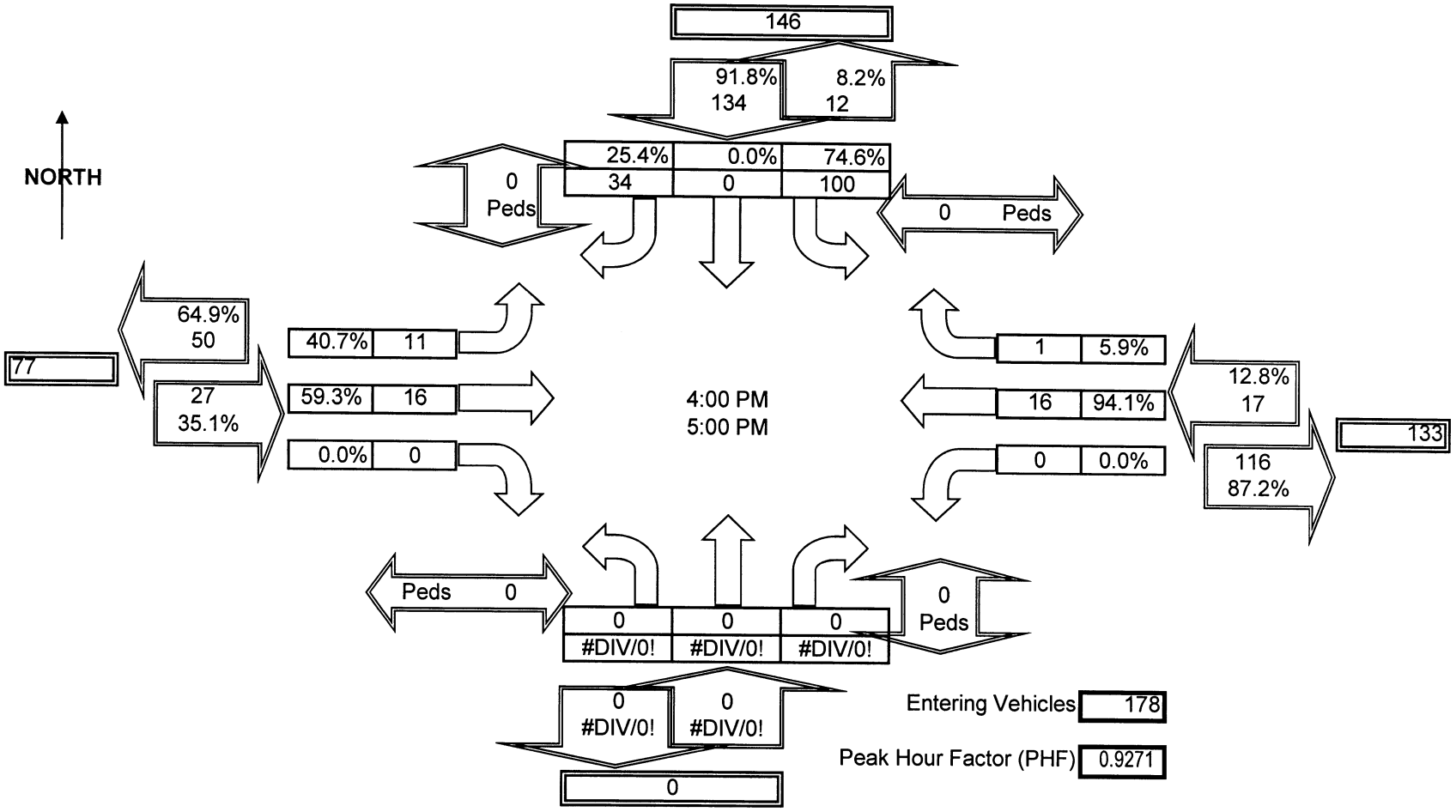



**State Route 87 and State Route 84**

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**






CivTech

Appendix B

**State Route 87 and State Route 84**

## Sunshine Industrial Park

## TRAFFIC COUNT DATA SHEET

**Counts Conducted**
**July 20, 2010**

**AM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 7:00 AM | 7:15 AM | - | 29 | 5 | - | 1 | 21 | - | - | - | - | - | - | 1 | - | - | - | 57 |
| 7:15 AM | 7:30 AM | - | 21 | 1 | - | 1 | 23 | - | - | - | - | - | - | - | - | 1 | - | 47 |
| 7:30 AM | 7:45 AM | - | 17 | 1 | - | - | 15 | - | - | - | - | - | - | - | - | 2 | - | 35 |
| 7:45 AM | 8:00 AM | - | 22 | 2 | - | 1 | 10 | - | - | - | - | - | - | 1 | - | - | - | 36 |
| 8:00 AM | 8:15 AM | - | 12 | 2 | - | - | 23 | - | - | - | - | - | - | 4 | - | 1 | - | 42 |
| 8:15 AM | 8:30 AM | - | 18 | 3 | - | - | 17 | - | - | - | - | - | - | 2 | - | 3 | - | 43 |
| 8:30 AM | 8:45 AM | - | 12 | 4 | - | - | 18 | - | - | - | - | - | - | 2 | - | 1 | - | 37 |
| 8:45 AM | 9:00 AM | - | 13 | 2 | - | 1 | 14 | - | - | - | - | - | - | 4 | - | 1 | - | 35 |
| **7:00 AM** | **9:00 AM** | **-** | **144** | **20** | **-** | **4** | **141** | **-** | **-** | **-** | **-** | **-** | **-** | **14** | **-** | **9** | **-** | **332** |
| **7:00 AM** | **8:00 AM** | **-** | **89** | **9** | **-** | **3** | **69** | **-** | **-** | **-** | **-** | **-** | **-** | **2** | **-** | **3** | **-** | **175** |

**Peak Hour Factor (PHF)** **0.7675**

**PM Peak Hour**

| Time | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start | Finish | left | through | right | peds | left | through | right | peds | left | through | right | peds | left | through | right | peds | |
| 4:00 PM | 4:15 PM | - | 21 | 3 | - | 3 | 23 | - | - | - | - | - | - | 3 | - | - | - | 53 |
| 4:15 PM | 4:30 PM | - | 27 | 1 | - | 4 | 28 | - | - | - | - | - | - | 3 | - | - | - | 63 |
| 4:30 PM | 4:45 PM | - | 19 | 1 | - | - | 30 | - | - | - | - | - | - | 16 | - | - | - | 66 |
| 4:45 PM | 5:00 PM | - | 19 | 5 | - | - | 22 | - | - | - | - | - | - | 7 | - | - | - | 53 |
| 5:00 PM | 5:15 PM | - | 16 | 4 | - | 1 | 27 | - | - | - | - | - | - | 4 | - | 1 | - | 53 |
| 5:15 PM | 5:30 PM | - | 18 | 2 | - | 1 | 20 | - | - | - | - | - | - | 4 | - | - | - | 45 |
| 5:30 PM | 5:45 PM | - | 21 | - | - | 1 | 16 | - | - | - | - | - | - | 3 | - | 2 | - | 43 |
| 5:45 PM | 6:00 PM | - | 13 | 6 | - | 1 | 16 | - | - | - | - | - | - | 1 | - | - | - | 37 |
| **4:00 PM** | **6:00 PM** | **-** | **154** | **22** | **-** | **11** | **182** | **-** | **-** | **-** | **-** | **-** | **-** | **41** | **-** | **3** | **-** | **413** |
| **4:00 PM** | **5:00 PM** | **-** | **86** | **10** | **-** | **7** | **103** | **-** | **-** | **-** | **-** | **-** | **-** | **29** | **-** | **-** | **-** | **235** |

**Peak Hour Factor (PHF)** **0.8902**

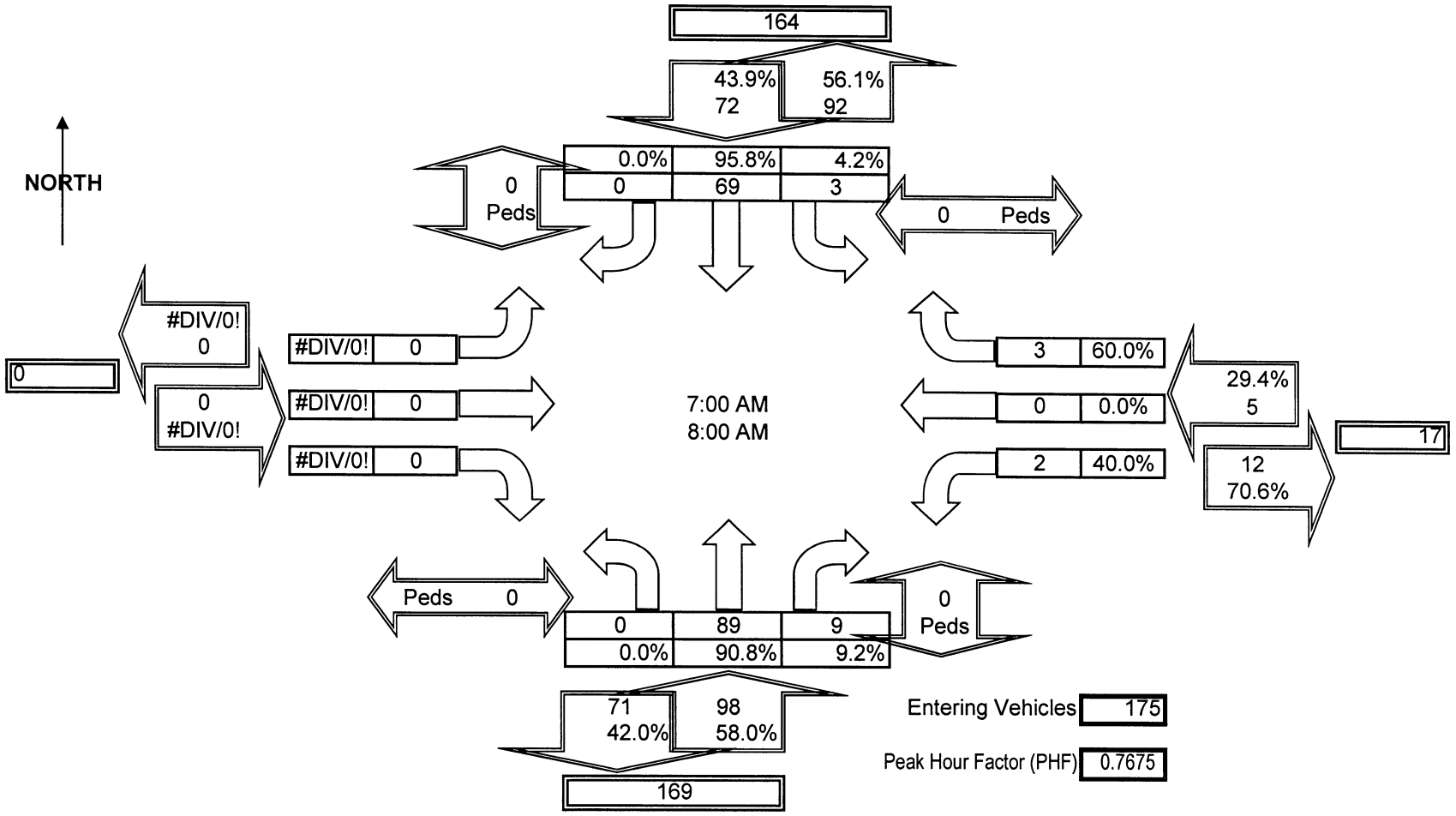


## State Route 87 and Milligan Road

**Sunshine Industrial Park**

**AM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**

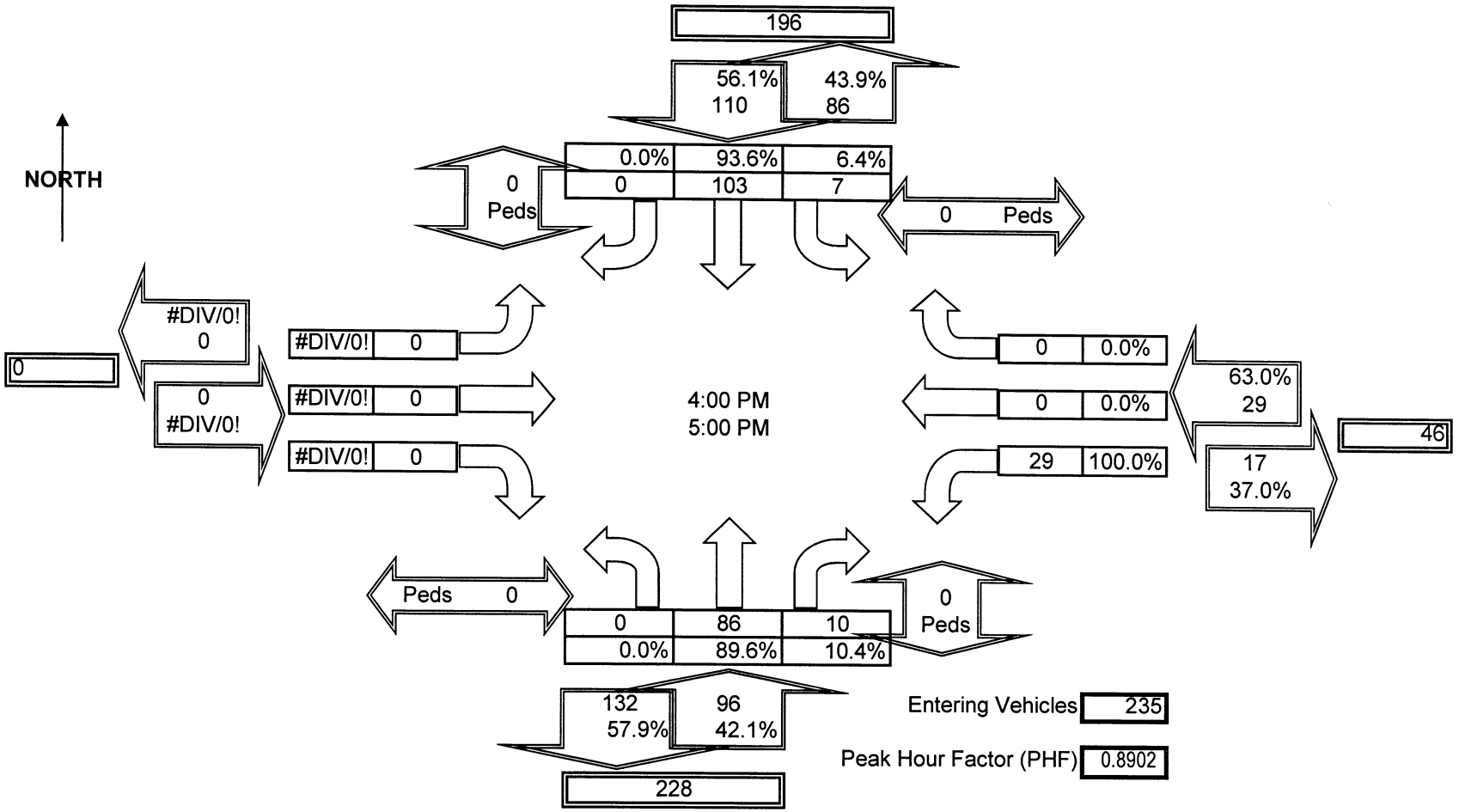



**State Route 87 and Milligan Road**

**Sunshine Industrial Park**

**PM PEAK HOUR DIAGRAM**

**Counts Conducted**
**July 20, 2010**




**State Route 87 and Milligan Road**

# APPENDIX C

# EXISTING PEAK HOUR ANALYSIS

CivTech

Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Scenario Report

| | |
|---|---|
| Scenario: | Existing AM |
| Command: | AM |
| Volume: | AM |
| Geometry: | Existing |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | AM |
| Trip Distribution: | Default Trip Distribution |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Default Configuration |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Sunshine Blvd. & SR 84 | B | 10.6 | 0.099 | B | 10.6 | 0.099 | + 0.000 D/V |
| # 2 Sunshine Blvd. & Alsdorf Rd. | A | 9.1 | 0.015 | A | 9.1 | 0.015 | + 0.000 D/V |
| # 3 Sunshine Blvd. & Date St. | A | 9.3 | 0.005 | A | 9.3 | 0.005 | + 0.000 D/V |
| # 4 Sunshine Blvd. & I-10 WB Ramps | A | 9.4 | 0.064 | A | 9.4 | 0.064 | + 0.000 D/V |
| # 5 Sunshine Blvd. & I-10 EB Ramps | A | 9.4 | 0.063 | A | 9.4 | 0.063 | + 0.000 D/V |
| # 6 SR 87 & SR 84 | A | 8.6 | 0.017 | A | 8.6 | 0.017 | + 0.000 D/V |
| # 7 SR 87 & Milligan Rd. | A | 9.1 | 0.003 | A | 9.1 | 0.003 | + 0.000 D/V |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Sunshine Blvd. & SR 84

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: B[ 10.6]

| Street Name: | Sunshine Boulevard | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 1 | 1 | 0 1 | 1 | 0 1 | 0 1 | 1 | 0 1 | 1 0 | 1 | 0 1 | 1 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 58 | 20 | 27 | 0 | 18 | 10 | 11 | 58 | 56 | 35 | 71 | 5 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 58 | 20 | 27 | 0 | 18 | 10 | 11 | 58 | 56 | 35 | 71 | 5 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 64 | 22 | 30 | 0 | 20 | 11 | 12 | 64 | 62 | 39 | 79 | 6 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 64 | 22 | 30 | 0 | 20 | 11 | 12 | 64 | 62 | 39 | 79 | 6 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 247 | 282 | 63 | 227 | 311 | 42 | 84 | xxxx | xxxxx | 127 | xxxx | xxxxx |
| Potent Cap.: | 691 | 630 | 995 | 714 | 607 | 1026 | 1525 | xxxx | xxxxx | 1472 | xxxx | xxxxx |
| Move Cap.: | 649 | 608 | 995 | 656 | 587 | 1026 | 1525 | xxxx | xxxxx | 1472 | xxxx | xxxxx |
| Volume/Cap: | 0.10 | 0.04 | 0.03 | 0.00 | 0.03 | 0.01 | 0.01 | xxxx | xxxx | 0.03 | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | 0.1 | 0.1 | xxxx | 0.1 | 0.0 | 0.0 | xxxx | xxxxx | 0.1 | xxxx | xxxxx |
| Control Del: | xxxxx | 11.0 | 8.7 | xxxxx | 11.4 | 8.5 | 7.4 | xxxx | xxxxx | 7.5 | xxxx | xxxxx |
| LOS by Move: | * | B | A | * | B | A | A | * | * | A | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | 642 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | 0.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | 11.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | B | * | * | * | * | * | * | * | * | * | * | * |
| ApproachDel: | 10.6 | | | 10.4 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | B | | | B | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.





Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Sunshine Blvd. & Alsdorf Rd.

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: A[ 9.1]

| Street Name: | Sunshine Boulevard | | | | | | Alsdorf Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 | 2 | 0 0 | 0 | 0 1 | 1 0 | 0 | 0 1! | 0 0 | 0 | 0 0 | 0 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 11 | 94 | 0 | 0 | 95 | 17 | 8 | 0 | 13 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 11 | 94 | 0 | 0 | 95 | 17 | 8 | 0 | 13 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 12 | 104 | 0 | 0 | 106 | 19 | 9 | 0 | 14 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 12 | 104 | 0 | 0 | 106 | 19 | 9 | 0 | 14 | 0 | 0 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.8 | 6.5 | 6.9 | xxxxx | xxxx | xxxxx |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 124 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 192 | 244 | 62 | xxxx | xxxx | xxxxx |
| Potent Cap.: | 1475 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 785 | 661 | 996 | xxxx | xxxx | xxxxx |
| Move Cap.: | 1475 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 780 | 656 | 996 | xxxx | xxxx | xxxxx |
| Volume/Cap: | 0.01 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.01 | 0.00 | 0.01 | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | 7.5 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | A | * | * | * | * | * | * | * | * | * | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 901 | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 0.1 | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 9.1 | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | A | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 9.1 | | | xxxxxx | | |
| ApproachLOS: | * | | | * | | | A | | | * | | |

Note: Queue reported is the number of cars per lane.

Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Sunshine Blvd. & Date St.

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[ 9.3]

| Street Name: | Sunshine Boulevard | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 | 1 | 0 0 | 1 0 | 1 | 0 0 | 1 0 |
| Volume Module: | >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | |
| Base Vol: | 0 | 86 | 2 | 0 | 83 | 4 | 4 | 0 | 1 | 0 | 0 | 3 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 86 | 2 | 0 | 83 | 4 | 4 | 0 | 1 | 0 | 0 | 3 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 96 | 2 | 0 | 92 | 4 | 4 | 0 | 1 | 0 | 0 | 3 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 96 | 2 | 0 | 92 | 4 | 4 | 0 | 1 | 0 | 0 | 3 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| FollowUpTim: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 142 | 192 | 48 | 142 | 192 | 48 |
| Potent Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 819 | 706 | 1017 | 820 | 706 | 1017 |
| Move Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 816 | 706 | 1017 | 819 | 706 | 1017 |
| Volume/Cap: | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 9.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | * | * | * | A | * | * | * | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | 1017 | xxxx | xxxx | 1017 |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 0.0 | xxxxx | xxxx | 0.0 |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 8.5 | xxxxx | xxxx | 8.6 |
| Shared LOS: | * | * | * | * | * | * | * | * | A | * | * | A |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 9.3 | | | 8.6 | | |
| ApproachLOS: | * | | | * | | | A | | | A | | |

Note: Queue reported is the number of cars per lane.





Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Sunshine Blvd. & I-10 WB Ramps

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: A[ 9.4]

| Street Name: | Sunshine Boulevard | | | | | | I-10 Westbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 | 1 0 | 0 0 | 0 | 0 0 | 1 0 | 0 | 0 0 | 0 0 | 1 | 0 0 | 1 0 |
| Volume Module: | >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | |
| Base Vol: | 31 | 77 | 0 | 0 | 54 | 63 | 0 | 0 | 0 | 27 | 2 | 56 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 31 | 77 | 0 | 0 | 54 | 63 | 0 | 0 | 0 | 27 | 2 | 56 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 34 | 86 | 0 | 0 | 60 | 70 | 0 | 0 | 0 | 30 | 2 | 62 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 34 | 86 | 0 | 0 | 60 | 70 | 0 | 0 | 0 | 30 | 2 | 62 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.4 | 6.5 | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 130 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 249 | 284 | 86 |
| Potent Cap.: | 1468 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 743 | 628 | 979 |
| Move Cap.: | 1468 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 730 | 613 | 979 |
| Volume/Cap: | 0.02 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 0.04 | 0.00 | 0.06 |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.1 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx |
| Control Del: | 7.5 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 10.1 | xxxx | xxxxx |
| LOS by Move: | A | * | * | * | * | * | * | * | * | B | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | 959 |
| SharedQueue: | 0.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 0.2 |
| Shrd ConDel: | 7.5 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 9.0 |
| Shared LOS: | A | * | * | * | * | * | * | * | * | * | * | A |
| ApproachDel: | xxxxxx | | | xxxxxx | | | xxxxxx | | | 9.4 | | |
| ApproachLOS: | * | | | * | | | * | | | A | | |

Note: Queue reported is the number of cars per lane.

Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Sunshine Blvd. & I-10 EB Ramps

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: A[ 9.4]

| Street Name: | Sunshine Boulevard | | | | | | I-10 Eastbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 0 1 0 | | | 0 1 0 0 0 | | | 0 1 0 0 1 | | | 0 0 0 0 0 | | |
| Volume Module: >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 65 | 49 | 27 | 54 | 0 | 43 | 2 | 49 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 65 | 49 | 27 | 54 | 0 | 43 | 2 | 49 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 72 | 54 | 30 | 60 | 0 | 48 | 2 | 54 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 72 | 54 | 30 | 60 | 0 | 48 | 2 | 54 | 0 | 0 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | xxxxx | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 6.4 | 6.5 | 6.2 | xxxxx | xxxx | xxxxx |
| FollowUpTim: | xxxxx | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | xxxx | xxxx | xxxxx | 127 | xxxx | xxxxx | 219 | 247 | 60 | xxxx | xxxx | xxxxx |
| Potent Cap.: | xxxx | xxxx | xxxxx | 1472 | xxxx | xxxxx | 773 | 659 | 1011 | xxxx | xxxx | xxxxx |
| Move Cap.: | xxxx | xxxx | xxxxx | 1472 | xxxx | xxxxx | 761 | 645 | 1011 | xxxx | xxxx | xxxxx |
| Volume/Cap: | xxxx | xxxx | xxxx | 0.02 | xxxx | xxxx | 0.06 | 0.00 | 0.05 | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx | xxxx | xxxx | 0.2 | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | 7.5 | xxxx | xxxxx | xxxxx | xxxx | 8.8 | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | A | * | * | * | * | A | * | * | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 755 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx | 0.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | 7.5 | xxxx | xxxxx | 10.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | A | * | * | B | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 9.4 | | | xxxxxx | | |
| ApproachLOS: | * | | | * | | | A | | | * | | |

Note: Queue reported is the number of cars per lane.





Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 SR 87 & SR 84

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: A[ 8.6]

| Street Name: | State Route 87 | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 1! 0 0 | | | 0 1 0 0 1 | | | 1 0 0 1 0 | | | 0 0 0 1 0 | | |
| Volume Module: >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 8 | 0 | 16 | 10 | 10 | 1 | 0 | 21 | 2 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 8 | 0 | 16 | 10 | 10 | 1 | 0 | 21 | 2 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 0 | 0 | 9 | 0 | 18 | 11 | 11 | 1 | 0 | 23 | 2 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 0 | 0 | 9 | 0 | 18 | 11 | 11 | 1 | 0 | 23 | 2 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.1 | 6.5 | 6.2 | 6.4 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 67 | 59 | 12 | 58 | 59 | 24 | 26 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Potent Cap.: | 931 | 835 | 1075 | 954 | 836 | 1058 | 1602 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Move Cap.: | 910 | 830 | 1075 | 949 | 830 | 1058 | 1602 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | xxxx | xxxx | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | xxxx | xxxx | 0.1 | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 8.5 | 7.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | * | * | A | A | * | * | * | * | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx | 0 | xxxxx | 949 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | 8.8 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | A | * | * | * | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | 8.6 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | * | | | A | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR 87 & Milligan Rd.

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[ 9.1]

| Street Name: | State Route 87 | | | | | | Milligan Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 | 0 | 1 0 | 0 | 1 0 | 0 0 | 0 | 0 0 | 0 0 | 0 | 0 | 1! 0 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << AM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 89 | 9 | 3 | 69 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 89 | 9 | 3 | 69 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 99 | 10 | 3 | 77 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 99 | 10 | 3 | 77 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | xxxxx | xxxx | xxxxx | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.4 | 6.5 | 6.2 |
| FollowUpTim: | xxxxx | xxxx | xxxxx | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | xxxx | xxxx | xxxxx | 109 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 187 | 187 | 104 |
| Potent Cap.: | xxxx | xxxx | xxxxx | 1494 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 807 | 711 | 956 |
| Move Cap.: | xxxx | xxxx | xxxxx | 1494 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 805 | 709 | 956 |
| Volume/Cap: | xxxx | xxxx | xxxx | 0.00 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.00 | 0.00 | 0.00 |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | 7.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | A | * | * | * | * | * | * | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 890 | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 0.0 | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | 7.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 9.1 | xxxxx |
| Shared LOS: | * | * | * | A | * | * | * | * | * | * | A | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | xxxxxx | | | 9.1 | | |
| ApproachLOS: | * | | | * | | | * | | | A | | |

Note: Queue reported is the number of cars per lane.





Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2010 AM - Existing Conditions

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

| Node | Intersection | NB | SB | EB | WB |
|---|---|---|---|---|---|
| 1 | Sunshine Blvd. & SR 84 | 011010 | 101010 | 101100 | 101100 |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 102000 | 001100 | 000001 | 000000 |
| 3 | Sunshine Blvd. & Date St. | 102010 | 101100 | 100100 | 100100 |
| 4 | Sunshine Blvd. & I-10 WB Ramps | 010000 | 000100 | 000000 | 100100 |
| 5 | Sunshine Blvd. & I-10 EB Ramps | 000100 | 010000 | 010010 | 000000 |
| 6 | SR 87 & SR 84 | 000001 | 010010 | 100100 | 000100 |
| 7 | SR 87 & Milligan Rd. | 000100 | 010000 | 000000 | 000001 |

Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Scenario Report

| | |
|---|---|
| Scenario: | Existing PM |
| Command: | PM |
| Volume: | PM |
| Geometry: | Existing |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | PM |
| Trip Distribution: | Default Trip Distribution |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Default Configuration |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Sunshine Blvd. & SR 84 | B | 11.5 | 0.124 | B | 11.5 | 0.124 | + 0.000 D/V |
| # 2 Sunshine Blvd. & Alsdorf Rd. | A | 9.5 | 0.037 | A | 9.5 | 0.037 | + 0.000 D/V |
| # 3 Sunshine Blvd. & Date St. | A | 9.2 | 0.003 | A | 9.2 | 0.003 | + 0.000 D/V |
| # 4 Sunshine Blvd. & I-10 WB Ramps | A | 9.3 | 0.097 | A | 9.3 | 0.097 | + 0.000 D/V |
| # 5 Sunshine Blvd. & I-10 EB Ramps | A | 9.3 | 0.057 | A | 9.3 | 0.057 | + 0.000 D/V |
| # 6 SR 87 & SR 84 | A | 9.1 | 0.118 | A | 9.1 | 0.118 | + 0.000 D/V |
| # 7 SR 87 & Milligan Rd. | A | 10.0 | 0.042 | A | 10.0 | 0.042 | + 0.000 D/V |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Sunshine Blvd. & SR 84

Average Delay (sec/veh): 4.6 Worst Case Level Of Service: B[ 11.5]

| Street Name: | Sunshine Boulevard | | | | | | | | | State Route 84 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | | | | South Bound | | | | East Bound | | | | | West Bound | | |
| Movement: | L | - | T | - | R | | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | | Stop Sign | | | | | Uncontrolled | | | | | Uncontrolled | | | | |
| Rights: | Include | | | | | | Include | | | | | Include | | | | | Include | | | | |
| Lanes: | 0 | 1 | 1 | 0 | 1 | | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 56 | | 16 | | 52 | | 6 | | 18 | | 27 | 17 | | 119 | | 61 | 48 | | 112 | | 10 |
| Growth Adj: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| Initial Bse: | 56 | | 16 | | 52 | | 6 | | 18 | | 27 | 17 | | 119 | | 61 | 48 | | 112 | | 10 |
| User Adj: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Adj: | 0.90 | | 0.90 | | 0.90 | | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 |
| PHF Volume: | 62 | | 18 | | 58 | | 7 | | 20 | | 30 | 19 | | 132 | | 68 | 53 | | 124 | | 11 |
| Reduct Vol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| FinalVolume: | 62 | | 18 | | 58 | | 7 | | 20 | | 30 | 19 | | 132 | | 68 | 53 | | 124 | | 11 |
| Critical Gap Module: | | | | | | | | | | | | | | | | | | | | | |
| Critical Gp: | 7.5 | | 6.5 | | 6.9 | | 7.5 | | 6.5 | | 6.9 | 4.1 | xxxx | xxxxx | | | 4.1 | xxxx | xxxxx | | |
| FollowUpTim: | 3.5 | | 4.0 | | 3.3 | | 3.5 | | 4.0 | | 3.3 | 2.2 | xxxx | xxxxx | | | 2.2 | xxxx | xxxxx | | |
| Capacity Module: | | | | | | | | | | | | | | | | | | | | | |
| Cnflict Vol: | 383 | | 446 | | 100 | | 349 | | 474 | | 68 | 136 | xxxx | xxxxx | | | 200 | xxxx | xxxxx | | |
| Potent Cap.: | 555 | | 510 | | 943 | | 586 | | 492 | | 988 | 1461 | xxxx | xxxxx | | | 1384 | xxxx | xxxxx | | |
| Move Cap.: | 500 | | 484 | | 943 | | 514 | | 467 | | 988 | 1461 | xxxx | xxxxx | | | 1384 | xxxx | xxxxx | | |
| Volume/Cap: | 0.12 | | 0.04 | | 0.06 | | 0.01 | | 0.04 | | 0.03 | 0.01 | xxxx | xxxx | | | 0.04 | xxxx | xxxx | | |
| Level Of Service Module: | | | | | | | | | | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | | 0.1 | | 0.2 | | 0.0 | | 0.1 | | 0.1 | 0.0 | xxxx | xxxxx | | | 0.1 | xxxx | xxxxx | | |
| Control Del: | xxxxx | | 12.6 | | 9.1 | | 12.1 | | 13.1 | | 8.8 | 7.5 | xxxx | xxxxx | | | 7.7 | xxxx | xxxxx | | |
| LOS by Move: | * | | B | | A | | B | | B | | A | A | * | * | | | A | * | * | | |
| Movement: | LT | - | LTR | - | RT | | LT | - | LTR | - | RT | LT | - | LTR | - | RT | LT | - | LTR | - | RT |
| Shared Cap.: | 498 | xxxx | xxxxx | | | | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | |
| SharedQueue: | 0.5 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | | |
| Shrd ConDel: | 13.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | | |
| Shared LOS: | B | * | * | * | * | * | * | * | * | * | * | * | * | * | | | | | | | |
| ApproachDel: | 11.5 | | | 10.7 | | | xxxxxx | | | xxxxxx | | | | | | | | | | | |
| ApproachLOS: | B | | | B | | | * | | | * | | | | | | | | | | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Sunshine Blvd. & Alsdorf Rd.

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: A[ 9.5]

| Street Name: | Sunshine Boulevard | | | | | | | | | Alsdorf Road | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | | | | South Bound | | | | East Bound | | | | | West Bound | | |
| Movement: | L | - | T | - | R | | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Uncontrolled | | | | | | Uncontrolled | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Rights: | Include | | | | | | Include | | | | | Include | | | | | Include | | | | |
| Lanes: | 1 | 0 | 2 | 0 | 0 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 16 | | 108 | | 0 | | 0 | | 93 | | 27 | 25 | | 0 | | 21 | 0 | | 0 | | 0 |
| Growth Adj: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| Initial Bse: | 16 | | 108 | | 0 | | 0 | | 93 | | 27 | 25 | | 0 | | 21 | 0 | | 0 | | 0 |
| User Adj: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Adj: | 0.90 | | 0.90 | | 0.90 | | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 |
| PHF Volume: | 18 | | 120 | | 0 | | 0 | | 103 | | 30 | 28 | | 0 | | 23 | 0 | | 0 | | 0 |
| Reduct Vol: | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| FinalVolume: | 18 | | 120 | | 0 | | 0 | | 103 | | 30 | 28 | | 0 | | 23 | 0 | | 0 | | 0 |
| Critical Gap Module: | | | | | | | | | | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | 6.8 | 6.5 | 6.9 | xxxxx | xxxx | xxxxx | | | | |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | 3.5 | 4.0 | 3.3 | xxxxx | xxxx | xxxxx | | | | |
| Capacity Module: | | | | | | | | | | | | | | | | | | | | | |
| Cnflict Vol: | 133 | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | | | | 214 | 274 | 67 | xxxx | xxxx | xxxxx | | | | |
| Potent Cap.: | 1464 | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | | | | 761 | 637 | 990 | xxxx | xxxx | xxxxx | | | | |
| Move Cap.: | 1464 | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | | | | 754 | 629 | 990 | xxxx | xxxx | xxxxx | | | | |
| Volume/Cap: | 0.01 | xxxx | xxxx | xxxx | xxxx | xxxx | | | | | | 0.04 | 0.00 | 0.02 | xxxx | xxxx | xxxx | | | | |
| Level Of Service Module: | | | | | | | | | | | | | | | | | | | | | |
| 2Way95thQ: | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | | | | | | | |
| Control Del: | 7.5 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | | |
| LOS by Move: | A | * | * | * | * | * | * | * | * | * | * | * | | | | | | | | | |
| Movement: | LT | - | LTR | - | RT | | LT | - | LTR | - | RT | LT | - | LTR | - | RT | LT | - | LTR | - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | 846 | xxxxx | xxxx | xxxx | xxxxx | | | | | | | | |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 0.2 | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 9.5 | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| Shared LOS: | * | * | * | * | * | * | * | * | A | * | * | * | * | | | | | | | | |
| ApproachDel: | xxxxxx | | | xxxxxx | | | | | 9.5 | | | xxxxxx | | | | | | | | | |
| ApproachLOS: | * | | | * | | | | | A | | | * | | | | | | | | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Sunshine Blvd. & Date St.

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[ 9.2]

| Street Name: | Sunshine Boulevard | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 2 | 0 | 1 | 1 0 | 1 | 1 0 | 1 0 | 0 | 1 0 | 1 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 76 | 1 | 0 | 97 | 4 | 2 | 0 | 1 | 1 | 0 | 1 |
| Growth Adj: | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | |
| Initial Bse: | 0 | 76 | 1 | 0 | 97 | 4 | 2 | 0 | 1 | 1 | 0 | 1 |
| User Adj: | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | |
| PHF Adj: | 0.90 0.90 | 0.90 | | 0.90 0.90 | 0.90 | | 0.90 0.90 | 0.90 | | 0.90 0.90 | 0.90 | |
| PHF Volume: | 0 | 84 | 1 | 0 | 108 | 4 | 2 | 0 | 1 | 1 | 0 | 1 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 84 | 1 | 0 | 108 | 4 | 2 | 0 | 1 | 1 | 0 | 1 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | xxxxx xxxx | xxxxx | | xxxxx xxxx | xxxxx | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| FollowUpTim: | xxxxx xxxx | xxxxx | | xxxxx xxxx | xxxxx | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | xxxx xxxx | xxxxx | | xxxx xxxx | xxxxx | | 152 | 196 | 56 | 138 | 197 | 42 |
| Potent Cap.: | xxxx xxxx | xxxxx | | xxxx xxxx | xxxxx | | 806 | 703 | 1005 | 824 | 702 | 1026 |
| Move Cap.: | xxxx xxxx | xxxxx | | xxxx xxxx | xxxxx | | 805 | 703 | 1005 | 823 | 702 | 1026 |
| Volume/Cap: | xxxx xxxx | xxxx | | xxxx xxxx | xxxx | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx xxxx | xxxxx | | xxxx xxxx | xxxxx | | 0.0 | xxxx | xxxxx | 0.0 | xxxx | xxxxx |
| Control Del: | xxxxx xxxx | xxxxx | | xxxxx xxxx | xxxxx | | 9.5 | xxxx | xxxxx | 9.4 | xxxx | xxxxx |
| LOS by Move: | * | * | * | * | * | * | A | * | * | A | * | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx xxxx | xxxxx | | xxxx xxxx | xxxxx | | xxxx | xxxx | 1005 | xxxx | xxxx | 1026 |
| SharedQueue: | xxxxx xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | 0.0 | xxxxx | xxxx | 0.0 |
| Shrd ConDel: | xxxxx xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | 8.6 | xxxxx | xxxx | 8.5 |
| Shared LOS: | * | * | * | * | * | * | * | * | A | * | * | A |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 9.2 | | | 8.9 | | |
| ApproachLOS: | * | | | * | | | A | | | A | | |

Note: Queue reported is the number of cars per lane.





Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Sunshine Blvd. & I-10 WB Ramps

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: A[ 9.3]

| Street Name: | Sunshine Boulevard | | | | | | I-10 Westbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 1 | 0 | 0 0 | 0 | 0 | 0 1 | 0 | 0 | 0 0 | 1 | 0 | 0 1 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 31 | 64 | 0 | 0 | 59 | 74 | 0 | 0 | 0 | 26 | 0 | 87 |
| Growth Adj: | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | |
| Initial Bse: | 31 | 64 | 0 | 0 | 59 | 74 | 0 | 0 | 0 | 26 | 0 | 87 |
| User Adj: | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | | 1.00 1.00 | 1.00 | |
| PHF Adj: | 0.90 0.90 | 0.90 | | 0.90 0.90 | 0.90 | | 0.90 0.90 | 0.90 | | 0.90 0.90 | 0.90 | |
| PHF Volume: | 34 | 71 | 0 | 0 | 66 | 82 | 0 | 0 | 0 | 29 | 0 | 97 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 34 | 71 | 0 | 0 | 66 | 82 | 0 | 0 | 0 | 29 | 0 | 97 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | xxxxx | 6.4 | 6.5 | 6.2 |
| FollowUpTim: | 2.2 xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 148 xxxx | xxxxx | | xxxx xxxx | xxxxx | | xxxx | xxxx | xxxxx | 247 | 288 | 71 |
| Potent Cap.: | 1446 xxxx | xxxxx | | xxxx xxxx | xxxxx | | xxxx | xxxx | xxxxx | 746 | 625 | 997 |
| Move Cap.: | 1446 xxxx | xxxxx | | xxxx xxxx | xxxxx | | xxxx | xxxx | xxxxx | 732 | 610 | 997 |
| Volume/Cap: | 0.02 xxxx | xxxx | | xxxx xxxx | xxxx | | xxxx | xxxx | xxxx | 0.04 | 0.00 | 0.10 |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.1 xxxx | xxxxx | | xxxx xxxx | xxxxx | | xxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx |
| Control Del: | 7.5 xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | xxxxx | 10.1 | xxxx | xxxxx |
| LOS by Move: | A | * | * | * | * | * | * | * | * | B | * | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx xxxx | xxxxx | | xxxx xxxx | xxxxx | | xxxxx | xxxx | xxxxx | xxxx | xxxx | 997 |
| SharedQueue: | 0.1 xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 0.3 |
| Shrd ConDel: | 7.5 xxxx | xxxxx | | xxxxx xxxx | xxxxx | | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 9.0 |
| Shared LOS: | A | * | * | * | * | * | * | * | * | * | * | A |
| ApproachDel: | xxxxxx | | | xxxxxx | | | xxxxxx | | | 9.3 | | |
| ApproachLOS: | * | | | * | | | * | | | A | | |

Note: Queue reported is the number of cars per lane.

Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Sunshine Blvd. & I-10 EB Ramps

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: A[ 9.3]

| Street Name: | Sunshine Boulevard | | | | | | I-10 Eastbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 | 0 | 1 0 | 0 1 | 0 | 0 0 | 0 1 | 0 | 0 1 | 0 0 | 0 | 0 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 55 | 33 | 28 | 57 | 0 | 40 | 1 | 42 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 55 | 33 | 28 | 57 | 0 | 40 | 1 | 42 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 61 | 37 | 31 | 63 | 0 | 44 | 1 | 47 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 61 | 37 | 31 | 63 | 0 | 44 | 1 | 47 | 0 | 0 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | xxxxx | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 6.4 | 6.5 | 6.2 | xxxxx | xxxx | xxxxx |
| FollowUpTim: | xxxxx | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | xxxx | xxxx | xxxxx | 98 | xxxx | xxxxx | 205 | 223 | 63 | xxxx | xxxx | xxxxx |
| Potent Cap.: | xxxx | xxxx | xxxxx | 1508 | xxxx | xxxxx | 788 | 679 | 1007 | xxxx | xxxx | xxxxx |
| Move Cap.: | xxxx | xxxx | xxxxx | 1508 | xxxx | xxxxx | 775 | 665 | 1007 | xxxx | xxxx | xxxxx |
| Volume/Cap: | xxxx | xxxx | xxxx | 0.02 | xxxx | xxxx | 0.06 | 0.00 | 0.05 | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx | xxxx | xxxx | 0.1 | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | 7.4 | xxxx | xxxxx | xxxxx | xxxx | 8.7 | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | A | * | * | * | * | A | * | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 772 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx | 0.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | 7.4 | xxxx | xxxxx | 10.0 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | A | * | * | A | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 9.3 | | | xxxxxx | | |
| ApproachLOS: | * | | | * | | | A | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 SR 87 & SR 84

Average Delay (sec/veh): 7.3 Worst Case Level Of Service: A[ 9.1]

| Street Name: | State Route 87 | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 | 1! | 0 0 | 0 1 | 0 | 0 1 | 1 0 | 0 | 1 0 | 0 0 | 0 | 1 0 |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 100 | 0 | 34 | 11 | 16 | 0 | 0 | 16 | 1 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 100 | 0 | 34 | 11 | 16 | 0 | 0 | 16 | 1 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 0 | 0 | 111 | 0 | 38 | 12 | 18 | 0 | 0 | 18 | 1 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 0 | 0 | 111 | 0 | 38 | 12 | 18 | 0 | 0 | 18 | 1 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.1 | 6.5 | 6.2 | 6.4 | 6.5 | 6.2 | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 79 | 61 | 18 | 61 | 61 | 18 | 19 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Potent Cap.: | 914 | 834 | 1067 | 951 | 834 | 1066 | 1611 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Move Cap.: | 876 | 827 | 1067 | 946 | 828 | 1066 | 1611 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.04 | 0.01 | xxxx | xxxx | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | xxxx | xxxx | 0.1 | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 8.5 | 7.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | * | * | A | A | * | * | * | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | 0 | xxxxx | 946 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | 0.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | 9.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | A | * | * | * | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | 9.1 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | * | | | A | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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PM Peak Hour
2010 PM - Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #7 SR 87 & Milligan Rd.

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Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[ 10.0]

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| Street Name: | State Route 87 | | | | | | Milligan Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 0 1 0 | | | 0 1 0 0 0 | | | 0 0 0 0 0 | | | 1 0 0 0 0 | | |
| Volume Module: >> Count Date: 20 Jul 2010 << PM Peak Hour | | | | | | | | | | | | |
| Base Vol: | 0 | 86 | 10 | 7 | 103 | 0 | 0 | 0 | 0 | 29 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 86 | 10 | 7 | 103 | 0 | 0 | 0 | 0 | 29 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 96 | 11 | 8 | 114 | 0 | 0 | 0 | 0 | 32 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 96 | 11 | 8 | 114 | 0 | 0 | 0 | 0 | 32 | 0 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | xxxxx | xxxx | xxxxx | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.4 | xxxx | xxxxx |
| FollowUpTim: | xxxxx | xxxx | xxxxx | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | xxxx | xxxx | xxxxx | 107 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 231 | xxxx | xxxxx |
| Potent Cap.: | xxxx | xxxx | xxxxx | 1497 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 762 | xxxx | xxxxx |
| Move Cap.: | xxxx | xxxx | xxxxx | 1497 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 758 | xxxx | xxxxx |
| Volume/Cap: | xxxx | xxxx | xxxx | 0.01 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.04 | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | 7.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 10.0 | xxxx | xxxxx |
| LOS by Move: | * | * | * | A | * | * | * | * | * | A | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | 7.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | A | * | * | * | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | xxxxxx | | | 10.0 | | |
| ApproachLOS: | * | | | * | | | * | | | A | | |

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Note: Queue reported is the number of cars per lane.

**********





Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2010 PM - Existing Conditions

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

| Node | Intersection | NB | SB | EB | WB |
|---|---|---|---|---|---|
| 1 | Sunshine Blvd. & SR 84 | 011010 | 101010 | 101100 | 101100 |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 102000 | 001100 | 000001 | 000000 |
| 3 | Sunshine Blvd. & Date St. | 102010 | 101100 | 100100 | 100100 |
| 4 | Sunshine Blvd. & I-10 WB Ramps | 010000 | 000100 | 000000 | 100100 |
| 5 | Sunshine Blvd. & I-10 EB Ramps | 000100 | 010000 | 010010 | 000000 |
| 6 | SR 87 & SR 84 | 000001 | 010010 | 100100 | 000100 |
| 7 | SR 87 & Milligan Rd. | 000100 | 010000 | 000000 | 100000 |

# APPENDIX D

# SUNSHINE INDUSTRIAL PARK TRIP GENERATION

CivTech

| Proposed Use | ITE LUC | ITE Land Use Name | Total | Units | AM Distribution In | AM Distribution Out | PM Distribution In | PM Distribution Out |
|---|---|---|---|---|---|---|---|---|
| Shopping Center | 820 | Shopping Center | 103.526 | KSF | 61% | 39% | 48% | 52% |
| Industrial Park | 130 | Industrial Park | 439.006 | KSF | 82% | 18% | 21% | 79% |
| Warehousing | 150 | Warehousing | 1756.022 | KSF | 79% | 21% | 25% | 75% |

| Proposed Use | ADT Avg Rate | ADT Total | AM Peak Hour Avg Rate | AM Peak Hour Total | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour Avg Rate | PM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out |
|---|---|---|---|---|---|---|---|---|---|---|
| Shopping Center | 42.94 | 4,445 | 1.00 | 104 | 63 | 40 | 3.73 | 386 | 185 | 201 |
| Industrial Park | 6.66 | 2,926 | 0.73 | 323 | 265 | 58 | 0.87 | 381 | 80 | 301 |
| Warehousing | 3.30 | 5,796 | 0.23 | 399 | 315 | 84 | 0.21 | 373 | 93 | 280 |
| TOTALS | | 13,167 | | 826 | 643 | 182 | | 1,140 | 359 | 781 |

# APPENDIX E

# BACKGROUND TRAFFIC GROWTH CALCULATIONS

CivTech

| Sunshine Industrial Park TIA<br>AM Peak Hour<br><br>Intersection | 2030 Volumes - AM Peak Hour Turning Movements | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | West of Intersection Eastbound | | | East of Intersection Westbound | | | South of Intersection Northbound | | | North of Intersection Southbound | | |
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Sunshine Blvd. / SR 84 | 130 | 255 | 505 | 130 | 75 | 20 | 380 | 125 | 100 | 30 | 195 | 115 |
| Sunshine Blvd. / Alsdorf Rd. | 10 | 0 | 110 | 0 | 0 | 0 | 0 | 550 | 0 | 0 | 735 | 80 |
| Sunshine Blvd. / Date St. | 45 | 0 | 190 | 0 | 0 | 0 | 15 | 525 | 0 | 0 | 660 | 150 |
| Sunshine Blvd. / I-10 | 185 | 0 | 295 | 195 | 0 | 285 | 285 | 245 | 165 | 595 | 340 | 196 |
| SR 87 / SR 84 | 420 | 20 | 0 | 0 | 15 | 275 | 0 | 15 | 0 | 500 | 25 | 335 |
| SR 87 / Milligan Rd. | 0 | 0 | 0 | 220 | 0 | 0 | 0 | 1,160 | 40 | 280 | 1,520 | 0 |
| | | | | | | | | | | | | |

**Notes:**

By taking the ratio of departing volumes and applying the ratios to the approach volume for each leg, the turning movement volumes are calculated.

| Rounding factor | 5 |
|---|---|

0

| Sunshine Industrial Park TIA<br>PM Peak Hour<br><br>Intersection | 2030 Volumes - PM Peak Hour Turning Movements | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | West of Intersection Eastbound | | | East of Intersection Westbound | | | South of Intersection Northbound | | | North of Intersection Southbound | | |
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Sunshine Blvd. / SR 84 | 195 | 84 | 465 | 90 | 220 | 55 | 565 | 220 | 255 | 34 | 65 | 150 |
| Sunshine Blvd. / Alsdorf Rd. | 90 | 0 | 0 | 0 | 0 | 0 | 120 | 830 | 0 | 0 | 615 | 15 |
| Sunshine Blvd. / Date St. | 165 | 0 | 20 | 0 | 0 | 0 | 215 | 745 | 0 | 0 | 585 | 50 |
| Sunshine Blvd. / I-10 | 220 | 0 | 320 | 480 | 0 | 330 | 330 | 385 | 315 | 225 | 160 | 260 |
| SR 87 / SR 84 | 385 | 5 | 10 | 0 | 25 | 575 | 0 | 30 | 0 | 315 | 10 | 455 |
| SR 87 / Milligan Rd. | 0 | 0 | 0 | 45 | 0 | 315 | 0 | 1,710 | 40 | 210 | 1,100 | 0 |
| | | | | | | | | | | | | |

0

**Notes:**

By taking the ratio of departing volumes and applying the ratios to the approach volume for each leg, the turning movement volumes are calculated.

| Rounding factor | 5 |
|---|---|

0

| Proposed Use | ITE LUC | ITE Land Use Name | Total | Units | AM Distribution In | AM Distribution Out | PM Distribution In | PM Distribution Out |
|---|---|---|---|---|---|---|---|---|
| Manufacturing | 140 | Manufacturing | 673.002 | KSF | 78% | 22% | 36% | 64% |

| Proposed Use | ADT Avg Rate | ADT Total | AM Peak Hour Avg Rate | AM Peak Hour Total | AM Peak Hour In | AM Peak Hour Out | PM Peak Hour Avg Rate | PM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out |
|---|---|---|---|---|---|---|---|---|---|---|
| Manufacturing | 3.82 | 2,572 | 0.73 | 492 | 384 | 108 | 0.73 | 492 | 177 | 315 |
| TOTALS | | 2,572 | | 492 | 384 | 108 | | 492 | 177 | 315 |
| ***NET "NEW" TRIPS*** (After interaction/internal capture & net of pass-by trips) | | **2,572** | | **492** | **384** | **108** | | **492** | **177** | **315** |

**Gross Acres = 103**

**FAR = 15%**



CivTech

# APPENDIX F

# 2030 PEAK HOUR ANALYSIS

CivTech

Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Scenario Report

| | |
|---|---|
| Scenario: | 2030 AM |
| Command: | AM |
| Volume: | AM |
| Geometry: | Existing |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | AM |
| Trip Distribution: | Default Trip Distribution |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Default Configuration |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Base Del/ Veh | Base V/ C | Future LOS | Future Del/ Veh | Future V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Sunshine Blvd. & SR 84 | C | 29.8 | 0.500 | C | 31.1 | 0.602 | + 1.242 D/V |
| # 2 Sunshine Blvd. & Alsdorf Rd. | B | 13.7 | 0.194 | C | 15.6 | 0.218 | + 1.945 D/V |
| # 3 Sunshine Blvd. & Date St. | B | 14.2 | 0.444 | C | 20.3 | 0.789 | + 6.045 D/V |
| # 4 Sunshine Blvd. & I-10 WB Ramps | C | 20.7 | 0.490 | C | 27.4 | 0.660 | + 6.652 D/V |
| # 5 Sunshine Blvd. & I-10 EB Ramps | C | 25.8 | 0.560 | C | 31.8 | 0.700 | + 5.944 D/V |
| # 6 SR 87 & SR 84 | C | 22.5 | 0.469 | C | 25.5 | 0.534 | + 2.983 D/V |
| # 7 SR 87 & Milligan Rd. | B | 17.1 | 0.647 | B | 17.0 | 0.653 | -0.111 D/V |
| # 8 Loop Rd. & Date St. | | 0.0 | 0.000 | B | 12.8 | 0.079 | +12.786 D/V |
| # 9 Loop Rd. & Date St. | | 0.0 | 0.000 | B | 11.6 | 0.117 | +11.570 D/V |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Sunshine Blvd. & SR 84

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.518 |
| Loss Time (sec): | 12 | Average Delay (sec/veh): | 29.9 |
| Optimal Cycle: | 43 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | |
| Rights: | Ovl | | | Include | | | Ovl | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 2 | 0 1 | 0 1 | 1 | 0 1 | 0 1 | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 356 | 112 | 90 | 28 | 165 | 115 | 130 | 229 | 425 | 99 | 68 | 20 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 356 | 112 | 90 | 28 | 165 | 115 | 130 | 229 | 425 | 99 | 68 | 20 |
| Added Vol: | 5 | 2 | 0 | 2 | 6 | 0 | 0 | 19 | 19 | 0 | 5 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 361 | 114 | 90 | 30 | 171 | 115 | 130 | 248 | 444 | 99 | 73 | 20 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 401 | 127 | 100 | 33 | 190 | 128 | 144 | 276 | 493 | 110 | 81 | 22 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 401 | 127 | 100 | 33 | 190 | 128 | 144 | 276 | 493 | 110 | 81 | 22 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 401 | 127 | 100 | 33 | 190 | 128 | 144 | 276 | 493 | 110 | 81 | 22 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.95 | 0.85 | 0.95 | 0.92 | 0.92 |
| Lanes: | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.57 | 0.43 |
| Final Sat.: | 3502 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3610 | 1615 | 1805 | 2743 | 752 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.11 | 0.07 | 0.06 | 0.02 | 0.10 | 0.08 | 0.08 | 0.08 | 0.31 | 0.06 | 0.03 | 0.03 |
| Crit Moves: | **** | | | | **** | | | | **** | **** | | |
| Green/Cycle: | 0.22 | 0.32 | 0.44 | 0.44 | 0.19 | 0.19 | 0.51 | 0.37 | 0.59 | 0.25 | 0.13 | 0.13 |
| Volume/Cap: | 0.52 | 0.21 | 0.14 | 0.06 | 0.52 | 0.41 | 0.18 | 0.21 | 0.52 | 0.31 | 0.23 | 0.23 |
| Delay/Veh: | 41.7 | 29.5 | 20.0 | 19.5 | 44.7 | 43.3 | 15.7 | 26.0 | 15.1 | 36.6 | 46.9 | 46.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 41.7 | 29.5 | 20.0 | 19.5 | 44.7 | 43.3 | 15.7 | 26.0 | 15.1 | 36.6 | 46.9 | 46.9 |
| LOS by Move: | D | C | C | B | D | D | B | C | B | D | D | D |
| HCM2kAvgQ: | 7 | 3 | 2 | 1 | 7 | 4 | 3 | 4 | 11 | 3 | 2 | 2 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Sunshine Blvd. & SR 84

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.602 |
| Loss Time (sec): | 12 | Average Delay (sec/veh): | 31.1 |
| Optimal Cycle: | 50 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Protected | | | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | |
| Rights: | Ovl | | | Include | | | Ovl | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 2 | 0 1 | 0 1 | 1 | 0 1 | 0 1 | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 356 | 112 | 90 | 28 | 165 | 115 | 130 | 229 | 425 | 99 | 68 | 20 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 356 | 112 | 90 | 28 | 165 | 115 | 130 | 229 | 425 | 99 | 68 | 20 |
| Added Vol: | 24 | 13 | 10 | 2 | 30 | 0 | 0 | 26 | 80 | 31 | 7 | 1 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 380 | 125 | 100 | 30 | 195 | 115 | 130 | 255 | 505 | 130 | 75 | 21 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 422 | 139 | 111 | 33 | 217 | 128 | 144 | 283 | 561 | 144 | 83 | 23 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 422 | 139 | 111 | 33 | 217 | 128 | 144 | 283 | 561 | 144 | 83 | 23 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 422 | 139 | 111 | 33 | 217 | 128 | 144 | 283 | 561 | 144 | 83 | 23 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.95 | 0.85 | 0.95 | 0.92 | 0.92 |
| Lanes: | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.56 | 0.44 |
| Final Sat.: | 3502 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3610 | 1615 | 1805 | 2727 | 764 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.12 | 0.07 | 0.07 | 0.02 | 0.11 | 0.08 | 0.08 | 0.08 | 0.35 | 0.08 | 0.03 | 0.03 |
| Crit Moves: | **** | | | | **** | | | | **** | **** | | |
| Green/Cycle: | 0.20 | 0.31 | 0.44 | 0.41 | 0.19 | 0.19 | 0.54 | 0.38 | 0.58 | 0.27 | 0.14 | 0.14 |
| Volume/Cap: | 0.60 | 0.23 | 0.15 | 0.07 | 0.60 | 0.42 | 0.17 | 0.21 | 0.60 | 0.37 | 0.22 | 0.22 |
| Delay/Veh: | 45.1 | 30.9 | 20.0 | 21.3 | 47.3 | 43.7 | 14.2 | 25.3 | 17.5 | 35.0 | 45.9 | 45.9 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 45.1 | 30.9 | 20.0 | 21.3 | 47.3 | 43.7 | 14.2 | 25.3 | 17.5 | 35.0 | 45.9 | 45.9 |
| LOS by Move: | D | C | B | C | D | D | B | C | B | C | D | D |
| HCM2kAvgQ: | 7 | 4 | 2 | 1 | 8 | 4 | 3 | 4 | 14 | 4 | 2 | 2 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Sunshine Blvd. & Alsdorf Rd.

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[ 14.0]

| Street Name: | Sunshine Boulevard | | | | | | | | | Alsdorf Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Uncontrolled | | | | | Uncontrolled | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Rights: | Include | | | | | Include | | | | | Include | | | | | Include | | | | |
| Lanes: | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 20 | 504 | | 0 | | 0 | 594 | | 80 | | 10 | | 0 | | 110 | 0 | | 0 | | 0 |
| Growth Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| Initial Bse: | 20 | 504 | | 0 | | 0 | 594 | | 80 | | 10 | | 0 | | 110 | 0 | | 0 | | 0 |
| Added Vol: | 0 | 7 | | 0 | | 0 | 25 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | | 0 | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| Initial Fut: | 20 | 511 | | 0 | | 0 | 619 | | 80 | | 10 | | 0 | | 110 | 0 | | 0 | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Adj: | 0.90 | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 |
| PHF Volume: | 22 | 568 | | 0 | | 0 | 688 | | 89 | | 11 | | 0 | | 122 | 0 | | 0 | | 0 |
| Reduct Vol: | 0 | 0 | | 0 | | 0 | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| FinalVolume: | 22 | 568 | | 0 | | 0 | 688 | | 89 | | 11 | | 0 | | 122 | 0 | | 0 | | 0 |
| Critical Gap Module: | | | | | | | | | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.8 | 6.5 | | 6.9 | xxxxx | xxxx | xxxxx | | | | | | | |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | | 3.3 | xxxxx | xxxx | xxxxx | | | | | | | |
| Capacity Module: | | | | | | | | | | | | | | | | | | | | |
| Cnflict Vol: | 777 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 1061 | 1344 | | 388 | xxxx | xxxx | xxxxx | | | | | | | |
| Potent Cap.: | 849 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 222 | 153 | | 616 | xxxx | xxxx | xxxxx | | | | | | | |
| Move Cap.: | 849 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 218 | 149 | | 616 | xxxx | xxxx | xxxxx | | | | | | | |
| Volume/Cap: | 0.03 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.05 | 0.00 | | 0.20 | xxxx | xxxx | xxxx | | | | | | | |
| Level Of Service Module: | | | | | | | | | | | | | | | | | | | | |
| 2Way95thQ: | 0.1 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | | | | | | |
| Control Del: | 9.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| LOS by Move: | A | * | | * | | * | * | | * | | * | | * | | * | * | | * | | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | | | | | | | | |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 535 | xxxxx | xxxx | xxxx | xxxxx | | | | | | | | |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 1.0 | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 14.0 | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| Shared LOS: | * | * | | * | * | | * | B | | * | * | | * | * | | | | | | |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 14.0 | | | xxxxxx | | | | | | | | | | |
| ApproachLOS: | * | | | * | | | B | | | * | | | | | | | | | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Sunshine Blvd. & Alsdorf Rd.

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[ 15.6]

| Street Name: | Sunshine Boulevard | | | | | | | | | Alsdorf Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Uncontrolled | | | | | Uncontrolled | | | | | Stop Sign | | | | | Stop Sign | | | | |
| Rights: | Include | | | | | Include | | | | | Include | | | | | Include | | | | |
| Lanes: | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1! | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 20 | 504 | | 0 | | 0 | 594 | | 80 | | 10 | | 0 | | 110 | 0 | | 0 | | 0 |
| Growth Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| Initial Bse: | 20 | 504 | | 0 | | 0 | 594 | | 80 | | 10 | | 0 | | 110 | 0 | | 0 | | 0 |
| Added Vol: | 0 | 47 | | 0 | | 0 | 141 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| PasserByVol: | 0 | 0 | | 0 | | 0 | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| Initial Fut: | 20 | 551 | | 0 | | 0 | 735 | | 80 | | 10 | | 0 | | 110 | 0 | | 0 | | 0 |
| User Adj: | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | | 1.00 |
| PHF Adj: | 0.90 | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 | | 0.90 | | 0.90 | 0.90 | | 0.90 | | 0.90 |
| PHF Volume: | 22 | 612 | | 0 | | 0 | 817 | | 89 | | 11 | | 0 | | 122 | 0 | | 0 | | 0 |
| Reduct Vol: | 0 | 0 | | 0 | | 0 | 0 | | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | 0 |
| FinalVolume: | 22 | 612 | | 0 | | 0 | 817 | | 89 | | 11 | | 0 | | 122 | 0 | | 0 | | 0 |
| Critical Gap Module: | | | | | | | | | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.8 | 6.5 | | 6.9 | xxxxx | xxxx | xxxxx | | | | | | | |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | | 3.3 | xxxxx | xxxx | xxxxx | | | | | | | |
| Capacity Module: | | | | | | | | | | | | | | | | | | | | |
| Cnflict Vol: | 906 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 1212 | 1518 | | 453 | xxxx | xxxx | xxxxx | | | | | | | |
| Potent Cap.: | 760 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 178 | 120 | | 560 | xxxx | xxxx | xxxxx | | | | | | | |
| Move Cap.: | 760 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 174 | 117 | | 560 | xxxx | xxxx | xxxxx | | | | | | | |
| Volume/Cap: | 0.03 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.06 | 0.00 | | 0.22 | xxxx | xxxx | xxxx | | | | | | | |
| Level Of Service Module: | | | | | | | | | | | | | | | | | | | | |
| 2Way95thQ: | 0.1 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | | | | | | |
| Control Del: | 9.9 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| LOS by Move: | A | * | | * | | * | * | | * | | * | | * | | * | * | | * | | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | | | | | | | | |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 472 | xxxxx | xxxx | xxxx | xxxxx | | | | | | | | |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 1.1 | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 15.6 | xxxxx | xxxxx | xxxx | xxxxx | | | | | | | | |
| Shared LOS: | * | * | | * | * | | * | C | | * | * | | * | * | | | | | | |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 15.6 | | | xxxxxx | | | | | | | | | | |
| ApproachLOS: | * | | | * | | | C | | | * | | | | | | | | | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Sunshine Blvd. & Date St.

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.473 |
| Loss Time (sec): | 12 | Average Delay (sec/veh): | 17.5 |
| Optimal Cycle: | 39 | Level Of Service: | B |

| Street Name: | Sunshine Boulevard | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | | Protected | | |
| Rights: | Ovl | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 | 1 | 0 0 | 1 0 | 2 | 0 1 | 0 1 |
| Volume Module: >> Count Date: 1 Jan 2000 << | | | | | | | | | | | | |
| Base Vol: | 15 | 514 | 0 | 0 | 643 | 150 | 45 | 0 | 190 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 15 | 514 | 0 | 0 | 643 | 150 | 45 | 0 | 190 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 276 | 25 | 0 | 0 | 0 | 0 | 0 | 78 | 0 | 7 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 15 | 514 | 276 | 25 | 643 | 150 | 45 | 0 | 190 | 78 | 0 | 7 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 17 | 571 | 307 | 28 | 714 | 167 | 50 | 0 | 211 | 87 | 0 | 8 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 17 | 571 | 307 | 28 | 714 | 167 | 50 | 0 | 211 | 87 | 0 | 8 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 17 | 571 | 307 | 28 | 714 | 167 | 50 | 0 | 211 | 87 | 0 | 8 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.85 | 0.95 | 0.92 | 0.92 | 0.95 | 1.00 | 0.85 | 0.92 | 1.00 | 0.85 |
| Lanes: | 1.00 | 2.00 | 1.00 | 1.00 | 1.62 | 0.38 | 1.00 | 0.00 | 1.00 | 2.00 | 1.00 | 1.00 |
| Final Sat.: | 1805 | 3610 | 1615 | 1805 | 2845 | 664 | 1805 | 0 | 1615 | 3502 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.16 | 0.19 | 0.02 | 0.25 | 0.25 | 0.03 | 0.00 | 0.13 | 0.02 | 0.00 | 0.00 |
| Crit Moves: | **** | | | | **** | | | | **** | **** | | |
| Green/Cycle: | 0.52 | 0.50 | 0.56 | 0.58 | 0.53 | 0.53 | 0.36 | 0.00 | 0.28 | 0.05 | 0.00 | 0.05 |
| Volume/Cap: | 0.06 | 0.31 | 0.34 | 0.06 | 0.47 | 0.47 | 0.08 | 0.00 | 0.47 | 0.47 | 0.00 | 0.09 |
| Delay/Veh: | 12.1 | 14.7 | 12.4 | 9.5 | 14.8 | 14.8 | 20.9 | 0.0 | 30.9 | 48.0 | 0.0 | 45.6 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 12.1 | 14.7 | 12.4 | 9.5 | 14.8 | 14.8 | 20.9 | 0.0 | 30.9 | 48.0 | 0.0 | 45.6 |
| LOS by Move: | B | B | B | A | B | B | C | A | C | D | A | D |
| HCM2kAvgQ: | 0 | 5 | 5 | 0 | 9 | 9 | 1 | 0 | 6 | 2 | 0 | 0 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Sunshine Blvd. & Date St.

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.789 |
| Loss Time (sec): | 12 | Average Delay (sec/veh): | 20.3 |
| Optimal Cycle: | 75 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | | Protected | | |
| Rights: | Ovl | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 | 1 | 0 0 | 1 0 | 2 | 0 1 | 0 1 |
| Volume Module: >> Count Date: 1 Jan 2000 << | | | | | | | | | | | | |
| Base Vol: | 15 | 514 | 0 | 0 | 643 | 150 | 45 | 0 | 190 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 15 | 514 | 0 | 0 | 643 | 150 | 45 | 0 | 190 | 0 | 0 | 0 |
| Added Vol: | 0 | 11 | 707 | 125 | 17 | 0 | 0 | 0 | 0 | 189 | 0 | 36 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 15 | 525 | 707 | 125 | 660 | 150 | 45 | 0 | 190 | 189 | 0 | 36 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 17 | 583 | 786 | 139 | 733 | 167 | 50 | 0 | 211 | 210 | 0 | 40 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 17 | 583 | 786 | 139 | 733 | 167 | 50 | 0 | 211 | 210 | 0 | 40 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 17 | 583 | 786 | 139 | 733 | 167 | 50 | 0 | 211 | 210 | 0 | 40 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.85 | 0.95 | 0.92 | 0.92 | 0.95 | 1.00 | 0.85 | 0.92 | 1.00 | 0.85 |
| Lanes: | 1.00 | 2.00 | 1.00 | 1.00 | 1.63 | 0.37 | 1.00 | 0.00 | 1.00 | 2.00 | 1.00 | 1.00 |
| Final Sat.: | 1805 | 3610 | 1615 | 1805 | 2859 | 650 | 1805 | 0 | 1615 | 3502 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.01 | 0.16 | 0.49 | 0.08 | 0.26 | 0.26 | 0.03 | 0.00 | 0.13 | 0.06 | 0.00 | 0.02 |
| Crit Moves: | | | **** | **** | | | | | **** | **** | | |
| Green/Cycle: | 0.56 | 0.54 | 0.62 | 0.67 | 0.62 | 0.62 | 0.23 | 0.00 | 0.17 | 0.08 | 0.00 | 0.08 |
| Volume/Cap: | 0.05 | 0.30 | 0.79 | 0.25 | 0.42 | 0.42 | 0.13 | 0.00 | 0.79 | 0.79 | 0.00 | 0.33 |
| Delay/Veh: | 9.8 | 12.7 | 18.6 | 6.7 | 10.0 | 10.0 | 30.4 | 0.0 | 54.5 | 59.9 | 0.0 | 45.3 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 9.8 | 12.7 | 18.6 | 6.7 | 10.0 | 10.0 | 30.4 | 0.0 | 54.5 | 59.9 | 0.0 | 45.3 |
| LOS by Move: | A | B | B | A | B | B | C | A | D | E | A | D |
| HCM2kAvgQ: | 0 | 5 | 20 | 2 | 7 | 7 | 1 | 0 | 8 | 5 | 0 | 2 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Sunshine Blvd. & I-10 WB Ramps

Cycle (sec): 120 Critical Vol./Cap.(X): 0.547
Loss Time (sec): 9 Average Delay (sec/veh): 23.8
Optimal Cycle: 38 Level Of Service: C

| Street Name: | Sunshine Boulevard | | | | | | I-10 Westbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 0 | 0 | 0 2 | 0 1 | 0 | 0 0 | 0 0 | 1 | 0 1! | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 285 | 214 | 0 | 0 | 816 | 119 | 0 | 0 | 0 | 80 | 0 | 11 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 285 | 214 | 0 | 0 | 816 | 119 | 0 | 0 | 0 | 80 | 0 | 11 |
| Added Vol: | 0 | 123 | 0 | 0 | 45 | 32 | 0 | 0 | 0 | 0 | 0 | 154 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 285 | 337 | 0 | 0 | 861 | 151 | 0 | 0 | 0 | 80 | 0 | 165 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 317 | 374 | 0 | 0 | 957 | 168 | 0 | 0 | 0 | 89 | 0 | 183 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 317 | 374 | 0 | 0 | 957 | 168 | 0 | 0 | 0 | 89 | 0 | 183 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 317 | 374 | 0 | 0 | 957 | 168 | 0 | 0 | 0 | 89 | 0 | 183 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 0.85 | 1.00 | 1.00 | 1.00 | 0.88 | 1.00 | 0.88 |
| Lanes: | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.33 | 0.00 | 1.67 |
| Final Sat.: | 1805 | 3610 | 0 | 0 | 3610 | 1615 | 0 | 0 | 0 | 2230 | 0 | 2813 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.10 | 0.00 | 0.00 | 0.27 | 0.10 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.07 |
| Crit Moves: | **** | | | | **** | | | | | | | **** |
| Green/Cycle: | 0.32 | 0.81 | 0.00 | 0.00 | 0.48 | 0.48 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.12 |
| Volume/Cap: | 0.55 | 0.13 | 0.00 | 0.00 | 0.55 | 0.21 | 0.00 | 0.00 | 0.00 | 0.33 | 0.00 | 0.55 |
| Delay/Veh: | 34.7 | 2.5 | 0.0 | 0.0 | 22.0 | 17.9 | 0.0 | 0.0 | 0.0 | 48.7 | 0.0 | 51.1 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 34.7 | 2.5 | 0.0 | 0.0 | 22.0 | 17.9 | 0.0 | 0.0 | 0.0 | 48.7 | 0.0 | 51.1 |
| LOS by Move: | C | A | A | A | C | B | A | A | A | D | A | D |
| HCM2kAvgQ: | 9 | 2 | 0 | 0 | 13 | 3 | 0 | 0 | 0 | 3 | 0 | 5 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Sunshine Blvd. & I-10 WB Ramps

Cycle (sec): 120 Critical Vol./Cap.(X): 0.660
Loss Time (sec): 9 Average Delay (sec/veh): 27.4
Optimal Cycle: 48 Level Of Service: C

| Street Name: | Sunshine Boulevard | | | | | | I-10 Westbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 0 | 0 | 0 2 | 0 1 | 0 | 0 0 | 0 0 | 1 | 0 1! | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 285 | 214 | 0 | 0 | 816 | 119 | 0 | 0 | 0 | 80 | 0 | 11 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 285 | 214 | 0 | 0 | 816 | 119 | 0 | 0 | 0 | 80 | 0 | 11 |
| Added Vol: | 0 | 331 | 0 | 0 | 119 | 77 | 0 | 0 | 0 | 0 | 0 | 389 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 285 | 545 | 0 | 0 | 935 | 196 | 0 | 0 | 0 | 80 | 0 | 400 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 317 | 606 | 0 | 0 | 1039 | 218 | 0 | 0 | 0 | 89 | 0 | 444 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 317 | 606 | 0 | 0 | 1039 | 218 | 0 | 0 | 0 | 89 | 0 | 444 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 317 | 606 | 0 | 0 | 1039 | 218 | 0 | 0 | 0 | 89 | 0 | 444 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 0.85 | 1.00 | 1.00 | 1.00 | 0.87 | 1.00 | 0.87 |
| Lanes: | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.17 | 0.00 | 1.83 |
| Final Sat.: | 1805 | 3610 | 0 | 0 | 3610 | 1615 | 0 | 0 | 0 | 1924 | 0 | 3024 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.17 | 0.00 | 0.00 | 0.29 | 0.13 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.15 |
| Crit Moves: | **** | | | | **** | | | | | | | **** |
| Green/Cycle: | 0.27 | 0.70 | 0.00 | 0.00 | 0.44 | 0.44 | 0.00 | 0.00 | 0.00 | 0.22 | 0.00 | 0.22 |
| Volume/Cap: | 0.66 | 0.24 | 0.00 | 0.00 | 0.66 | 0.31 | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.66 |
| Delay/Veh: | 42.6 | 6.4 | 0.0 | 0.0 | 27.8 | 22.3 | 0.0 | 0.0 | 0.0 | 38.0 | 0.0 | 44.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 42.6 | 6.4 | 0.0 | 0.0 | 27.8 | 22.3 | 0.0 | 0.0 | 0.0 | 38.0 | 0.0 | 44.5 |
| LOS by Move: | D | A | A | A | C | C | A | A | A | D | A | D |
| HCM2kAvgQ: | 10 | 4 | 0 | 0 | 16 | 5 | 0 | 0 | 0 | 2 | 0 | 9 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Sunshine Blvd. & I-10 EB Ramps

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.603 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 28.0 |
| Optimal Cycle: | 42 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | I-10 Eastbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1! | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Jan 2000 << | | | | | | | | | | | | |
| Base Vol: | 0 | 492 | 165 | 493 | 403 | 0 | 8 | 0 | 180 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 492 | 165 | 493 | 403 | 0 | 8 | 0 | 180 | 0 | 0 | 0 |
| Added Vol: | 0 | 8 | 0 | 43 | 2 | 0 | 115 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 500 | 165 | 536 | 405 | 0 | 123 | 0 | 180 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 556 | 183 | 596 | 450 | 0 | 137 | 0 | 200 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 556 | 183 | 596 | 450 | 0 | 137 | 0 | 200 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 556 | 183 | 596 | 450 | 0 | 137 | 0 | 200 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 0.89 | 1.00 | 0.89 | 1.00 | 1.00 | 1.00 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 1.41 | 0.00 | 1.59 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 2385 | 0 | 2704 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.15 | 0.11 | 0.33 | 0.12 | 0.00 | 0.06 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.26 | 0.26 | 0.55 | 0.80 | 0.00 | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.60 | 0.44 | 0.60 | 0.16 | 0.00 | 0.47 | 0.00 | 0.60 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 40.5 | 38.3 | 19.4 | 2.7 | 0.0 | 49.5 | 0.0 | 51.7 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 40.5 | 38.3 | 19.4 | 2.7 | 0.0 | 49.5 | 0.0 | 51.7 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | D | D | B | A | A | D | A | D | A | A | A |
| HCM2kAvgQ: | 0 | 10 | 6 | 14 | 2 | 0 | 4 | 0 | 5 | 0 | 0 | 0 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Sunshine Blvd. & I-10 EB Ramps

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.700 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 31.8 |
| Optimal Cycle: | 53 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | I-10 Eastbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 1! | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Volume Module: >> Count Date: 1 Jan 2000 << | | | | | | | | | | | | |
| Base Vol: | 0 | 492 | 165 | 493 | 403 | 0 | 8 | 0 | 180 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 492 | 165 | 493 | 403 | 0 | 8 | 0 | 180 | 0 | 0 | 0 |
| Added Vol: | 0 | 38 | 0 | 102 | 17 | 0 | 292 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 530 | 165 | 595 | 420 | 0 | 300 | 0 | 180 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 589 | 183 | 661 | 467 | 0 | 333 | 0 | 200 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 589 | 183 | 661 | 467 | 0 | 333 | 0 | 200 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 589 | 183 | 661 | 467 | 0 | 333 | 0 | 200 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 0.92 | 1.00 | 0.92 | 1.00 | 1.00 | 1.00 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 1.62 | 0.00 | 1.38 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 2827 | 0 | 2392 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.16 | 0.11 | 0.37 | 0.13 | 0.00 | 0.12 | 0.00 | 0.08 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | **** | | | | | |
| Green/Cycle: | 0.00 | 0.23 | 0.23 | 0.52 | 0.76 | 0.00 | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.70 | 0.49 | 0.70 | 0.17 | 0.00 | 0.70 | 0.00 | 0.50 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 44.8 | 40.8 | 23.9 | 4.1 | 0.0 | 49.9 | 0.0 | 45.6 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 44.8 | 40.8 | 23.9 | 4.1 | 0.0 | 49.9 | 0.0 | 45.6 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | D | D | C | A | A | D | A | D | A | A | A |
| HCM2kAvgQ: | 0 | 12 | 6 | 18 | 2 | 0 | 8 | 0 | 5 | 0 | 0 | 0 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 SR 87 & SR 84

| | | | | | |
|---|---|---|---|---|---|
| Cycle (sec): | 120 | | Critical Vol./Cap.(X): | | 0.493 |
| Loss Time (sec): | 12 | | Average Delay (sec/veh): | | 23.7 |
| Optimal Cycle: | 41 | | Level Of Service: | | C |

| Street Name: | State Route 87 | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Ovl | | | Include | | | Ovl | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 | 0 1 | 0 | 2 | 0 1 | 1 | 0 | 0 1 | 0 | 1 | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 15 | 0 | 500 | 25 | 282 | 385 | 16 | 0 | 0 | 31 | 175 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 15 | 0 | 500 | 25 | 282 | 385 | 16 | 0 | 0 | 31 | 175 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 19 | 5 | 9 | 0 | 0 | 31 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 15 | 0 | 500 | 25 | 301 | 390 | 25 | 0 | 0 | 62 | 175 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 17 | 0 | 556 | 28 | 334 | 433 | 28 | 0 | 0 | 69 | 194 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 17 | 0 | 556 | 28 | 334 | 433 | 28 | 0 | 0 | 69 | 194 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 17 | 0 | 556 | 28 | 334 | 433 | 28 | 0 | 0 | 69 | 194 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.92 | 1.00 | 0.85 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.85 |
| Lanes: | 1.00 | 1.00 | 0.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Final Sat.: | 1900 | 1900 | 0 | 3502 | 1900 | 1615 | 1805 | 1900 | 0 | 1900 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.01 | 0.00 | 0.16 | 0.01 | 0.21 | 0.24 | 0.01 | 0.00 | 0.00 | 0.04 | 0.12 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.00 | 0.02 | 0.00 | 0.32 | 0.34 | 0.83 | 0.49 | 0.56 | 0.00 | 0.00 | 0.07 | 0.40 |
| Volume/Cap: | 0.00 | 0.49 | 0.00 | 0.49 | 0.04 | 0.25 | 0.49 | 0.03 | 0.00 | 0.00 | 0.49 | 0.30 |
| Delay/Veh: | 0.0 | 69.3 | 0.0 | 33.1 | 26.6 | 2.4 | 21.2 | 11.8 | 0.0 | 0.0 | 56.2 | 25.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 69.3 | 0.0 | 33.1 | 26.6 | 2.4 | 21.2 | 11.8 | 0.0 | 0.0 | 56.2 | 25.2 |
| LOS by Move: | A | E | A | C | C | A | C | B | A | A | E | C |
| HCM2kAvgQ: | 0 | 1 | 0 | 8 | 1 | 3 | 11 | 0 | 0 | 0 | 3 | 5 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 SR 87 & SR 84

| | | | | | |
|---|---|---|---|---|---|
| Cycle (sec): | 120 | | Critical Vol./Cap.(X): | | 0.534 |
| Loss Time (sec): | 12 | | Average Delay (sec/veh): | | 25.5 |
| Optimal Cycle: | 44 | | Level Of Service: | | C |

| Street Name: | State Route 87 | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Ovl | | | Include | | | Ovl | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 | 0 1 | 0 | 2 | 0 1 | 1 | 0 | 0 1 | 0 | 1 | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 15 | 0 | 500 | 25 | 282 | 385 | 16 | 0 | 0 | 31 | 175 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 15 | 0 | 500 | 25 | 282 | 385 | 16 | 0 | 0 | 31 | 175 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 53 | 16 | 24 | 0 | 0 | 83 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 15 | 0 | 500 | 25 | 335 | 401 | 40 | 0 | 0 | 114 | 175 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 17 | 0 | 556 | 28 | 372 | 446 | 44 | 0 | 0 | 127 | 194 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 17 | 0 | 556 | 28 | 372 | 446 | 44 | 0 | 0 | 127 | 194 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 17 | 0 | 556 | 28 | 372 | 446 | 44 | 0 | 0 | 127 | 194 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.92 | 1.00 | 0.85 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.85 |
| Lanes: | 1.00 | 1.00 | 0.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Final Sat.: | 1900 | 1900 | 0 | 3502 | 1900 | 1615 | 1805 | 1900 | 0 | 1900 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.01 | 0.00 | 0.16 | 0.01 | 0.23 | 0.25 | 0.02 | 0.00 | 0.00 | 0.07 | 0.12 |
| Crit Moves: | | **** | | **** | | | **** | | | | **** | |
| Green/Cycle: | 0.00 | 0.02 | 0.00 | 0.30 | 0.31 | 0.78 | 0.46 | 0.59 | 0.00 | 0.00 | 0.12 | 0.42 |
| Volume/Cap: | 0.00 | 0.53 | 0.00 | 0.53 | 0.05 | 0.30 | 0.53 | 0.04 | 0.00 | 0.00 | 0.53 | 0.29 |
| Delay/Veh: | 0.0 | 75.4 | 0.0 | 35.8 | 28.7 | 4.1 | 23.7 | 10.5 | 0.0 | 0.0 | 51.6 | 23.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 75.4 | 0.0 | 35.8 | 28.7 | 4.1 | 23.7 | 10.5 | 0.0 | 0.0 | 51.6 | 23.0 |
| LOS by Move: | A | E | A | D | C | A | C | B | A | A | D | C |
| HCM2kAvgQ: | 0 | 1 | 0 | 8 | 1 | 4 | 12 | 1 | 0 | 0 | 5 | 5 |

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 SR 87 & Milligan Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.649 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 17.0 |
| Optimal Cycle: | 47 | Level Of Service: | B |

| Street Name: | State Route 87 | | | | | | Milligan Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 | 2 0 1 | 1 | 0 | 2 0 0 | 0 | 0 | 0 0 0 | 1 | 0 | 0 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 1145 | 40 | 280 | 1467 | 0 | 0 | 0 | 0 | 120 | 0 | 100 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 1145 | 40 | 280 | 1467 | 0 | 0 | 0 | 0 | 120 | 0 | 100 |
| Added Vol: | 0 | 5 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 1150 | 40 | 280 | 1486 | 0 | 0 | 0 | 0 | 120 | 0 | 100 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 1278 | 44 | 311 | 1651 | 0 | 0 | 0 | 0 | 133 | 0 | 111 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 1278 | 44 | 311 | 1651 | 0 | 0 | 0 | 0 | 133 | 0 | 111 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 1278 | 44 | 311 | 1651 | 0 | 0 | 0 | 0 | 133 | 0 | 111 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.35 | 0.03 | 0.17 | 0.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.07 |
| Crit Moves: | | **** | | **** | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.55 | 0.55 | 0.27 | 0.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.11 |
| Volume/Cap: | 0.00 | 0.65 | 0.05 | 0.65 | 0.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.65 | 0.00 | 0.60 |
| Delay/Veh: | 0.0 | 20.0 | 12.8 | 42.2 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 58.0 | 0.0 | 56.2 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 20.0 | 12.8 | 42.2 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 58.0 | 0.0 | 56.2 |
| LOS by Move: | A | B | B | D | A | A | A | A | A | E | A | E |
| HCM2kAvgQ: | 0 | 17 | 1 | 11 | 11 | 0 | 0 | 0 | 0 | 6 | 0 | 5 |





Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 SR 87 & Milligan Rd.

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.653 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 17.0 |
| Optimal Cycle: | 47 | Level Of Service: | B |

| Street Name: | State Route 87 | | | | | | Milligan Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 | 2 0 1 | 1 | 0 | 2 0 0 | 0 | 0 | 0 0 0 | 1 | 0 | 0 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 1145 | 40 | 280 | 1467 | 0 | 0 | 0 | 0 | 120 | 0 | 100 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 1145 | 40 | 280 | 1467 | 0 | 0 | 0 | 0 | 120 | 0 | 100 |
| Added Vol: | 0 | 16 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 1161 | 40 | 280 | 1520 | 0 | 0 | 0 | 0 | 120 | 0 | 100 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 1290 | 44 | 311 | 1689 | 0 | 0 | 0 | 0 | 133 | 0 | 111 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 1290 | 44 | 311 | 1689 | 0 | 0 | 0 | 0 | 133 | 0 | 111 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 1290 | 44 | 311 | 1689 | 0 | 0 | 0 | 0 | 133 | 0 | 111 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.36 | 0.03 | 0.17 | 0.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.07 |
| Crit Moves: | | **** | | **** | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.55 | 0.55 | 0.26 | 0.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.11 |
| Volume/Cap: | 0.00 | 0.65 | 0.05 | 0.65 | 0.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.65 | 0.00 | 0.61 |
| Delay/Veh: | 0.0 | 19.9 | 12.6 | 42.5 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 58.3 | 0.0 | 56.5 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 19.9 | 12.6 | 42.5 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 58.3 | 0.0 | 56.5 |
| LOS by Move: | A | B | B | D | A | A | A | A | A | E | A | E |
| HCM2kAvgQ: | 0 | 17 | 1 | 11 | 12 | 0 | 0 | 0 | 0 | 6 | 0 | 5 |

Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Loop Rd. & Date St.

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[ 0.0]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 0 | 0 1 | | 0 0 0 | 0 0 | | 0 0 1 | 1 0 | | 1 0 2 | 0 0 | |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 0 | 0 | 84 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 0 | 0 | 84 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | 0 | 0 | 93 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | 0 | 0 | 93 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 6.8 | xxxx | | 6.9 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| FollowUpTim: | 3.5 | xxxx | | 3.3 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 227 | xxxx | 90 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Potent Cap.: | 747 | xxxx | 956 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Move Cap.: | 747 | xxxx | 956 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Volume/Cap: | 0.00 | xxxx | 0.00 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | * | * | * | * | * | * | * | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | * | | | * | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Loop Rd. & Date St.

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[ 12.8]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 0 | 0 1 | | 0 0 0 | 0 0 | | 0 0 1 | 1 0 | | 1 0 2 | 0 0 | |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 35 | 0 | 2 | 0 | 0 | 0 | 0 | 305 | 142 | 8 | 143 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 35 | 0 | 2 | 0 | 0 | 0 | 0 | 305 | 142 | 8 | 143 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 39 | 0 | 2 | 0 | 0 | 0 | 0 | 339 | 158 | 9 | 159 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 39 | 0 | 2 | 0 | 0 | 0 | 0 | 339 | 158 | 9 | 159 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 6.8 | xxxx | | 6.9 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 4.1 | xxxx xxxxx |
| FollowUpTim: | 3.5 | xxxx | | 3.3 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 2.2 | xxxx xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 515 | xxxx | 248 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 497 | xxxx | xxxxx |
| Potent Cap.: | 494 | xxxx | 758 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 1078 | xxxx | xxxxx |
| Move Cap.: | 491 | xxxx | 758 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 1078 | xxxx | xxxxx |
| Volume/Cap: | 0.08 | xxxx | 0.00 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 0.01 | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.3 | xxxx | 0.0 | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | 0.0 | xxxx | xxxxx |
| Control Del: | 13.0 | xxxx | 9.8 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 8.4 | xxxx | xxxxx |
| LOS by Move: | B | * | A | * | * | * | * | * | * | A | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | * | * | * | * | * |
| ApproachDel: | 12.8 | | | xxxxxx | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | B | | | * | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Loop Rd. & Date St.

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: A[ 9.4]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 | 0 | 1 0 | 1 0 | 0 | 1 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 | 12 | 0 | 42 | 151 | 12 | 0 | 0 | 41 | 41 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 0 | 0 | 12 | 0 | 42 | 151 | 12 | 0 | 0 | 41 | 41 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 0 | 0 | 13 | 0 | 47 | 168 | 13 | 0 | 0 | 46 | 46 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 0 | 0 | 13 | 0 | 47 | 168 | 13 | 0 | 0 | 46 | 46 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.5 | 6.5 | 6.9 | 6.8 | 6.5 | 6.9 | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 372 | 440 | 7 | 411 | 417 | 46 | 91 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Potent Cap.: | 565 | 514 | 1080 | 574 | 529 | 1021 | 1517 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Move Cap.: | 493 | 457 | 1080 | 526 | 471 | 1021 | 1517 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.05 | 0.11 | xxxx | xxxx | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | 0.1 | xxxx | xxxxx | 0.4 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | 12.0 | xxxx | xxxxx | 7.7 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | B | * | * | A | * | * | * | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | 0 | xxxx | xxxx | 1021 | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 0.1 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 8.7 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | A | * | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | 9.4 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | * | | | A | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Loop Rd. & Date St.

Average Delay (sec/veh): 4.5 Worst Case Level Of Service: B[ 11.6]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 | 0 | 1 0 | 1 0 | 0 | 1 0 | 1 0 | 1 | 1 0 | 1 0 | 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 6 | 0 | 6 | 12 | 0 | 42 | 151 | 52 | 24 | 25 | 98 | 41 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 6 | 0 | 6 | 12 | 0 | 42 | 151 | 52 | 24 | 25 | 98 | 41 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 7 | 0 | 7 | 13 | 0 | 47 | 168 | 58 | 27 | 28 | 109 | 46 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 7 | 0 | 7 | 13 | 0 | 47 | 168 | 58 | 27 | 28 | 109 | 46 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 517 | 617 | 42 | 552 | 607 | 77 | 154 | xxxx | xxxxx | 84 | xxxx | xxxxx |
| Potent Cap.: | 446 | 408 | 1026 | 421 | 413 | 975 | 1438 | xxxx | xxxxx | 1525 | xxxx | xxxxx |
| Move Cap.: | 381 | 354 | 1026 | 376 | 359 | 975 | 1438 | xxxx | xxxxx | 1525 | xxxx | xxxxx |
| Volume/Cap: | 0.02 | 0.00 | 0.01 | 0.04 | 0.00 | 0.05 | 0.12 | xxxx | xxxx | 0.02 | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.1 | xxxx | xxxxx | 0.1 | xxxx | xxxxx | 0.4 | xxxx | xxxxx | 0.1 | xxxx | xxxxx |
| Control Del: | 14.6 | xxxx | xxxxx | 14.9 | xxxx | xxxxx | 7.8 | xxxx | xxxxx | 7.4 | xxxx | xxxxx |
| LOS by Move: | B | * | * | B | * | * | A | * | * | A | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | 1026 | xxxx | xxxx | 975 | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | 0.0 | xxxxx | xxxx | 0.2 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | 8.5 | xxxxx | xxxx | 8.9 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | A | * | * | A | * | * | * | * | * | * |
| ApproachDel: | 11.6 | | | 10.2 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | B | | | B | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
AM Peak Hour
2030 AM - Full Buildout

## Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

| Node | Intersection | NB | SB | EB | WB |
|---|---|---|---|---|---|
| 1 | Sunshine Blvd. & SR 84 | 201010 | 101010 | 102010 | 101100 |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 102000 | 001100 | 000001 | 000000 |
| 3 | Sunshine Blvd. & Date St. | 102010 | 101100 | 100100 | 201010 |
| 4 | Sunshine Blvd. & I-10 WB Ramps | 102000 | 002010 | 000000 | 100011 |
| 5 | Sunshine Blvd. & I-10 EB Ramps | 002010 | 102000 | 100011 | 000000 |
| 6 | SR 87 & SR 84 | 100100 | 201010 | 100100 | 101010 |
| 7 | SR 87 & Milligan Rd. | 002010 | 102000 | 000000 | 100010 |
| 8 | Loop Rd. & Date St. | 100010 | 000000 | 001100 | 102000 |
| 9 | Loop Rd. & Date St. | 100100 | 100100 | 101100 | 101100 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

## Scenario Report

| | |
|---|---|
| Scenario: | 2030 PM |
| Command: | PM |
| Volume: | PM |
| Geometry: | Existing |
| Impact Fee: | Default Impact Fee |
| Trip Generation: | PM |
| Trip Distribution: | Default Trip Distribution |
| Paths: | Default Path |
| Routes: | Default Route |
| Configuration: | Default Configuration |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Impact Analysis Report
Level Of Service

| Intersection | Base LOS | Del/ Veh | V/ C | Future LOS | Del/ Veh | V/ C | Change in |
|---|---|---|---|---|---|---|---|
| # 1 Sunshine Blvd. & SR 84 | C | 28.4 | 0.501 | C | 28.3 | 0.544 | -0.088 D/V |
| # 2 Sunshine Blvd. & Alsdorf Rd. | E | 49.9 | 0.594 | F | 114.9 | 0.866 | +65.033 D/V |
| # 3 Sunshine Blvd. & Date St. | B | 15.5 | 0.473 | C | 23.7 | 0.638 | + 8.257 D/V |
| # 4 Sunshine Blvd. & I-10 WB Ramps | C | 24.0 | 0.439 | C | 30.4 | 0.644 | + 6.348 D/V |
| # 5 Sunshine Blvd. & I-10 EB Ramps | B | 16.8 | 0.371 | C | 28.9 | 0.629 | +12.178 D/V |
| # 6 SR 87 & SR 84 | C | 26.2 | 0.575 | C | 26.7 | 0.600 | + 0.469 D/V |
| # 7 SR 87 & Milligan Rd. | C | 31.9 | 0.923 | C | 33.5 | 0.943 | + 1.598 D/V |
| # 8 Loop Rd. & Date St. | | 0.0 | 0.000 | B | 13.4 | 0.276 | +13.438 D/V |
| # 9 Loop Rd. & Date St. | | 0.0 | 0.000 | B | 10.8 | 0.137 | +10.770 D/V |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 Sunshine Blvd. & SR 84

Cycle (sec): 120 Critical Vol./Cap.(X): 0.513
Loss Time (sec): 12 Average Delay (sec/veh): 28.5
Optimal Cycle: 42 Level Of Service: C

| Street Name: | Sunshine Boulevard | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | |
| Rights: | Ovl | | | Include | | | Ovl | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 2 | 0 1 | 0 1 | 1 | 0 1 | 0 1 | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 467 | 164 | 211 | 33 | 22 | 150 | 195 | 73 | 413 | 66 | 197 | 54 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 467 | 164 | 211 | 33 | 22 | 150 | 195 | 73 | 413 | 66 | 197 | 54 |
| Added Vol: | 16 | 5 | 0 | 1 | 3 | 0 | 0 | 9 | 9 | 0 | 16 | 1 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 483 | 169 | 211 | 34 | 25 | 150 | 195 | 82 | 422 | 66 | 213 | 55 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 537 | 188 | 234 | 38 | 28 | 167 | 217 | 91 | 469 | 73 | 237 | 61 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 537 | 188 | 234 | 38 | 28 | 167 | 217 | 91 | 469 | 73 | 237 | 61 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 537 | 188 | 234 | 38 | 28 | 167 | 217 | 91 | 469 | 73 | 237 | 61 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.95 | 0.85 | 0.95 | 0.92 | 0.92 |
| Lanes: | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.59 | 0.41 |
| Final Sat.: | 3502 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3610 | 1615 | 1805 | 2780 | 718 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.15 | 0.10 | 0.15 | 0.02 | 0.01 | 0.10 | 0.12 | 0.03 | 0.29 | 0.04 | 0.09 | 0.09 |
| Crit Moves: | **** | | | | | **** | **** | | | | **** | |
| Green/Cycle: | 0.30 | 0.42 | 0.51 | 0.53 | 0.20 | 0.20 | 0.42 | 0.31 | 0.61 | 0.26 | 0.17 | 0.17 |
| Volume/Cap: | 0.51 | 0.24 | 0.29 | 0.06 | 0.07 | 0.51 | 0.40 | 0.08 | 0.48 | 0.19 | 0.51 | 0.51 |
| Delay/Veh: | 35.3 | 22.8 | 17.2 | 14.3 | 38.9 | 44.1 | 23.5 | 29.5 | 13.4 | 34.7 | 46.4 | 46.4 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 35.3 | 22.8 | 17.2 | 14.3 | 38.9 | 44.1 | 23.5 | 29.5 | 13.4 | 34.7 | 46.4 | 46.4 |
| LOS by Move: | D | C | B | B | D | D | C | C | B | C | D | D |
| HCM2kAvgQ: | 8 | 4 | 5 | 1 | 1 | 6 | 6 | 1 | 10 | 2 | 6 | 6 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Sunshine Blvd. & SR 84

Cycle (sec): 120 Critical Vol./Cap.(X): 0.544
Loss Time (sec): 12 Average Delay (sec/veh): 28.3
Optimal Cycle: 45 Level Of Service: C

| Street Name: | Sunshine Boulevard | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | |
| Rights: | Ovl | | | Include | | | Ovl | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 2 | 0 1 | 0 1 | 1 | 0 1 | 0 1 | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 467 | 164 | 211 | 33 | 22 | 150 | 195 | 73 | 413 | 66 | 197 | 54 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 467 | 164 | 211 | 33 | 22 | 150 | 195 | 73 | 413 | 66 | 197 | 54 |
| Added Vol: | 97 | 57 | 44 | 1 | 43 | 0 | 0 | 11 | 52 | 24 | 22 | 2 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 564 | 221 | 255 | 34 | 65 | 150 | 195 | 84 | 465 | 90 | 219 | 56 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 627 | 246 | 283 | 38 | 72 | 167 | 217 | 93 | 517 | 100 | 243 | 62 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 627 | 246 | 283 | 38 | 72 | 167 | 217 | 93 | 517 | 100 | 243 | 62 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 627 | 246 | 283 | 38 | 72 | 167 | 217 | 93 | 517 | 100 | 243 | 62 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.92 | 1.00 | 0.85 | 0.95 | 1.00 | 0.85 | 0.95 | 0.95 | 0.85 | 0.95 | 0.92 | 0.92 |
| Lanes: | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.00 | 1.00 | 1.59 | 0.41 |
| Final Sat.: | 3502 | 1900 | 1615 | 1805 | 1900 | 1615 | 1805 | 3610 | 1615 | 1805 | 2786 | 712 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.18 | 0.13 | 0.18 | 0.02 | 0.04 | 0.10 | 0.12 | 0.03 | 0.32 | 0.06 | 0.09 | 0.09 |
| Crit Moves: | **** | | | | | **** | **** | | | | **** | |
| Green/Cycle: | 0.33 | 0.45 | 0.55 | 0.54 | 0.19 | 0.19 | 0.41 | 0.27 | 0.60 | 0.27 | 0.16 | 0.16 |
| Volume/Cap: | 0.54 | 0.29 | 0.32 | 0.07 | 0.20 | 0.54 | 0.43 | 0.09 | 0.53 | 0.25 | 0.54 | 0.54 |
| Delay/Veh: | 33.4 | 21.3 | 14.7 | 13.5 | 41.2 | 45.9 | 25.1 | 32.5 | 14.5 | 34.3 | 47.4 | 47.4 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 33.4 | 21.3 | 14.7 | 13.5 | 41.2 | 45.9 | 25.1 | 32.5 | 14.5 | 34.3 | 47.4 | 47.4 |
| LOS by Move: | C | C | B | B | D | D | C | C | B | C | D | D |
| HCM2kAvgQ: | 9 | 5 | 5 | 1 | 2 | 6 | 6 | 1 | 11 | 3 | 6 | 6 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Sunshine Blvd. & Alsdorf Rd.

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: F[ 53.8]

| Street Name: | Sunshine Boulevard | | | | | | Alsdorf Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 | 2 | 0 0 | 0 | 0 1 | 1 0 | 0 | 0 1! | 0 0 | 0 | 0 0 | 0 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 120 | 632 | 0 | 0 | 495 | 15 | 90 | 0 | 20 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 120 | 632 | 0 | 0 | 495 | 15 | 90 | 0 | 20 | 0 | 0 | 0 |
| Added Vol: | 0 | 21 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 120 | 653 | 0 | 0 | 507 | 15 | 90 | 0 | 20 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 133 | 726 | 0 | 0 | 563 | 17 | 100 | 0 | 22 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 133 | 726 | 0 | 0 | 563 | 17 | 100 | 0 | 22 | 0 | 0 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.8 | 6.5 | 6.9 | xxxxx | xxxx | xxxxx |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 580 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 1201 | 1564 | 290 | xxxx | xxxx | xxxxx |
| Potent Cap.: | 1004 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 180 | 113 | 713 | xxxx | xxxx | xxxxx |
| Move Cap.: | 1004 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 162 | 98 | 713 | xxxx | xxxx | xxxxx |
| Volume/Cap: | 0.13 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.62 | 0.00 | 0.03 | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.5 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | 9.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | A | * | * | * | * | * | * | * | * | * | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 188 | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 3.8 | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 53.8 | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | F | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 53.8 | | | xxxxxx | | |
| ApproachLOS: | * | | | * | | | F | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Sunshine Blvd. & Alsdorf Rd.

Average Delay (sec/veh): 8.2 Worst Case Level Of Service: F[114.9]

| Street Name: | Sunshine Boulevard | | | | | | | | | Alsdorf Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | | | | |
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | | | | |
| Rights: | Include | | | Include | | | Include | | | Include | | | | | |
| Lanes: | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1! | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | |
| Base Vol: | 120 | 632 | 0 | 0 | 495 | 15 | 90 | 0 | 20 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Initial Bse: | 120 | 632 | 0 | 0 | 495 | 15 | 90 | 0 | 20 | 0 | 0 | 0 | | | |
| Added Vol: | 0 | 197 | 0 | 0 | 119 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 120 | 829 | 0 | 0 | 614 | 15 | 90 | 0 | 20 | 0 | 0 | 0 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | |
| PHF Volume: | 133 | 921 | 0 | 0 | 682 | 17 | 100 | 0 | 22 | 0 | 0 | 0 | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| FinalVolume: | 133 | 921 | 0 | 0 | 682 | 17 | 100 | 0 | 22 | 0 | 0 | 0 | | | |
| Critical Gap Module: | | | | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 6.8 | 6.5 | 6.9 | xxxxx | xxxx | xxxxx | | | |
| FollowUpTim: | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | xxxxx | xxxx | xxxxx | | | |
| Capacity Module: | | | | | | | | | | | | | | | |
| Cnflict Vol: | 699 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 1418 | 1878 | 349 | xxxx | xxxx | xxxxx | | | |
| Potent Cap.: | 907 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 130 | 72 | 653 | xxxx | xxxx | xxxxx | | | |
| Move Cap.: | 907 | xxxx | xxxxx | xxxx | xxxx | xxxxx | 116 | 62 | 653 | xxxx | xxxx | xxxxx | | | |
| Volume/Cap: | 0.15 | xxxx | xxxx | xxxx | xxxx | xxxx | 0.87 | 0.00 | 0.03 | xxxx | xxxx | xxxx | | | |
| Level Of Service Module: | | | | | | | | | | | | | | | |
| 2Way95thQ: | 0.5 | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | | | |
| Control Del: | 9.7 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | | | |
| LOS by Move: | A | * | * | * | * | * | * | * | * | * | * | * | | | |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | | | |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 136 | xxxxx | xxxx | xxxx | xxxxx | | | |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 6.0 | xxxxx | xxxxx | xxxx | xxxxx | | | |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 115 | xxxxx | xxxxx | xxxx | xxxxx | | | |
| Shared LOS: | * | * | * | * | * | * | * | F | * | * | * | * | | | |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 114.9 | | | xxxxxx | | | | | |
| ApproachLOS: | * | | | * | | | F | | | * | | | | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Sunshine Blvd. & Date St.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.490
Loss Time (sec): 12 Average Delay (sec/veh): 17.1
Optimal Cycle: 40 Level Of Service: B

| Street Name: | Sunshine Boulevard | | | | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | | | | |
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | | Protected | | | | | |
| Rights: | Ovl | | | Include | | | Include | | | Include | | | | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | | |
| Lanes: | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Volume Module: | | | | | | | | | | | | | | | |
| Base Vol: | 215 | 692 | 0 | 0 | 536 | 50 | 165 | 0 | 20 | 0 | 0 | 0 | | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Initial Bse: | 215 | 692 | 0 | 0 | 536 | 50 | 165 | 0 | 20 | 0 | 0 | 0 | | | |
| Added Vol: | 0 | 0 | 127 | 12 | 0 | 0 | 0 | 0 | 0 | 227 | 0 | 21 | | | |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Initial Fut: | 215 | 692 | 127 | 12 | 536 | 50 | 165 | 0 | 20 | 227 | 0 | 21 | | | |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | |
| PHF Volume: | 239 | 769 | 141 | 13 | 596 | 56 | 183 | 0 | 22 | 252 | 0 | 23 | | | |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Reduced Vol: | 239 | 769 | 141 | 13 | 596 | 56 | 183 | 0 | 22 | 252 | 0 | 23 | | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| FinalVolume: | 239 | 769 | 141 | 13 | 596 | 56 | 183 | 0 | 22 | 252 | 0 | 23 | | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | | | |
| Adjustment: | 0.95 | 0.95 | 0.85 | 0.95 | 0.94 | 0.94 | 0.95 | 1.00 | 0.85 | 0.92 | 1.00 | 0.85 | | | |
| Lanes: | 1.00 | 2.00 | 1.00 | 1.00 | 1.83 | 0.17 | 1.00 | 0.00 | 1.00 | 2.00 | 1.00 | 1.00 | | | |
| Final Sat.: | 1805 | 3610 | 1615 | 1805 | 3259 | 304 | 1805 | 0 | 1615 | 3502 | 1900 | 1615 | | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.21 | 0.09 | 0.01 | 0.18 | 0.18 | 0.10 | 0.00 | 0.01 | 0.07 | 0.00 | 0.01 | | | |
| Crit Moves: | **** | | | | **** | | **** | | | | | **** | | | |
| Green/Cycle: | 0.67 | 0.62 | 0.82 | 0.39 | 0.37 | 0.37 | 0.44 | 0.00 | 0.04 | 0.20 | 0.00 | 0.20 | | | |
| Volume/Cap: | 0.35 | 0.34 | 0.11 | 0.05 | 0.49 | 0.49 | 0.26 | 0.00 | 0.36 | 0.36 | 0.00 | 0.07 | | | |
| Delay/Veh: | 8.1 | 9.2 | 1.8 | 18.5 | 24.3 | 24.3 | 17.9 | 0.0 | 50.5 | 34.9 | 0.0 | 32.7 | | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| AdjDel/Veh: | 8.1 | 9.2 | 1.8 | 18.5 | 24.3 | 24.3 | 17.9 | 0.0 | 50.5 | 34.9 | 0.0 | 32.7 | | | |
| LOS by Move: | A | A | A | B | C | C | B | A | D | C | A | C | | | |
| HCM2kAvgQ: | 3 | 6 | 1 | 0 | 8 | 8 | 4 | 0 | 1 | 4 | 0 | 1 | | | |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Sunshine Blvd. & Date St.

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.638 |
| Loss Time (sec): | 12 | Average Delay (sec/veh): | 23.7 |
| Optimal Cycle: | 52 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Prot+Permit | | | Prot+Permit | | | Prot+Permit | | | Protected | | |
| Rights: | | Ovl | | | Include | | | Include | | | Include | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 1 | 1 | 0 1 | 1 0 | 1 | 0 0 | 1 0 | 2 | 0 1 | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 215 | 692 | 0 | 0 | 536 | 50 | 165 | 0 | 20 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 215 | 692 | 0 | 0 | 536 | 50 | 165 | 0 | 20 | 0 | 0 | 0 |
| Added Vol: | 0 | 53 | 288 | 70 | 49 | 0 | 0 | 0 | 0 | 685 | 0 | 144 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 215 | 745 | 288 | 70 | 585 | 50 | 165 | 0 | 20 | 685 | 0 | 144 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 239 | 828 | 320 | 78 | 650 | 56 | 183 | 0 | 22 | 761 | 0 | 160 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 239 | 828 | 320 | 78 | 650 | 56 | 183 | 0 | 22 | 761 | 0 | 160 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 239 | 828 | 320 | 78 | 650 | 56 | 183 | 0 | 22 | 761 | 0 | 160 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 0.85 | 0.95 | 0.94 | 0.94 | 0.95 | 1.00 | 0.85 | 0.92 | 1.00 | 0.85 |
| Lanes: | 1.00 | 2.00 | 1.00 | 1.00 | 1.84 | 0.16 | 1.00 | 0.00 | 1.00 | 2.00 | 1.00 | 1.00 |
| Final Sat.: | 1805 | 3610 | 1615 | 1805 | 3286 | 281 | 1805 | 0 | 1615 | 3502 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.13 | 0.23 | 0.20 | 0.04 | 0.20 | 0.20 | 0.10 | 0.00 | 0.01 | 0.22 | 0.00 | 0.10 |
| Crit Moves: | **** | | | | **** | | | | **** | **** | | |
| Green/Cycle: | 0.55 | 0.44 | 0.78 | 0.39 | 0.31 | 0.31 | 0.39 | 0.00 | 0.18 | 0.34 | 0.00 | 0.18 |
| Volume/Cap: | 0.49 | 0.53 | 0.26 | 0.24 | 0.64 | 0.64 | 0.29 | 0.00 | 0.08 | 0.64 | 0.00 | 0.55 |
| Delay/Veh: | 15.0 | 21.0 | 3.2 | 19.7 | 30.9 | 30.9 | 20.8 | 0.0 | 33.9 | 28.9 | 0.0 | 39.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 15.0 | 21.0 | 3.2 | 19.7 | 30.9 | 30.9 | 20.8 | 0.0 | 33.9 | 28.9 | 0.0 | 39.8 |
| LOS by Move: | B | C | A | B | C | C | C | A | C | C | A | D |
| HCM2kAvgQ: | 5 | 10 | 3 | 1 | 10 | 10 | 4 | 0 | 1 | 11 | 0 | 5 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 Sunshine Blvd. & I-10 WB Ramps

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.493 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 28.0 |
| Optimal Cycle: | 34 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | I-10 Westbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | | Include | | | Include | | | Include | | | Include | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 0 | 0 | 0 2 | 0 1 | 0 | 0 0 | 0 0 | 1 | 0 1! | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 330 | 428 | 0 | 0 | 89 | 11 | 0 | 0 | 0 | 480 | 0 | 181 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 330 | 428 | 0 | 0 | 89 | 11 | 0 | 0 | 0 | 480 | 0 | 181 |
| Added Vol: | 0 | 57 | 0 | 0 | 132 | 95 | 0 | 0 | 0 | 0 | 0 | 71 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 330 | 485 | 0 | 0 | 221 | 106 | 0 | 0 | 0 | 480 | 0 | 252 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 367 | 539 | 0 | 0 | 246 | 118 | 0 | 0 | 0 | 533 | 0 | 280 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 367 | 539 | 0 | 0 | 246 | 118 | 0 | 0 | 0 | 533 | 0 | 280 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 367 | 539 | 0 | 0 | 246 | 118 | 0 | 0 | 0 | 533 | 0 | 280 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 0.85 | 1.00 | 1.00 | 1.00 | 0.92 | 1.00 | 0.92 |
| Lanes: | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.66 | 0.00 | 1.34 |
| Final Sat.: | 1805 | 3610 | 0 | 0 | 3610 | 1615 | 0 | 0 | 0 | 2887 | 0 | 2344 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.15 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.12 |
| Crit Moves: | **** | | | | **** | | | | | **** | | |
| Green/Cycle: | 0.41 | 0.55 | 0.00 | 0.00 | 0.14 | 0.14 | 0.00 | 0.00 | 0.00 | 0.37 | 0.00 | 0.37 |
| Volume/Cap: | 0.49 | 0.27 | 0.00 | 0.00 | 0.49 | 0.53 | 0.00 | 0.00 | 0.00 | 0.49 | 0.00 | 0.32 |
| Delay/Veh: | 26.5 | 14.3 | 0.0 | 0.0 | 48.6 | 50.5 | 0.0 | 0.0 | 0.0 | 29.0 | 0.0 | 26.7 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 26.5 | 14.3 | 0.0 | 0.0 | 48.6 | 50.5 | 0.0 | 0.0 | 0.0 | 29.0 | 0.0 | 26.7 |
| LOS by Move: | C | B | A | A | D | D | A | A | A | C | A | C |
| HCM2kAvgQ: | 10 | 5 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 9 | 0 | 5 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Sunshine Blvd. & I-10 WB Ramps

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.644 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 30.4 |
| Optimal Cycle: | 46 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | I-10 Westbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 2 | 0 0 | 0 | 0 2 | 0 1 | 0 | 0 0 | 0 0 | 1 | 0 1! | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 330 | 428 | 0 | 0 | 89 | 11 | 0 | 0 | 0 | 480 | 0 | 181 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 330 | 428 | 0 | 0 | 89 | 11 | 0 | 0 | 0 | 480 | 0 | 181 |
| Added Vol: | 0 | 176 | 0 | 0 | 446 | 279 | 0 | 0 | 0 | 0 | 0 | 149 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 330 | 604 | 0 | 0 | 535 | 290 | 0 | 0 | 0 | 480 | 0 | 330 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 367 | 671 | 0 | 0 | 594 | 322 | 0 | 0 | 0 | 533 | 0 | 367 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 367 | 671 | 0 | 0 | 594 | 322 | 0 | 0 | 0 | 533 | 0 | 367 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 367 | 671 | 0 | 0 | 594 | 322 | 0 | 0 | 0 | 533 | 0 | 367 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 0.85 | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 0.91 |
| Lanes: | 1.00 | 2.00 | 0.00 | 0.00 | 2.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.59 | 0.00 | 1.41 |
| Final Sat.: | 1805 | 3610 | 0 | 0 | 3610 | 1615 | 0 | 0 | 0 | 2759 | 0 | 2438 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.20 | 0.19 | 0.00 | 0.00 | 0.16 | 0.20 | 0.00 | 0.00 | 0.00 | 0.19 | 0.00 | 0.15 |
| Crit Moves: | **** | | | | | **** | | | | **** | | |
| Green/Cycle: | 0.32 | 0.62 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.00 | 0.00 | 0.30 | 0.00 | 0.30 |
| Volume/Cap: | 0.64 | 0.30 | 0.00 | 0.00 | 0.53 | 0.64 | 0.00 | 0.00 | 0.00 | 0.64 | 0.00 | 0.50 |
| Delay/Veh: | 37.8 | 10.4 | 0.0 | 0.0 | 34.7 | 38.6 | 0.0 | 0.0 | 0.0 | 37.5 | 0.0 | 34.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 37.8 | 10.4 | 0.0 | 0.0 | 34.7 | 38.6 | 0.0 | 0.0 | 0.0 | 37.5 | 0.0 | 34.8 |
| LOS by Move: | D | B | A | A | C | D | A | A | A | D | A | C |
| HCM2kAvgQ: | 11 | 6 | 0 | 0 | 10 | 11 | 0 | 0 | 0 | 11 | 0 | 8 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Sunshine Blvd. & I-10 EB Ramps

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.460 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 22.8 |
| Optimal Cycle: | 32 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | I-10 Eastbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 2 | 0 1 | 1 | 0 2 | 0 0 | 1 | 0 1! | 0 1 | 0 | 0 0 | 0 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 652 | 315 | 7 | 562 | 0 | 106 | 0 | 320 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 652 | 315 | 7 | 562 | 0 | 106 | 0 | 320 | 0 | 0 | 0 |
| Added Vol: | 0 | 4 | 0 | 126 | 6 | 0 | 53 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 656 | 315 | 133 | 568 | 0 | 159 | 0 | 320 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 729 | 350 | 148 | 631 | 0 | 177 | 0 | 356 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 729 | 350 | 148 | 631 | 0 | 177 | 0 | 356 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 729 | 350 | 148 | 631 | 0 | 177 | 0 | 356 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 0.89 | 1.00 | 0.89 | 1.00 | 1.00 | 1.00 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 1.33 | 0.00 | 1.67 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 2241 | 0 | 2807 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.20 | 0.22 | 0.08 | 0.17 | 0.00 | 0.08 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | | **** | **** | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.47 | 0.47 | 0.18 | 0.65 | 0.00 | 0.28 | 0.00 | 0.28 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.43 | 0.46 | 0.46 | 0.27 | 0.00 | 0.29 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 21.2 | 21.8 | 45.2 | 9.0 | 0.0 | 34.3 | 0.0 | 36.3 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 21.2 | 21.8 | 45.2 | 9.0 | 0.0 | 34.3 | 0.0 | 36.3 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | C | C | D | A | A | C | A | D | A | A | A |
| HCM2kAvgQ: | 0 | 9 | 9 | 5 | 5 | 0 | 4 | 0 | 7 | 0 | 0 | 0 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Sunshine Blvd. & I-10 EB Ramps

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.629 |
| Loss Time (sec): | 9 | Average Delay (sec/veh): | 28.9 |
| Optimal Cycle: | 45 | Level Of Service: | C |

| Street Name: | Sunshine Boulevard | | | | | | I-10 Eastbound Ramps | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 | 2 0 1 | 1 | 0 | 2 0 0 | 1 | 0 | 1! 0 1 | 0 | 0 | 0 0 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 652 | 315 | 7 | 562 | 0 | 106 | 0 | 320 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 652 | 315 | 7 | 562 | 0 | 106 | 0 | 320 | 0 | 0 | 0 |
| Added Vol: | 0 | 62 | 0 | 368 | 78 | 0 | 114 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 714 | 315 | 375 | 640 | 0 | 220 | 0 | 320 | 0 | 0 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 793 | 350 | 417 | 711 | 0 | 244 | 0 | 356 | 0 | 0 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 793 | 350 | 417 | 711 | 0 | 244 | 0 | 356 | 0 | 0 | 0 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 793 | 350 | 417 | 711 | 0 | 244 | 0 | 356 | 0 | 0 | 0 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 0.89 | 1.00 | 0.89 | 1.00 | 1.00 | 1.00 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 1.41 | 0.00 | 1.59 | 0.00 | 0.00 | 0.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 2387 | 0 | 2701 | 0 | 0 | 0 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.22 | 0.22 | 0.23 | 0.20 | 0.00 | 0.10 | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 |
| Crit Moves: | | **** | | **** | | | | | **** | | | |
| Green/Cycle: | 0.00 | 0.35 | 0.35 | 0.37 | 0.72 | 0.00 | 0.21 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| Volume/Cap: | 0.00 | 0.63 | 0.62 | 0.63 | 0.28 | 0.00 | 0.49 | 0.00 | 0.63 | 0.00 | 0.00 | 0.00 |
| Delay/Veh: | 0.0 | 33.6 | 34.6 | 33.2 | 6.1 | 0.0 | 42.1 | 0.0 | 44.6 | 0.0 | 0.0 | 0.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 33.6 | 34.6 | 33.2 | 6.1 | 0.0 | 42.1 | 0.0 | 44.6 | 0.0 | 0.0 | 0.0 |
| LOS by Move: | A | C | C | C | A | A | D | A | D | A | A | A |
| HCM2kAvgQ: | 0 | 13 | 11 | 12 | 5 | 0 | 6 | 0 | 8 | 0 | 0 | 0 |





Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 SR 87 & SR 84

| | | | |
|---|---|---|---|
| Cycle (sec): | 120 | Critical Vol./Cap.(X): | 0.582 |
| Loss Time (sec): | 12 | Average Delay (sec/veh): | 26.4 |
| Optimal Cycle: | 48 | Level Of Service: | C |

| Street Name: | State Route 87 | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Ovl | | | Include | | | Ovl | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 | 0 1 0 | 2 | 0 | 1 0 1 | 1 | 0 | 0 1 0 | 1 | 0 | 1 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 30 | 0 | 315 | 10 | 423 | 219 | 18 | 10 | 0 | 79 | 475 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 30 | 0 | 315 | 10 | 423 | 219 | 18 | 10 | 0 | 79 | 475 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 9 | 16 | 25 | 0 | 0 | 14 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 30 | 0 | 315 | 10 | 432 | 235 | 43 | 10 | 0 | 93 | 475 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 33 | 0 | 350 | 11 | 480 | 261 | 48 | 11 | 0 | 103 | 528 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 33 | 0 | 350 | 11 | 480 | 261 | 48 | 11 | 0 | 103 | 528 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 33 | 0 | 350 | 11 | 480 | 261 | 48 | 11 | 0 | 103 | 528 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.92 | 1.00 | 0.85 | 0.95 | 0.97 | 0.97 | 1.00 | 1.00 | 0.85 |
| Lanes: | 1.00 | 1.00 | 0.00 | 2.00 | 1.00 | 1.00 | 1.00 | 0.81 | 0.19 | 1.00 | 1.00 | 1.00 |
| Final Sat.: | 1900 | 1900 | 0 | 3502 | 1900 | 1615 | 1805 | 1498 | 348 | 1900 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.02 | 0.00 | 0.10 | 0.01 | 0.30 | 0.14 | 0.03 | 0.03 | 0.00 | 0.05 | 0.33 |
| Crit Moves: | **** | | | | | **** | **** | | | | | **** |
| Green/Cycle: | 0.00 | 0.04 | 0.00 | 0.22 | 0.26 | 0.51 | 0.25 | 0.64 | 0.64 | 0.00 | 0.39 | 0.61 |
| Volume/Cap: | 0.00 | 0.45 | 0.00 | 0.45 | 0.02 | 0.58 | 0.58 | 0.05 | 0.05 | 0.00 | 0.14 | 0.53 |
| Delay/Veh: | 0.0 | 60.6 | 0.0 | 40.7 | 32.9 | 21.5 | 41.6 | 8.1 | 8.1 | 0.0 | 23.7 | 14.0 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 60.6 | 0.0 | 40.7 | 32.9 | 21.5 | 41.6 | 8.1 | 8.1 | 0.0 | 23.7 | 14.0 |
| LOS by Move: | A | E | A | D | C | C | D | A | A | A | C | B |
| HCM2kAvgQ: | 0 | 2 | 0 | 6 | 0 | 12 | 9 | 1 | 1 | 0 | 2 | 11 |

Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 SR 87 & SR 84

Cycle (sec): 120 Critical Vol./Cap.(X): 0.600
Loss Time (sec): 12 Average Delay (sec/veh): 26.7
Optimal Cycle: 50 Level Of Service: C

| Street Name: | State Route 87 | | | | | | State Route 84 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Ovl | | | Include | | | Ovl | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 1 | 0 | 0 1 | 0 | 2 | 0 1 | 1 | 0 | 0 1 | 0 | 1 | 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 30 | 0 | 315 | 10 | 423 | 219 | 18 | 10 | 0 | 79 | 475 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 30 | 0 | 315 | 10 | 423 | 219 | 18 | 10 | 0 | 79 | 475 |
| Added Vol: | 0 | 0 | 0 | 0 | 0 | 32 | 61 | 92 | 0 | 0 | 46 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 30 | 0 | 315 | 10 | 455 | 280 | 110 | 10 | 0 | 125 | 475 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 33 | 0 | 350 | 11 | 506 | 311 | 122 | 11 | 0 | 139 | 528 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 33 | 0 | 350 | 11 | 506 | 311 | 122 | 11 | 0 | 139 | 528 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 33 | 0 | 350 | 11 | 506 | 311 | 122 | 11 | 0 | 139 | 528 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 1.00 | 1.00 | 0.92 | 1.00 | 0.85 | 0.95 | 0.99 | 0.99 | 1.00 | 1.00 | 0.85 |
| Lanes: | 1.00 | 1.00 | 0.00 | 2.00 | 1.00 | 1.00 | 1.00 | 0.92 | 0.08 | 1.00 | 1.00 | 1.00 |
| Final Sat.: | 1900 | 1900 | 0 | 3502 | 1900 | 1615 | 1805 | 1721 | 156 | 1900 | 1900 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.02 | 0.00 | 0.10 | 0.01 | 0.31 | 0.17 | 0.07 | 0.07 | 0.00 | 0.07 | 0.33 |
| Crit Moves: | **** | | | | | **** | **** | | | | | **** |
| Green/Cycle: | 0.00 | 0.04 | 0.00 | 0.20 | 0.23 | 0.52 | 0.29 | 0.67 | 0.67 | 0.00 | 0.38 | 0.58 |
| Volume/Cap: | 0.00 | 0.50 | 0.00 | 0.50 | 0.02 | 0.60 | 0.60 | 0.11 | 0.11 | 0.00 | 0.19 | 0.57 |
| Delay/Veh: | 0.0 | 62.7 | 0.0 | 43.3 | 35.4 | 21.2 | 38.8 | 7.3 | 7.3 | 0.0 | 25.2 | 16.7 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 62.7 | 0.0 | 43.3 | 35.4 | 21.2 | 38.8 | 7.3 | 7.3 | 0.0 | 25.2 | 16.7 |
| LOS by Move: | A | E | A | D | D | C | D | A | A | A | C | B |
| HCM2kAvgQ: | 0 | 2 | 0 | 6 | 0 | 13 | 10 | 2 | 2 | 0 | 3 | 12 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 SR 87 & Milligan Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.928
Loss Time (sec): 9 Average Delay (sec/veh): 32.3
Optimal Cycle: 131 Level Of Service: C

| Street Name: | State Route 87 | | | | | | Milligan Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Protected | | | Protected | | | Protected | | | Protected | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Y+R: | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lanes: | 0 | 0 | 2 0 1 | 1 | 0 | 2 0 0 | 0 | 0 | 0 0 0 | 1 | 0 | 0 0 1 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 1649 | 40 | 210 | 1068 | 0 | 0 | 0 | 0 | 45 | 0 | 315 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 1649 | 40 | 210 | 1068 | 0 | 0 | 0 | 0 | 45 | 0 | 315 |
| Added Vol: | 0 | 16 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 1665 | 40 | 210 | 1077 | 0 | 0 | 0 | 0 | 45 | 0 | 315 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 1850 | 44 | 233 | 1197 | 0 | 0 | 0 | 0 | 50 | 0 | 350 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 0 | 1850 | 44 | 233 | 1197 | 0 | 0 | 0 | 0 | 50 | 0 | 350 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 0 | 1850 | 44 | 233 | 1197 | 0 | 0 | 0 | 0 | 50 | 0 | 350 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Adjustment: | 1.00 | 0.95 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.85 |
| Lanes: | 0.00 | 2.00 | 1.00 | 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Final Sat.: | 0 | 3610 | 1615 | 1805 | 3610 | 0 | 0 | 0 | 0 | 1805 | 0 | 1615 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.51 | 0.03 | 0.13 | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.22 |
| Crit Moves: | | **** | | **** | | | | | | | | **** |
| Green/Cycle: | 0.00 | 0.55 | 0.55 | 0.14 | 0.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.00 | 0.23 |
| Volume/Cap: | 0.00 | 0.93 | 0.05 | 0.93 | 0.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.93 |
| Delay/Veh: | 0.0 | 32.9 | 12.4 | 88.8 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 36.4 | 0.0 | 73.8 |
| User DelAdj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 0.0 | 32.9 | 12.4 | 88.8 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 36.4 | 0.0 | 73.8 |
| LOS by Move: | A | C | B | F | A | A | A | A | A | D | A | E |
| HCM2kAvgQ: | 0 | 36 | 1 | 12 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 17 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 SR 87 & Milligan Rd.

Cycle (sec): 120 Critical Vol./Cap.(X): 0.943
Loss Time (sec): 9 Average Delay (sec/veh): 33.5
Optimal Cycle: 146 Level Of Service: C

| Street Name: | State Route 87 | | | | | | | | | Milligan Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Protected | | | | | Protected | | | | | Protected | | | | | Protected | | | | |
| Rights: | Include | | | | | Include | | | | | Include | | | | | Include | | | | |
| Min. Green: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| Y+R: | 4.0 | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | | |
| Lanes: | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Volume Module: | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 1649 | 40 | | | 210 | 1068 | 0 | | | 0 | 0 | 0 | | | 45 | 0 | 315 | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| Initial Bse: | 0 | 1649 | 40 | | | 210 | 1068 | 0 | | | 0 | 0 | 0 | | | 45 | 0 | 315 | | |
| Added Vol: | 0 | 61 | 0 | | | 0 | 32 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| PasserByVol: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| Initial Fut: | 0 | 1710 | 40 | | | 210 | 1100 | 0 | | | 0 | 0 | 0 | | | 45 | 0 | 315 | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| PHF Adj: | 0.90 | 0.90 | 0.90 | | | 0.90 | 0.90 | 0.90 | | | 0.90 | 0.90 | 0.90 | | | 0.90 | 0.90 | 0.90 | | |
| PHF Volume: | 0 | 1900 | 44 | | | 233 | 1222 | 0 | | | 0 | 0 | 0 | | | 50 | 0 | 350 | | |
| Reduct Vol: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| Reduced Vol: | 0 | 1900 | 44 | | | 233 | 1222 | 0 | | | 0 | 0 | 0 | | | 50 | 0 | 350 | | |
| PCE Adj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| MLF Adj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| FinalVolume: | 0 | 1900 | 44 | | | 233 | 1222 | 0 | | | 0 | 0 | 0 | | | 50 | 0 | 350 | | |
| Saturation Flow Module: | | | | | | | | | | | | | | | | | | | | |
| Sat/Lane: | 1900 | 1900 | 1900 | | | 1900 | 1900 | 1900 | | | 1900 | 1900 | 1900 | | | 1900 | 1900 | 1900 | | |
| Adjustment: | 1.00 | 0.95 | 0.85 | | | 0.95 | 0.95 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 0.95 | 1.00 | 0.85 | | |
| Lanes: | 0.00 | 2.00 | 1.00 | | | 1.00 | 2.00 | 0.00 | | | 0.00 | 0.00 | 0.00 | | | 1.00 | 0.00 | 1.00 | | |
| Final Sat.: | 0 | 3610 | 1615 | | | 1805 | 3610 | 0 | | | 0 | 0 | 0 | | | 1805 | 0 | 1615 | | |
| Capacity Analysis Module: | | | | | | | | | | | | | | | | | | | | |
| Vol/Sat: | 0.00 | 0.53 | 0.03 | | | 0.13 | 0.34 | 0.00 | | | 0.00 | 0.00 | 0.00 | | | 0.03 | 0.00 | 0.22 | | |
| Crit Moves: | | **** | | | | **** | | | | | | | | | | | | **** | | |
| Green/Cycle: | 0.00 | 0.56 | 0.56 | | | 0.14 | 0.70 | 0.00 | | | 0.00 | 0.00 | 0.00 | | | 0.23 | 0.00 | 0.23 | | |
| Volume/Cap: | 0.00 | 0.94 | 0.05 | | | 0.94 | 0.49 | 0.00 | | | 0.00 | 0.00 | 0.00 | | | 0.12 | 0.00 | 0.94 | | |
| Delay/Veh: | 0.0 | 34.5 | 12.1 | | | 93.0 | 8.6 | 0.0 | | | 0.0 | 0.0 | 0.0 | | | 36.7 | 0.0 | 77.7 | | |
| User DelAdj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| AdjDel/Veh: | 0.0 | 34.5 | 12.1 | | | 93.0 | 8.6 | 0.0 | | | 0.0 | 0.0 | 0.0 | | | 36.7 | 0.0 | 77.7 | | |
| LOS by Move: | A | | C | | B | F | | A | | A | A | | A | | D | A | | E | | |
| HCM2kAvgQ: | 0 | | 38 | | 1 | 12 | | 11 | | 0 | 0 | | 0 | | 0 | 1 | | 0 | | 17 |

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Loop Rd. & Date St.

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[ 0.0]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R | L | - | T | - | R |
| Control: | Stop Sign | | | | | Stop Sign | | | | | Uncontrolled | | | | | Uncontrolled | | | | |
| Rights: | Include | | | | | Include | | | | | Include | | | | | Include | | | | |
| Lanes: | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 |
| Volume Module: | | | | | | | | | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| Growth Adj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| Initial Bse: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| Added Vol: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 103 | 0 | | | 0 | 143 | 0 | | |
| PasserByVol: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| Initial Fut: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 103 | 0 | | | 0 | 143 | 0 | | |
| User Adj: | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | |
| PHF Adj: | 0.90 | 0.90 | 0.90 | | | 0.90 | 0.90 | 0.90 | | | 0.90 | 0.90 | 0.90 | | | 0.90 | 0.90 | 0.90 | | |
| PHF Volume: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 114 | 0 | | | 0 | 159 | 0 | | |
| Reduct Vol: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 0 | 0 | | |
| FinalVolume: | 0 | 0 | 0 | | | 0 | 0 | 0 | | | 0 | 114 | 0 | | | 0 | 159 | 0 | | |
| Critical Gap Module: | | | | | | | | | | | | | | | | | | | | |
| Critical Gp: | 6.8 | xxxx | | | | 6.9 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| FollowUpTim: | 3.5 | xxxx | | | | 3.3 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Capacity Module: | | | | | | | | | | | | | | | | | | | | |
| Cnflict Vol: | 194 | xxxx | | | | 57 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Potent Cap.: | 782 | xxxx | | | | 1003 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Move Cap.: | 782 | xxxx | | | | 1003 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Volume/Cap: | 0.00 | xxxx | | | | 0.00 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | |
| Control Del: | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | |
| LOS by Move: | * | | * | | * | * | | * | | * | * | | * | | * | * | | * | | * |
| Movement: | LT | - | LTR | - | RT | LT | - | LTR | - | RT | LT | - | LTR | - | RT | LT | - | LTR | - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | | xxxx | xxxx | xxxxx | | |
| SharedQueue: | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | | xxxxx | xxxx | xxxxx | | |
| Shared LOS: | * | | * | | * | * | | * | | * | * | | * | | * | * | | * | | * |
| ApproachDel: | xxxxxx | | | | | xxxxxx | | | | | xxxxxx | | | | | xxxxxx | | | | |
| ApproachLOS: | * | | | | | * | | | | | * | | | | | * | | | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Loop Rd. & Date St.

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: B[ 13.4]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 0 | 0 1 | | 0 0 0 | 0 0 | | 0 0 1 | 1 0 | | 1 0 2 | 0 0 | |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 142 | 0 | 8 | 0 | 0 | 0 | 0 | 192 | 42 | 2 | 310 | 0 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 142 | 0 | 8 | 0 | 0 | 0 | 0 | 192 | 42 | 2 | 310 | 0 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 158 | 0 | 9 | 0 | 0 | 0 | 0 | 213 | 47 | 2 | 344 | 0 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 158 | 0 | 9 | 0 | 0 | 0 | 0 | 213 | 47 | 2 | 344 | 0 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 6.8 | xxxx | | 6.9 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 4.1 | xxxx xxxxx |
| FollowUpTim: | 3.5 | xxxx | | 3.3 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 2.2 | xxxx xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 413 | xxxx | 130 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 260 | xxxx | xxxxx |
| Potent Cap.: | 572 | xxxx | 902 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 1316 | xxxx | xxxxx |
| Move Cap.: | 571 | xxxx | 902 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 1316 | xxxx | xxxxx |
| Volume/Cap: | 0.28 | xxxx | 0.01 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 0.00 | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 1.1 | xxxx | 0.0 | xxxx | xxxx | xxxx | xxxx | xxxx | xxxx | 0.0 | xxxx | xxxxx |
| Control Del: | 13.7 | xxxx | 9.0 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | 7.7 | xxxx | xxxxx |
| LOS by Move: | B | * | A | * | * | * | * | * | * | A | * | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | * | * | * | * | * |
| ApproachDel: | 13.4 | | | xxxxxx | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | B | | | * | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Loop Rd. & Date St.

Average Delay (sec/veh): 6.6 Worst Case Level Of Service: A[ 9.2]

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 0 | 1 0 | | 1 0 0 | 1 0 | | 1 0 1 | 1 0 | | 1 0 1 | 1 0 | |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 0 | 0 | 0 | 34 | 0 | 124 | 70 | 34 | 0 | 0 | 19 | 19 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 0 | 0 | 0 | 34 | 0 | 124 | 70 | 34 | 0 | 0 | 19 | 19 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 0 | 0 | 0 | 38 | 0 | 138 | 78 | 38 | 0 | 0 | 21 | 21 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 0 | 0 | 0 | 38 | 0 | 138 | 78 | 38 | 0 | 0 | 21 | 21 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.5 | 6.5 | 6.9 | 6.8 | 6.5 | 6.9 | 4.1 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 204 | 236 | 19 | 206 | 225 | 21 | 42 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Potent Cap.: | 741 | 669 | 1061 | 769 | 678 | 1058 | 1580 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Move Cap.: | 621 | 636 | 1061 | 740 | 644 | 1058 | 1580 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Volume/Cap: | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.13 | 0.05 | xxxx | xxxx | xxxx | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | xxxx | xxxx | xxxxx | 0.2 | xxxx | xxxxx | 0.2 | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| Control Del: | xxxxx | xxxx | xxxxx | 10.1 | xxxx | xxxxx | 7.4 | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | * | * | * | B | * | * | A | * | * | * | * | * |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx | xxxx | 0 | xxxx | xxxx | 1058 | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 0.4 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 8.9 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | A | * | * | * | * | * | * |
| ApproachDel: | xxxxxx | | | 9.2 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | * | | | A | | | * | | | * | | |

Note: Queue reported is the number of cars per lane.

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

**********

Intersection #9 Loop Rd. & Date St.

**********

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: B[ 10.8]

**********

| Street Name: | Loop Road | | | | | | Date Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Stop Sign | | | Stop Sign | | | Uncontrolled | | | Uncontrolled | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 1 0 | 0 1 | 0 | 1 0 | 0 1 | 0 | 1 0 | 1 1 | 0 | 1 0 | 1 1 | 0 |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Added Vol: | 24 | 0 | 25 | 34 | 0 | 124 | 70 | 114 | 7 | 7 | 85 | 19 |
| PasserByVol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Initial Fut: | 24 | 0 | 25 | 34 | 0 | 124 | 70 | 114 | 7 | 7 | 85 | 19 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| PHF Volume: | 27 | 0 | 28 | 38 | 0 | 138 | 78 | 127 | 8 | 8 | 94 | 21 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FinalVolume: | 27 | 0 | 28 | 38 | 0 | 138 | 78 | 127 | 8 | 8 | 94 | 21 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx |
| FollowUpTim: | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 349 | 417 | 67 | 339 | 411 | 58 | 116 | xxxx | xxxxx | 134 | xxxx | xxxxx |
| Potent Cap.: | 586 | 529 | 989 | 595 | 534 | 1003 | 1486 | xxxx | xxxxx | 1463 | xxxx | xxxxx |
| Move Cap.: | 484 | 499 | 989 | 553 | 503 | 1003 | 1486 | xxxx | xxxxx | 1463 | xxxx | xxxxx |
| Volume/Cap: | 0.06 | 0.00 | 0.03 | 0.07 | 0.00 | 0.14 | 0.05 | xxxx | xxxx | 0.01 | xxxx | xxxx |
| Level Of Service Module: | | | | | | | | | | | | |
| 2Way95thQ: | 0.2 | xxxx | xxxxx | 0.2 | xxxx | xxxxx | 0.2 | xxxx | xxxxx | 0.0 | xxxx | xxxxx |
| Control Del: | 12.9 | xxxx | xxxxx | 12.0 | xxxx | xxxxx | 7.6 | xxxx | xxxxx | 7.5 | xxxx | xxxxx |
| LOS by Move: | B | * | * | B | * | * | A | * | * | A | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | 989 | xxxx | xxxx | 1003 | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx |
| SharedQueue: | xxxxx | xxxx | 0.1 | xxxxx | xxxx | 0.5 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shrd ConDel: | xxxxx | xxxx | 8.7 | xxxxx | xxxx | 9.2 | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | A | * | * | A | * | * | * | * | * | * |
| ApproachDel: | 10.8 | | | 9.8 | | | xxxxxx | | | xxxxxx | | |
| ApproachLOS: | B | | | A | | | * | | | * | | |

**********

Note: Queue reported is the number of cars per lane.

**********

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Sunshine Industrial Park, Eloy AZ
PM Peak Hour
2030 PM - Full Buildout

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

| Node | Intersection | NB | SB | EB | WB |
|---|---|---|---|---|---|
| 1 | Sunshine Blvd. & SR 84 | 201010 | 101010 | 102010 | 101100 |
| 2 | Sunshine Blvd. & Alsdorf Rd. | 102000 | 001100 | 000001 | 000000 |
| 3 | Sunshine Blvd. & Date St. | 102010 | 101100 | 100100 | 201010 |
| 4 | Sunshine Blvd. & I-10 WB Ramps | 102000 | 002010 | 000000 | 100011 |
| 5 | Sunshine Blvd. & I-10 EB Ramps | 002010 | 102000 | 100011 | 000000 |
| 6 | SR 87 & SR 84 | 100100 | 201010 | 100100 | 101010 |
| 7 | SR 87 & Milligan Rd. | 002010 | 102000 | 000000 | 100010 |
| 8 | Loop Rd. & Date St. | 100010 | 000000 | 001100 | 102000 |
| 9 | Loop Rd. & Date St. | 100100 | 100100 | 101100 | 101100 |

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# APPENDIX G

# 2030 QUEUE LENGTH ANALYSIS

CivTech

## Unsignalized Intersection

**2030**

Average Vehicle Length (ft): 25 **90%**
Average Truck Length (ft): 75 **10%**
Equation Used: storage length = 2 x (vehicles/hour)/(60 minutes/hour) x average vehicle length

| Intersection | Approach | AM Peak (veh/hr) | PM Peak (veh/hr) | Veh per 2 minutes | Trucks per 2 minutes | Storage Length (ft) |
|---|---|---|---|---|---|---|
| Sunshine Blvd. & Alsdorf Rd. | NB Left | 20 | 120 | 4 | 1 | 175 |
| | SB Left | 0 | 0 | 0 | 0 | 0 |
| | EB Left | 10 | 90 | 3 | 1 | 150 |
| | WB Left | 0 | 0 | 0 | 0 | 0 |
| | NB Right | 0 | 0 | 0 | 0 | 0 |
| | SB Right | 80 | 15 | 3 | 1 | 150 |
| | EB Right | 110 | 20 | 4 | 1 | 175 |
| | WB Right | 0 | 0 | 0 | 0 | 0 |
| West Loop Rd. & Date St. | NB Left | 35 | 142 | 5 | 1 | 200 |
| | SB Left | 0 | 0 | 0 | 0 | 0 |
| | EB Left | 0 | 0 | 0 | 0 | 0 |
| | WB Left | 46 | 86 | 3 | 1 | 150 |
| | NB Right | 2 | 8 | 1 | 1 | 100 |
| | SB Right | 0 | 0 | 0 | 0 | 0 |
| | EB Right | 142 | 42 | 5 | 1 | 200 |
| | WB Right | 0 | 0 | 0 | 0 | 0 |
| East Loop Rd. & Date St. | NB Left | 6 | 24 | 1 | 1 | 100 |
| | SB Left | 12 | 34 | 2 | 1 | 125 |
| | EB Left | 151 | 70 | 6 | 1 | 225 |
| | WB Left | 25 | 7 | 1 | 1 | 100 |
| | NB Right | 6 | 25 | 1 | 1 | 100 |
| | SB Right | 42 | 124 | 5 | 1 | 200 |
| | EB Right | 24 | 7 | 1 | 1 | 100 |
| | WB Right | 41 | 19 | 2 | 1 | 125 |

**Sunshine Industrial Park TIA** **Queue Length Analysis**

## Signalized Intersection
**2030**

Average Vehicle Length (ft): 25 **90%** Cycles: 2
Average Truck Length (ft): 75 **10%**

Intersection Cycle Length (sec): **120**
Equation Used: storage length = 2 x (vehicles/hour)/(cycles/hour) x average vehicle length

| Intersection | Approach | AM Peak (veh/hr) | PM Peak (veh/hr) | Vehicles per 2 cycles | Trucks per 2 cycles | Storage Length (ft) |
|---|---|---|---|---|---|---|
| Sunshine Blvd. & SR 84 | NB Left | 380 | 564 | 34 | 4 | **575** |
| | SB Left | 30 | 34 | 3 | 1 | 150 |
| | EB Left | 130 | 195 | 12 | 2 | 450 |
| | WB Left | 130 | 90 | 8 | 1 | 275 |
| | NB Right | 100 | 255 | 16 | 2 | 550 |
| | SB Right | 115 | 150 | 9 | 1 | 300 |
| | EB Right | 505 | 465 | 31 | 4 | 1,075 |
| | WB Right | 21 | 56 | 4 | 1 | 175 |
| Sunshine Blvd. & Date St. | NB Left | 15 | 215 | 13 | 2 | 475 |
| | SB Left | 125 | 70 | 8 | 1 | 275 |
| | EB Left | 45 | 165 | 10 | 2 | 400 |
| | WB Left | 189 | 685 | 42 | 5 | **713** |
| | NB Right | 707 | 288 | 43 | 5 | 1,450 |
| | SB Right | 150 | 50 | 9 | 1 | 300 |
| | EB Right | 190 | 20 | 12 | 2 | 450 |
| | WB Right | 36 | 144 | 9 | 1 | 300 |
| Sunshine Blvd. & I-10 WB Ramps | NB Left | 285 | 330 | 20 | 3 | 725 |
| | SB Left | 0 | 0 | 0 | 0 | 0 |
| | EB Left | 0 | 0 | 0 | 0 | 0 |
| | WB Left | 80 | 480 | 29 | 4 | 1,025 |
| | NB Right | 0 | 0 | 0 | 0 | 0 |
| | SB Right | 196 | 290 | 18 | 2 | 600 |
| | EB Right | 0 | 0 | 0 | 0 | 0 |
| | WB Right | 400 | 330 | 24 | 3 | 825 |
| Sunshine Blvd. & I-10 EB Ramps | NB Left | 0 | 0 | 0 | 0 | 0 |
| | SB Left | 595 | 375 | 36 | 4 | 1,200 |
| | EB Left | 300 | 220 | 18 | 2 | 600 |
| | WB Left | 0 | 0 | 0 | 0 | 0 |
| | NB Right | 165 | 315 | 19 | 3 | 700 |
| | SB Right | 0 | 0 | 0 | 0 | 0 |
| | EB Right | 180 | 320 | 20 | 3 | 725 |
| | WB Right | 0 | 0 | 0 | 0 | 0 |
| SR 87 & SR 84 | NB Left | 0 | 0 | 0 | 0 | 0 |
| | SB Left | 500 | 315 | 30 | 4 | **525** |
| | EB Left | 401 | 280 | 25 | 3 | 850 |
| | WB Left | 0 | 0 | 0 | 0 | 0 |
| | NB Right | 0 | 0 | 0 | 0 | 0 |
| | SB Right | 335 | 455 | 28 | 4 | 1,000 |
| | EB Right | 0 | 10 | 1 | 1 | 100 |
| | WB Right | 175 | 475 | 29 | 4 | 1,025 |
| SR 87 & Milligan Rd. | NB Left | 0 | 0 | 0 | 0 | 0 |
| | SB Left | 280 | 210 | 17 | 2 | 575 |
| | EB Left | 0 | 0 | 0 | 0 | 0 |
| | WB Left | 120 | 45 | 8 | 1 | 275 |
| | NB Right | 40 | 40 | 3 | 1 | 150 |
| | SB Right | 0 | 0 | 0 | 0 | 0 |
| | EB Right | 0 | 0 | 0 | 0 | 0 |
| | WB Right | 100 | 315 | 19 | 3 | 700 |



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## Signalized Intersection

**Total Traffic: ADOT Minimum and Desirable Queue Storage Calculations**

**2030**

| | | | | | Left-Turn Lane Only! | |
|---|---|---|---|---|---|---|
| Average Vehicle Length (ft): | 25 | Lane Width, W = | 12 | Taper Length, T = | One Side | Symmetrical |
| Cycle Length (sec): | **120** | esign Speed, S = | **50** | Speed >= 45 | 600 | 300 |
| Cycles per Hour: | 30 | Trucks > 10%? | **Y** | Speed < 45 mph | | |

Taper Length, RTL = GAP

**Queue Storage Equations:**

**Queue Length = 2 x (vehicles/hour)/(cycles/hour) x average vehicle length**

**Storage Length = Queue Length + Minimum Braking Distance**

**Turn Lane Length = Storage Length – [Gap – 2/3 Gap]**

| Design Speed (mph) | Gap (ft) | 2/3 Gap (ft) | Calculated Gap (ft) |
|---|---|---|---|
| < 40mph | 60 | 40 | 20 |
| 40-50mph | 90 | 60 | 30 |
| > 50mph | 140 | 95 | 45 |

* Queue length: minimum queue length is 2 vehicles (2 cars or 1 car+1 truck), which can be reduced by 20 feet for a free right turn movement.

| | Minimum | | | Desired | |
|---|---|---|---|---|---|
| Design Speed (mph) | Entering Speed (mph) | Braking Speed (mph) | Braking Distance (ft) | Braking Speed (mph) | Braking Distance (ft) |
| 30 | 20 | 20 | 20 | 29 | 80 |
| 35 | 25 | 25 | 40 | 34 | 115 |
| 40 | 30 | 29 | 50 | 38 | 150 |
| 45 | 35 | 34 | 85 | 43 | 200 |
| 50 | 40 | 38 | 120 | 47 | 245 |
| 55 | 45 | 42 | 145 | 52 | 300 |
| 60 | 50 | 47 | 200 | 56 | 360 |
| 65 | 55 | 52 | 265 | 60 | 415 |
| 70 | 60 | 56 | 315 | 64 | 490 |
| 75 | 65 | 61 | 400 | 70 | 585 |

| Intersection | Approach | Free-Flow Right? | AM Peak (veh/hr) | Midday Peak (veh/hr) | PM Peak (veh/hr) | Veh per 2 minutes | Queue Length (ft)* | Minimum Storage Length (ft) | Minimum **Turn Lane Length (ft)** | Desired Storage Length (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sunshine Blvd. & SR 84 | NB Left | | 380 | 0 | 564 | 38 | 950 | 1070 | **520** | 598 |
| | SB Left | | 30 | 0 | 34 | 3 | 85 | 205 | **175** | 330 |
| | EB Left | | 130 | 0 | 195 | 13 | 325 | 445 | **415** | 570 |
| | WB Left | | 130 | 0 | 90 | 9 | 225 | 345 | **315** | 470 |
| | NB Right | **N** | 100 | 0 | 255 | 17 | 425 | 545 | **515** | 670 |
| | SB Right | **N** | 115 | 0 | 150 | 10 | 250 | 370 | **340** | 495 |
| | EB Right | **N** | 505 | 0 | 465 | 34 | 850 | 970 | **940** | 1095 |
| | WB Right | **N** | 21 | 0 | 56 | 4 | 100 | 220 | **190** | 345 |
| Sunshine Blvd. & I-10 WB Ramps | NB Left | | 285 | 0 | 330 | 22 | 550 | 670 | **640** | 795 |
| | SB Left | | | | | | | | | |
| | EB Left | | | | | | | | | |
| | WB Left | | 80 | 0 | 480 | 32 | 800 | 920 | **890** | 1045 |
| | NB Right | | | | | | | | | |
| | SB Right | **N** | 196 | 0 | 290 | 20 | 500 | 620 | **590** | 745 |
| | EB Right | | | | | | | | | |
| | WB Right | **N** | 400 | 0 | 330 | 27 | 675 | 795 | **765** | 920 |
| Sunshine Blvd. & I-10 EB Ramps | NB Left | | | | | | | | | |
| | SB Left | | 595 | 0 | 375 | 40 | 1000 | 1120 | **1090** | 1245 |
| | EB Left | | 300 | 0 | 220 | 20 | 500 | 620 | **590** | 745 |
| | WB Left | | | | | | | | | |
| | NB Right | **N** | 165 | 0 | 315 | 21 | 525 | 645 | **615** | 770 |
| | SB Right | | | | | | | | | |
| | EB Right | **N** | 180 | 0 | 320 | 22 | 550 | 670 | **640** | 795 |
| | WB Right | | | | | | | | | |

## Signalized Intersection

**Total Traffic: ADOT Minimum and Desirable Queue Storage Calculations**

**2030**

| | | | | | | | | | Left-Turn Lane Only! | |
|---|---|---|---|---|---|---|---|---|---|---|
| SR 87 & SR 84 | NB Left | | | | | | | | | |
| | SB Left | | 500 | 0 | 315 | 34 | 850 | 970 | **470** | 548 |
| | EB Left | | 401 | 0 | 280 | 27 | 675 | 795 | **383** | 460 |
| | WB Left | | | | | | | | | |
| | NB Right | | | | | | | | | |
| | SB Right | **N** | 335 | 0 | 455 | 31 | 775 | 895 | **865** | 1020 |
| | EB Right | | | | | | | | | |
| | WB Right | **N** | 175 | 0 | 475 | 32 | 800 | 920 | **890** | 1045 |
| SR 87 & Milligan Rd. | NB Left | | | | | | | | | |
| | SB Left | | 280 | 0 | 210 | 19 | 475 | 595 | **565** | 720 |
| | EB Left | | | | | | | | | |
| | WB Left | | 120 | 0 | 45 | 8 | 200 | 320 | **290** | 445 |
| | NB Right | **N** | 40 | 0 | 40 | 3 | 85 | 205 | **175** | 330 |
| | SB Right | | | | | | | | | |
| | EB Right | | | | | | | | | |
| | WB Right | **N** | 100 | 0 | 315 | 21 | 525 | 645 | **615** | 770 |

# APPENDIX H

# SIGHT DISTANCE ANALYSIS

CivTech

**Assumptions and/or Givens**

| | | AASHTO Ref |
|---|---|---|
| ***Elements of Design from AASHTO 2004*** | | |
| Driver Eye Height | | |
| Passenger Vehicle | 3.50 ft | p 127 |
| Truck | 7.60 ft | p 127 |
| Object Height | | |
| Stopping Sight Distance | 2.00 ft | p 127 |
| Passing Sight Distance | 3.50 ft | p 127 |
| Vehicle Height | 4.25 ft | p 127 |
| Driver Eye Location | | |
| From Edge of Major Rd Traveled Way | 14.50 ft | p 657 |
| Deceleration Rate (a) | | |
| Passenger Vehicle | 11.20 ft/sec$^2$ | p 111 |
| Truck | N/A ft | |
| Brake reaction time (t) | 2.50 sec | p 113 |

***Site Specific Data***

| | | | |
|---|---|---|---|
| Major Street Design Speed ($V_{major}$) | | 40 MPH | |
| Grades - Approaching Minor Street from: (– = approaching downhill) | | | |
| Left ($G_L$) | | 0.00 % | |
| Right ($G_R$) | | 0.00 % | |
| Approach Grade Adjustment Factor | Left | 1.0 | p 658 |
| | Right | 1.0 | |
| Major Road Through Lanes on Each Approach | | 2.0 | |
| Median Width (in "Lane Equivalents") | | 1.0 | |
| Bicycle Lane Width (in "Lane Equivalents") | | 0.0 | |
| Minor Road Approach Upgrade, if >3% | | 0.00 % | |
| Minor Road Access (check restricted) | | | |

| LI | LO/Th | RO |
|---|---|---|
| | | |

**Stopping Sight Distance = Brake Reaction Distance + Braking Distance**

Neglecting Effect of Grade $d = 1.47Vt + 1.075\frac{V^2}{a}$ p 113

Calculated d= 300.6 ft
Design d= 305 ft

With Effect of Grade $d = 1.47Vt + \frac{V^2}{30((\frac{a}{32.2}) \pm G)}$ p 114

Calculated d= 300.3 ft - left
305 ft - right
Design d= 300.3 ft - left
305 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. p 114





**Intersection Sight Distances**

***Case B–Intersections with Stop Control on the Minor Road*** AASHTO Ref p 657

Case B1–Left Turn from the Minor Road pp 657ff

| Design Vehicle | Time Gap ($t_g$) | |
|---|---|---|
| Passenger Car | 7.5 sec | p 660 |
| Single-Unit Tuck | 9.5 sec | p 660 |
| Combination Truck | 11.5 sec | p 660 |
| Time gap adjustments | | |
| Add'l lanes to cross (1st is assumed) | | |
| Passenger Car | 0.5 sec | p 660 |
| Trucks | 0.7 sec | p 660 |
| Minor Approach Upgrade (Per each 1%>3%) | 0.2 sec | p 660 |
| Site data | | |
| Major Road + Bike Lanes on Left Approach | 2.0 | p 660 |
| Minor Road Approach Upgrade, if >3% | 0 % | p 660 |

Time Gap based on site data

*Design Vehicle Gap+Adj for Approach Grade>3%+Adjs for Add'l Lanes & Median*

| | |
|---|---|
| Passenger Car | 8.5 sec |
| Single-Unit Tuck | 10.9 sec |
| Combination Truck | 12.9 sec |

ISD to left & right along Major Road $ISD = 1.47V_{major}t_g$ (ft) p 659

| | | ISD to Left and Right |
|---|---|---|
| Passenger Car | calculated ISD= | 499.8 ft |
| | design ISD= | 500 ft |
| Single-Unit Tuck | calculated ISD= | 640.9 ft |
| | design ISD= | 645 ft |
| Combination Truck | calculated ISD= | 758.5 ft |
| | design ISD= | 760 ft |

**Intersection Sight Distances (cont'd)**

| | | AASHTO Ref |
|---|---|---|
| Case B2—Right Turn from the Minor Road & Case B3—Crossing Maneuver from the Minor Road | | p 663 ff |
| Design Vehicle | Time Gap ($t_g$) | |
| Passenger Car | 6.5 sec | p 664 |
| Single-Unit Tuck | 8.5 sec | p 664 |
| Combination Truck | 10.5 sec | p 664 |
| Time gap adjustments - Case B-3 Only* | | |
| Add'l lanes to cross (1st is assumed) | | |
| Passenger Car | 0.5 sec | p 664 |
| Trucks | 0.7 sec | p 664 |
| Minor Approach Upgrade (Per each 1%>3%) | 0.1 sec | p 664 |
| Site data | | |
| Major Road + Bike Lanes on Left Approach | 2.0 | p 664 |
| Minor Road Approach Upgrade, if >3% | 0 % | p 664 |

| Time Gap based on site data (sec) | B2 & B3 | B3 Only |
|---|---|---|
| *Design Vehicle Gap+Adj for Approach Grade>3%(+Adjs for Add'l Lanes & Median for B3)* | | |
| Passenger Car | 7.5 | 8.0 |
| Single-Unit Tuck | 9.9 | 10.6 |
| Combination Truck | 11.9 | 12.6 |

ISD to left (B2/B3) & right (B3) along Major Rd ISD=$1.47V_{major}t_g$ (ft) p 659

| | | ISD to Left (B2 & B3) | ISD to right (B3 Only) |
|---|---|---|---|
| Passenger Car | calculated ISD= | 441.0 | 470.4 |
| | design ISD= | 445 | 475 |
| Single-Unit Tuck | calculated ISD= | 582.1 | 623.3 |
| | design ISD= | 585 | 625 |
| Combination Truck | calculated ISD= | 699.7 | 740.9 |
| | design ISD= | 700 | 745 |

*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. p 663





**Intersection Sight Distances (cont'd)**

***Case F—Left Turns from the Major Road*** *AASHTO Ref* pp 674ff

| Design Vehicle | Time Gap ($t_g$) | |
|---|---|---|
| Passenger Car | 5.5 sec | p 674 |
| Single-Unit Tuck | 6.5 sec | p 674 |
| Combination Truck | 7.5 sec | p 674 |
| Time gap adjustments | | |
| Add'l lanes to cross (1 assumed) | | |
| Passenger Car | 0.5 sec | p 674 |
| Trucks | 0.7 sec | p 674 |
| Site data | | |
| Opposing Lanes (adj'd for x-wide median) | 2.0 | |
| Time Gap based on site data | | |
| *Design Vehicle Gap+Adj for Add'l Opposing Lanes* | | |
| Passenger Car | 6.5 sec | |
| Single-Unit Tuck | 7.9 sec | |
| Combination Truck | 8.9 sec | |

ISD to front along Major Road ISD=$1.47V_{major}t_g$ (ft) p 659

| | | |
|---|---|---|
| Passenger Car | calculated ISD= | 382.2 ft |
| | design ISD= | 385 ft |
| Single-Unit Tuck | calculated ISD= | 464.5 ft |
| | design ISD= | 465 ft |
| Combination Truck | calculated ISD= | 523.3 ft |
| | design ISD= | 525 ft |

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. p 663

## *SIGHT DISTANCE SUMMARY*

| Sight Distance Type | Governing Case | Car | SU Truck | Combo Truck |
|---|---|---|---|---|
| Stopping | | | | |
| Without effect of grade | | 305 | N/A | N/A |
| With effect of grade on left | | 305 | N/A | N/A |
| With effect of grade on right | | 305 | N/A | N/A |
| Intersection | | | | |
| To Right | B1 | 500 | 645 | 760 |
| To Left | B2/B3 | 445 | 585 | 700 |
| On Major Road | F | 385 | 465 | 525 |

**Assumptions and/or Givens**

| ***Elements of Design from AASHTO 2004*** | | *AASHTO Ref* |
|---|---|---|
| Driver Eye Height | | |
| Passenger Vehicle | 3.50 ft | p 127 |
| Truck | 7.60 ft | p 127 |
| Object Height | | |
| Stopping Sight Distance | 2.00 ft | p 127 |
| Passing Sight Distance | 3.50 ft | p 127 |
| Vehicle Height | 4.25 ft | p 127 |
| Driver Eye Location | | |
| From Edge of Major Rd Traveled Way | 14.50 ft | p 657 |
| Deceleration Rate (a) | | |
| Passenger Vehicle | 11.20 ft/sec$^2$ | p 111 |
| Truck | N/A ft | |
| Brake reaction time (t) | 2.50 sec | p 113 |

***Site Specific Data***

| | | | | |
|---|---|---|---|---|
| Major Street Design Speed ($V_{major}$) | | 45 | MPH | |
| Grades - Approaching Minor Street from: (– = approaching downhill) | | | | |
| Left ($G_L$) | | 0.00 | % | |
| Right ($G_R$) | | 0.00 | % | |
| Approach Grade Adjustment Factor | Left | 1.0 | | p 658 |
| | Right | 1.0 | | |
| Major Road Through Lanes on Each Approach | | 2.0 | | |
| Median Width (in "Lane Equivalents") | | 1.0 | | |
| Bicycle Lane Width (in "Lane Equivalents") | | 0.0 | | |
| Minor Road Approach Upgrade, if >3% | | 0.00 | % | |
| Minor Road Access (check restricted) | | | | |

| LI | LO/Th | RO |
|---|---|---|
| | | |

**Stopping Sight Distance = Brake Reaction Distance + Braking Distance**

Neglecting Effect of Grade $d=1.47Vt+1.075\frac{V^2}{a}$ p 113

Calculated d= 359.8 ft
Design d= 360 ft

With Effect of Grade $d=1.47Vt+\frac{V^2}{30((\frac{a}{32.2})\pm G)}$ p 114

Calculated d= 359.1 ft - left
360 ft - right
Design d= 359.1 ft - left
360 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. p 114





**Intersection Sight Distances**

***Case B–Intersections with Stop Control on the Minor Road*** *AASHTO Ref* p 657

Case B1–Left Turn from the Minor Road pp 657ff

| Design Vehicle | Time Gap ($t_g$) | |
|---|---|---|
| Passenger Car | 7.5 sec | p 660 |
| Single-Unit Tuck | 9.5 sec | p 660 |
| Combination Truck | 11.5 sec | p 660 |
| Time gap adjustments | | |
| Add'l lanes to cross (1st is assumed) | | |
| Passenger Car | 0.5 sec | p 660 |
| Trucks | 0.7 sec | p 660 |
| Minor Approach Upgrade (Per each 1%>3%) | 0.2 sec | p 660 |
| Site data | | |
| Major Road + Bike Lanes on Left Approach | 2.0 | p 660 |
| Minor Road Approach Upgrade, if >3% | 0 % | p 660 |

Time Gap based on site data

*Design Vehicle Gap+Adj for Approach Grade>3%+Adjs for Add'l Lanes & Median*

| | |
|---|---|
| Passenger Car | 8.5 sec |
| Single-Unit Tuck | 10.9 sec |
| Combination Truck | 12.9 sec |

ISD to left & right along Major Road $ISD=1.47V_{major}t_g$ (ft) p 659

| | | | ISD to Left and Right |
|---|---|---|---|
| Passenger Car | calculated | ISD= | 562.3 ft |
| | design | ISD= | 565 ft |
| Single-Unit Tuck | calculated | ISD= | 721.0 ft |
| | design | ISD= | 725 ft |
| Combination Truck | calculated | ISD= | 853.3 ft |
| | design | ISD= | 855 ft |

**Intersection Sight Distances (cont'd)**

| | | *AASHTO Ref* |
|---|---|---|
| Case B2—Right Turn from the Minor Road | | p 663 |
| & | | |
| Case B3—Crossing Maneuver from the Minor Road | | pp 663ff |
| Design Vehicle | Time Gap ($t_g$) | |
| Passenger Car | 6.5 sec | p 664 |
| Single-Unit Tuck | 8.5 sec | p 664 |
| Combination Truck | 10.5 sec | p 664 |
| Time gap adjustments - Case B-3 Only* | | |
| Add'l lanes to cross (1st is assumed) | | |
| Passenger Car | 0.5 sec | p 664 |
| Trucks | 0.7 sec | p 664 |
| Minor Approach Upgrade (Per each 1%>3%) | 0.1 sec | p 664 |
| Site data | | |
| Major Road + Bike Lanes on Left Approach | 2.0 | p 664 |
| Minor Road Approach Upgrade, if >3% | 0 % | p 664 |

| Time Gap based on site data (sec) | B2 & B3 | B3 Only |
|---|---|---|
| *Design Vehicle Gap+Adj for Approach Grade>3%(+Adjs for Add'l Lanes & Median for B3)* | | |
| Passenger Car | 7.5 | 8.0 |
| Single-Unit Tuck | 9.9 | 10.6 |
| Combination Truck | 11.9 | 12.6 |

ISD to left (B2/B3) & right (B3) along Major Rd ISD=1.47$V_{major}t_g$ (ft) p 659

| | | ISD to Left (B2 & B3) | ISD to right (B3 Only) |
|---|---|---|---|
| Passenger Car | calculated ISD= | 496.1 | 529.2 |
| | design ISD= | 500 | 530 |
| Single-Unit Tuck | calculated ISD= | 654.9 | 701.2 |
| | design ISD= | 655 | 705 |
| Combination Truck | calculated ISD= | 787.2 | 833.5 |
| | design ISD= | 790 | 835 |

*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. p 663





**Intersection Sight Distances (cont'd)**

| ***Case F—Left Turns from the Major Road*** | | *AASHTO Ref* pp 674ff |
|---|---|---|
| Design Vehicle | Time Gap ($t_g$) | |
| Passenger Car | 5.5 sec | p 674 |
| Single-Unit Tuck | 6.5 sec | p 674 |
| Combination Truck | 7.5 sec | p 674 |
| Time gap adjustments | | |
| Add'l lanes to cross (1 assumed) | | |
| Passenger Car | 0.5 sec | p 674 |
| Trucks | 0.7 sec | p 674 |
| Site data | | |
| Opposing Lanes (adj'd for x-wide median) | 2.0 | |
| Time Gap based on site data | | |
| *Design Vehicle Gap+Adj for Add'l Opposing Lanes* | | |
| Passenger Car | 6.5 sec | |
| Single-Unit Tuck | 7.9 sec | |
| Combination Truck | 8.9 sec | |

| ISD to front along Major Road | ISD=1.47$V_{major}t_g$ | (ft) | p 659 |
|---|---|---|---|
| Passenger Car | calculated ISD= | 430.0 ft | |
| | design ISD= | 430 ft | |
| Single-Unit Tuck | calculated ISD= | 522.6 ft | |
| | design ISD= | 525 ft | |
| Combination Truck | calculated ISD= | 588.7 ft | |
| | design ISD= | 590 ft | |

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. p 663

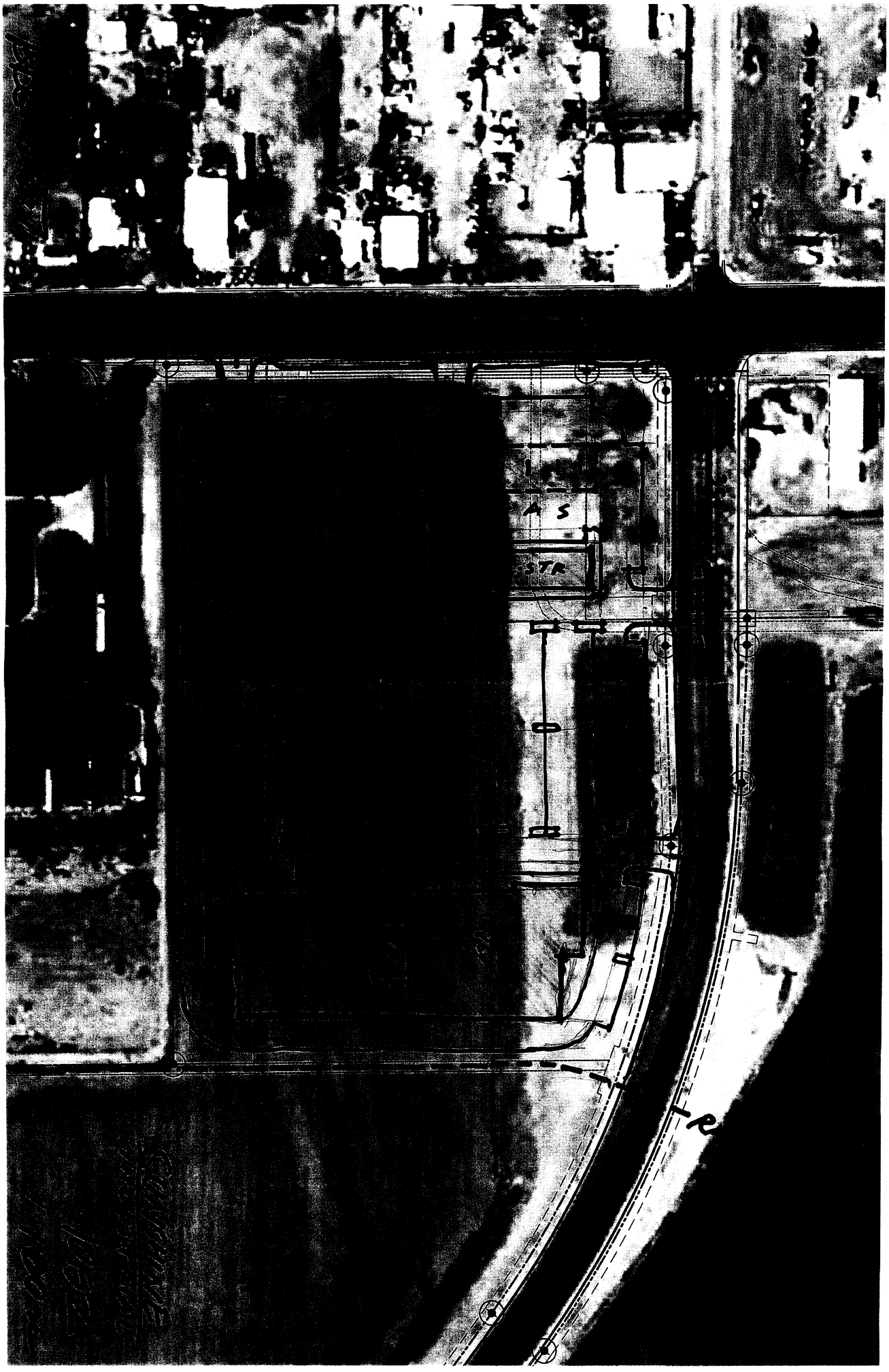
## *SIGHT DISTANCE SUMMARY*

| Sight Distance Type | Governing Case | Car | SU Truck | Combo Truck |
|---|---|---|---|---|
| Stopping | | | | |
| Without effect of grade | | 360 | N/A | N/A |
| With effect of grade on left | | 360 | N/A | N/A |
| With effect of grade on right | | 360 | N/A | N/A |
| Intersection | | | | |
| To Right | B1 | 565 | 725 | 855 |
| To Left | B2/B3 | 500 | 655 | 790 |
| On Major Road | F | 430 | 525 | 590 |

# APPENDIX I

## COMMERCIAL SITE PLAN

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# APPENDIX J

# MILLIGAN ROAD ABANDONMENT LETTER

CivTech

OFFICIAL RECORDS OF
PINAL COUNTY RECORDER
LAURA DEAN-LYTLE

WHEN RECORDED, RETURN TO:

Mary Myers, City Clerk
City of Eloy
628 North Main Street
Eloy, Arizona 85231

DATE/TIME: 10/31/07 1038
FEE: $11.00
PAGES: 2
FEE NUMBER: 2007-121046

**RESOLUTION NO.: 07-1091**

**A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF ELOY, ARIZONA APPROVING A REQUEST BY EPS GROUP, INC. ON BEHALF OF BRALU, LLC TO ABANDON MILLIGAN ROAD BETWEEN SUNSHINE BOULEVARD AND LA PALMA ROAD AT THE TIME THE CITY COUNCIL ACCEPTS DATE STREET BETWEEN SUNSHINE BOULEVARD AND LA PALMA ROAD FOR MAINTENANCE.**

**WHEREAS,** Milligan Road will be replaced by the new Date Street alignment, which intersects with Sunshine Boulevard and provides a much safer access into the industrial park property; and

**WHEREAS,** the intersection of the new Date Street and La Palma Road coincides with the existing intersection of Milligan Road and La Palma Road so no change to that existing or future access is proposed with this abandonment request;

**WHEREAS,** all affected property owners and known utility companies have been notified of the request and no negative responses have been made to the city; and

**WHEREAS,** there are no known active utilities in this portion of Milligan Road and all new utilities will be constructed with the new Date Street improvements.

**NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF ELOY, ARIZONA, AS FOLLOWS:**

Section 1. The Mayor and City Council of the City of Eloy, Arizona hereby approves a request by EPS Group, Inc. on behalf of Bralu, LLC to abandon Milligan Road between Sunshine Boulevard and La Palma Road at the time the city of Eloy accepts Date Street between Sunshine Boulevard and La Palma Road for maintenance.

**PASSED AND ADOPTED** by the Mayor and City Council of the City of Eloy, Arizona, this 27th day of August, 2007.

**APPROVED:**

Byron Jackson, Mayor

**ATTEST:**

Mary Myers, City Clerk

**APPROVED AS TO FORM:**

Stephen Cooper, City Attorney

# APPENDIX K

## TRB CIRCULAR E-C019

CivTech

# Driveway Spacing and Traffic Operations

**JEROME S. GLUCK, GREG HAAS, JAMAL MAHMOOD**
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*New Haven, CT 06515*

## ABSTRACT

This paper reviews research studies relating traffic operations to access spacing, presents results of specially conducted operations analyses at 22 sites in Connecticut, Illinois, New Jersey, and New York, and sets forth emergent access spacing guidelines. The literature review and operational analyses were performed as part of NCHRP Project 3-52—Impacts of Access Management Techniques. Each site represented an unsignalized driveway for a major traffic generator along a suburban arterial roadway without deceleration lanes. Information was gathered on the number and percentage of through vehicles impacted by right turns. The percentage of through vehicles impacted approximated 0.18 times the right-turn volumes. The impact lengths of through vehicles were determined, and the influence distances were computed. The results were then used to quantify the likely effects of multiple driveways and to establish guidelines for deceleration lanes and access separation distances. Access separation distances for various operating speeds and right-turn volumes were based on the likelihood of minimizing spillback across an upstream driveway over a series of driveways along a ¼-mile section of road. For example, to hold the spillback rate to 20% for a 40-mph posted speed, a 285-foot spacing would be needed. When the acceptable spillback rate is reduced to 5%, a 400-foot separation is required.

---

## DISCLAIMER

The opinions and conclusions expressed or implied in this report are those of the research agency that performed the research, and, while they have been accepted as appropriate by the technical committee, they are not necessarily those of the Transportation Research Board, the National Research Council, the American Association of State Highway and Transportation Officials, or the Federal Highway Administration, U.S. Department of Transportation.

## INTRODUCTION

The spacing, location and design of access points influence traffic operations and safety. Too many closely spaced street and driveway intersections increase delays, while too few may inhibit access and over-concentrate traffic.

This paper reviews research studies relating traffic operation and access spacing, presents the results of specially conducted operational analysis, and sets forth emergent guidelines for unsignalized access spacing. The literature review and operational analyses were performed as part of NCHRP Project 3-52—Impacts of Access Management Techniques (*1*).

## OVERVIEW OF OPERATIONS EXPERIENCE

Several operational studies have attempted to quantify the travel time impacts associated with access spacing through field observations or traffic simulations. There were five studies conducted between 1962 and 1978, and four more recent studies.

The studies found that increasing the number of driveways (i.e., reducing driveway spacing) along a section of highway increased delays and reduced roadway capacities. The methods and results varied from study-to-study, and there were no "before and after" studies. The field studies by Reilly et al. (*7*) and the simulations by McShane (*11*) gave generally consistent results. For driveway volumes of 600 per hour per mile, the Reilly studies (for uninterrupted flow) showed a speed loss of 1.0 to 1.7 mph per driveway, while the McShane simulations (for signalized arterials) suggested a 1.0 to 2.0 mph loss per driveway.

## OPERATIONS ANALYSIS

Special studies were conducted to identify how right turns entering a driveway affect other drivers following in the same travel lane. The number of incidents was observed when brake lights were activated or evasive maneuvers were taken by a through vehicle following a right-turning vehicle. These observations served as surrogate measures for the number of impacts.

The field investigations and analyses were conducted for 22 sites in Connecticut, Illinois, New Jersey, and New York. Each site represented a major traffic generator along a suburban arterial roadway. The arterials had no deceleration lane, and the driveways were not signalized.

Information was gathered on the number and percentage of through vehicles impacted by right turns. The impact lengths of through vehicles impacted were determined, and, in turn, influence areas were computed. The results were used to quantify the effects of multiple driveways and to develop inputs for establishing unsignalized access spacing guidelines.

1. The number and percentage of through vehicles in the right lane that were impacted by right-turn-in at a single driveway.
2. The percentage of through vehicles in the right lane that were impacted by right-turn-in over a series of driveways.
3. The distances back from a single driveway entrance that cars began to be impacted—the impact length—and the spatial distributions of impacted vehicles.
4. The "influence areas" or influence distances before (upstream of) a driveway entrance. This involved adding perception-reaction distance and car length to the impact length.

5. The proportions of through vehicles in the right lane whose influence lengths extended to or beyond at least one upstream driveway over a section of road (spillback rate).
6. The variations of spillback rate by roadway operating speed.

## Through Vehicles Impacted by Right Turns

The number and percentage of right (curb) lane through vehicles impacted by vehicles turning right into an unsignalized driveway were obtained from field measurements. The results were extended to assess the percentage of through vehicles in the right lane that would be impacted over a series of driveways.

### *Single Driveways*

Traffic volume and impact characteristics at each study site were obtained. The right-lane volume ranged from about 245 to 820 vph, with an average of about 525 vph. The right-turn-in volume ranged from about 10 to 245 vph, with an average of about 100 vph. The percent of right-lane through vehicles impacted by right-turn-in ranged from about 2 to over 45 percent, with an average of about 17 percent.

Figure 1 plots the percent of right lane through vehicles impacted as a function of right-turn-in volumes. A good linear relationship exists with a coefficient of determination ($R^2$) of 0.78. The percentage of right lane through vehicles impacted was about 0.18 times the right-turn-in volume.

Four classes of right-turn-in volumes were identified with the following impacts at individual driveways.

| *Right-Turn-In Volume (vph)* | *Percent of Right Lane Through Vehicles That Were Impacted by Right Turn In* |
|---|---|
| <30 | 2% |
| 31–60 | 7% |
| 61–90 | 12% |
| Over 90 | 22% |

### *Multiple Driveways*

The percentage of through traffic that would be impacted over a series of driveways in a quarter-mile road section was derived by extending the preceding analysis through probability analysis. The percentage of right-lane through vehicles being impacted at least once per quarter mile was derived as follows. The probability of being impacted is $P_1$. The probability of the complement, *not* being impacted, is $1 - P_1$. The probability of not being impacted for n driveways is $(1 - P_1)^n$. If n is the number of driveways per quarter mile, $(1 - P_1)^n$ is the probability of not being impacted for a quarter-mile segment. The complement of this, the probability of being impacted at least once per quarter mile, $P_r$, is then $1 - (1 - P_1)^n$.

The results of these calculations are given in Figure 2. These values are independent of speeds since they deal only with the percent of right-lane through vehicles impacted—

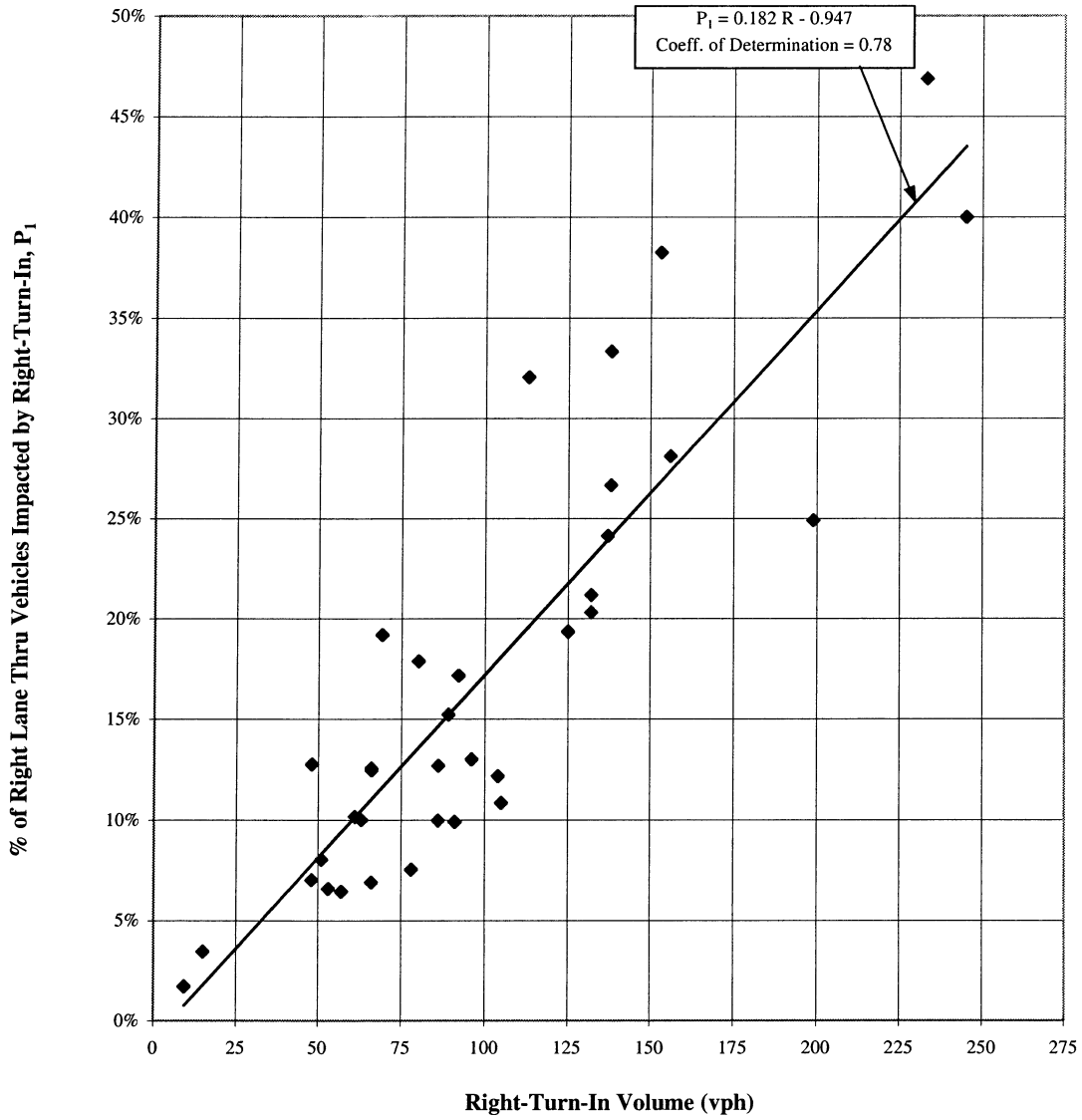



**FIGURE 1 Single driveway case: Impacts vs. right-turn-in-volume.**

not how far back the impact area extends. Thus, if there was a driveway spacing of 100 feet (i.e., 13.2 driveways per quarter mile) and a right-turn volume of 30 to 60 vph, about 64 percent of the through vehicles would be impacted. If the driveway spacing was increased to 400 feet, 23 percent of the through vehicles would be impacted.

*Driveway Impact Lengths*

The information gathered from the 22 sites was analyzed to identify key patterns of driver behavior. Frequency and cumulative frequency distribution curves were prepared of impact lengths for each site. Figure 3 gives a composite picture of the cumulative distributions of impact length for all sites. (The x-axis gives impact length and the y-axis gives the percent of impacted vehicles that are impacted beyond a specified length.)

However, more important than the distribution of impacts lengths for impacted vehicles is the distribution of impact lengths expressed in terms of the percentages of *all*

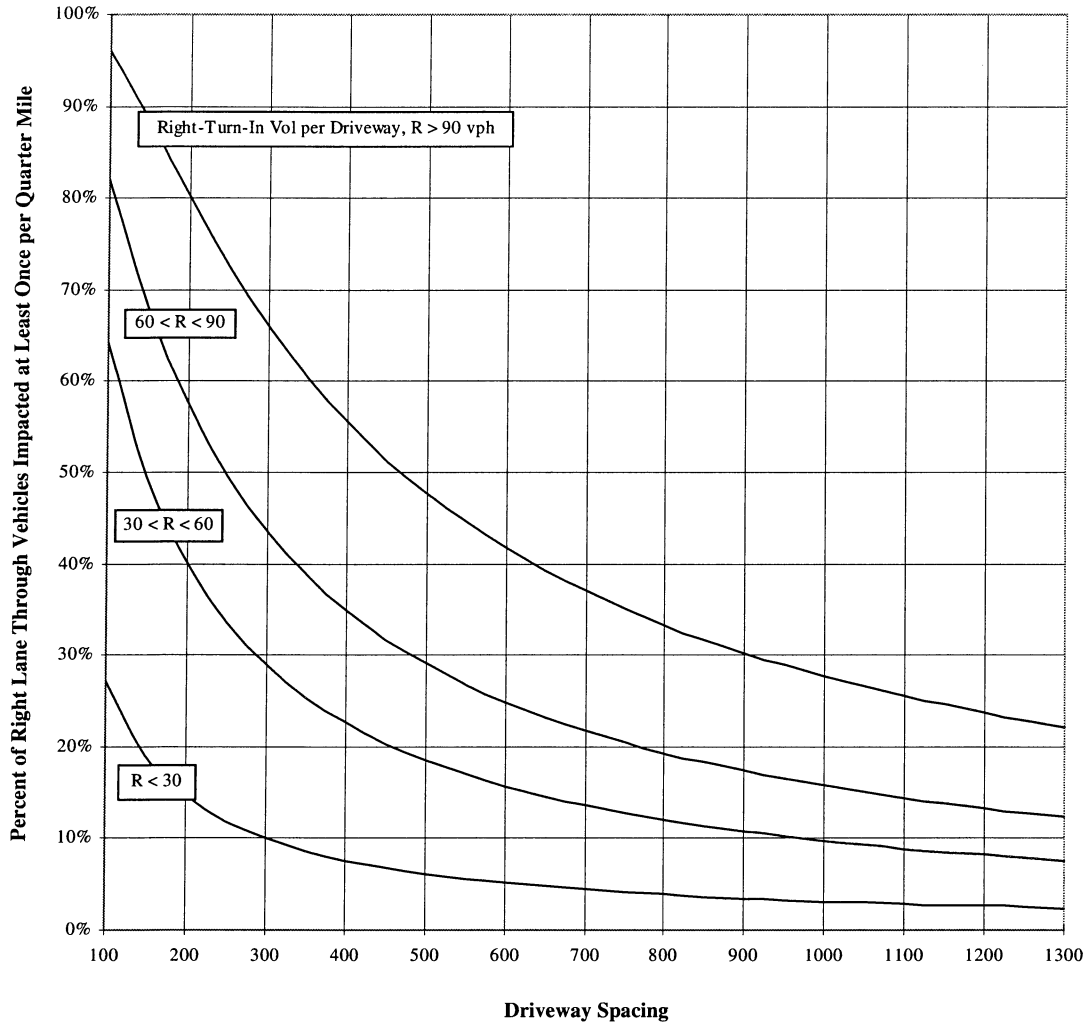
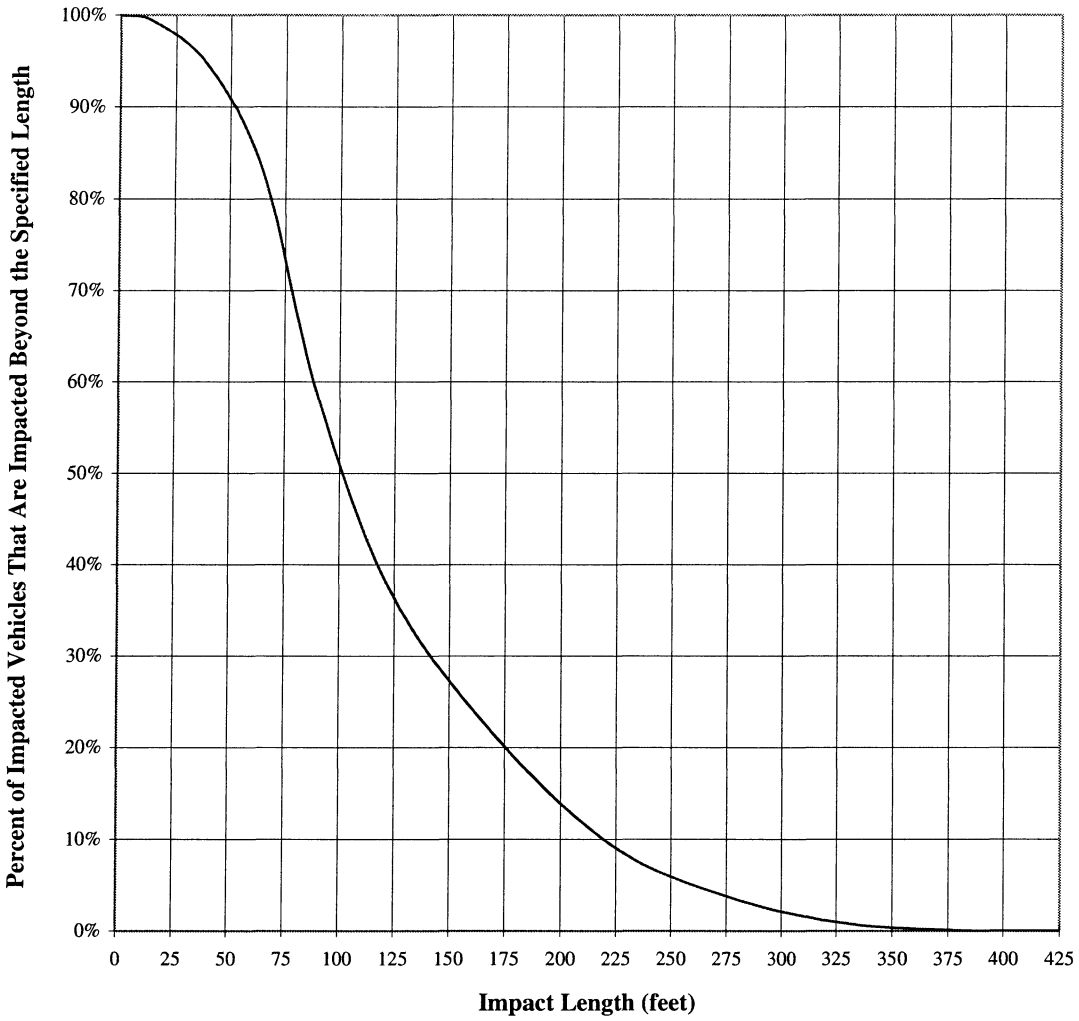



**FIGURE 2 Multiple driveway case: Vehicles impacted at least once per quarter mile.**

right-lane through vehicles, whether impacted or not. Four curves were derived for the four classes of right-turn-in volumes. The composite cumulative frequency distribution of impact lengths (Figure 3) was multiplied by the percent of right-lane through vehicles that were impacted by right-turn-in movements for each class. The results are shown in Figure 4 for the four ranges of right-turn-in volumes.

The curves can be used to estimate the percentage of through vehicles in the right lane that would be impacted by right-turn-in traffic for various distances from a driveway for each range of right-turn-in volumes.

- Thus, beyond a distance of 150 feet upstream from the driveway entrance, for a right-turn-in volume greater than 90 vehicles per hour, about 7 percent of the right-lane through vehicles would be impacted.
- Beyond a distance of 100 feet upstream of a driveway, for a right-turn-in volume of 60 to 90 vehicles per hour, almost 7 percent of the right-lane through traffic would be impacted. Beyond a distance of 200 feet, about 2 percent would be impacted.




Note: Arterial posted speeds ranged from 30 to 45 mph for all sites, with an average of 35.6 mph. The relationship between speed and impact length is discussed later.

**FIGURE 3 Cumulative frequency distribution of impact lengths for all impacted vehicles: Composite for all sites.**

*Driveway-Influence Lengths*

The "influence lengths" or "distances" associated with various right-turn-in volumes and driveway spacings were also established. They consist of three components: impact length, car length, and perception-reaction distance:

1) *The impact length* was determined from field observations.
2) *The car length* was added because the field observations of impact lengths were taken at the front of each car, and the influence length should be measured to the rear of a vehicle. A value of 25 feet was used.

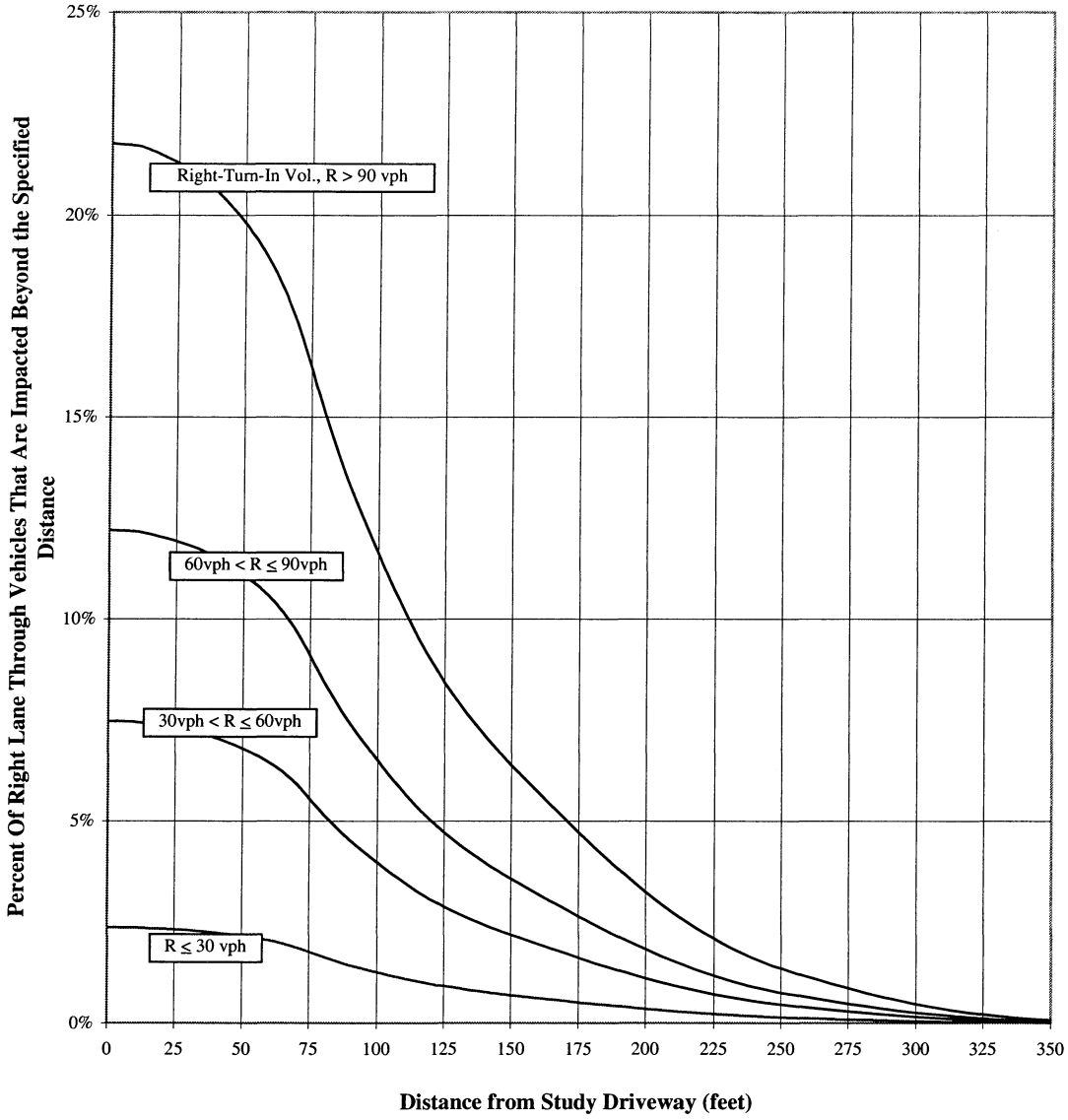



**FIGURE 4 Single driveway case: Cumulative frequency distribution of impact lengths (posted speed = 30 mph).**

3) *The perception-reaction distance* was based on a two-second reaction time that is typical of suburban conditions. (This represents the average of the 1.5 seconds and 2.5 seconds that AASHTO specifies for urban and rural conditions, respectively.)

The equation for perception and reaction distance is:

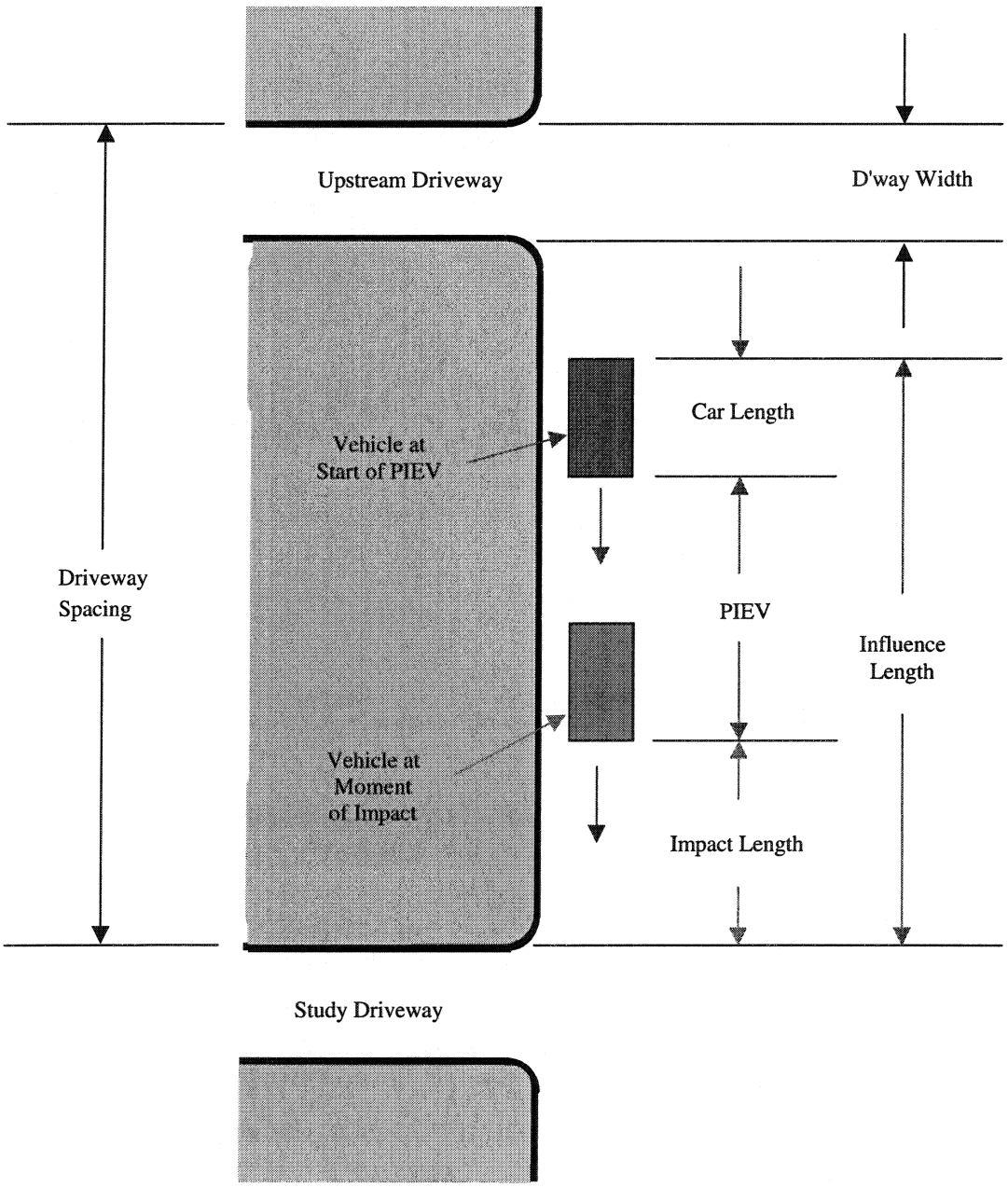
$$d = 1.47\ St \tag{1}$$

where:

$d$ = perception/reaction distance in feet
1.47 = the conversion factor from miles per hour to feet per second

$S$ = the speed in miles per hour
$t$ = the reaction time in seconds.

A vehicle was considered to be influenced at or beyond another driveway if the influence length was greater than or equal to the driveway spacing minus the driveway width. Figure 5 shows the situation where the vehicle is *not* influenced at or beyond




When (Influence Length) < (Driveway Spacing) – (Driveway Width), spillback does not occur.

**FIGURE 5 Influence length.**

another driveway (i.e., influence length is less than the driveway spacing minus the driveway width).

Influence distances were computed based on an average running speed of 30 mph. (Running speed is the travel distance divided by running time—the duration during which a vehicle is in motion.) The resulting influence length (in feet) is:

$$\text{Influence Length} = \text{Impact Length} + \text{Car Length} + \text{PIEV distance} \quad (2a)$$

$$\begin{aligned}\text{Influence Length} &= \text{Impact Length} + 25 + 30(2)(1.468) \\ &= \text{Impact Length} + 113 \text{ feet}\end{aligned} \quad (2b)$$

Figure 6 shows the cumulative frequency distribution of influence lengths for the four right-turn-in volume groups. It is similar to Figure 4, except that the curves are shifted 113 feet to the right to account for the above calculation. The posted speeds at the study sites ranged from 30 to 45 mph, with an average of 35.6 mph. Therefore, to be conservative, this figure was considered for posted speeds of 30 mph.

*Multiple Driveways*

The influence length curves were expanded to assess the effects of multiple driveways. The results are shown in Table 1 for a posted speed of 30 mph. The first two columns in this table show driveway spacing in increments of 25 feet, and the corresponding number of driveways per quarter mile (defined as "n"). For each of the four right-turn-in volume per driveway categories, $P_2$ is the probability of a vehicle being influenced at or beyond another driveway for a single driveway condition. Figure 6 is used to get the $P_2$ values for any given driveway spacing. Thus, for a 225-foot influence length (30 mph) with more than 90 entering right turns per driveway, 10 percent of the through vehicles would be influenced beyond this distance (Figure 6). When 30 feet are deducted for the driveway width and the figure is reentered at an influence length of 195 feet, the corresponding value for a single driveway is 14.7 percent. This is the value that is entered as $P_2$ in Table 1 for $R > 90$ vph and a driveway spacing of 225 feet.

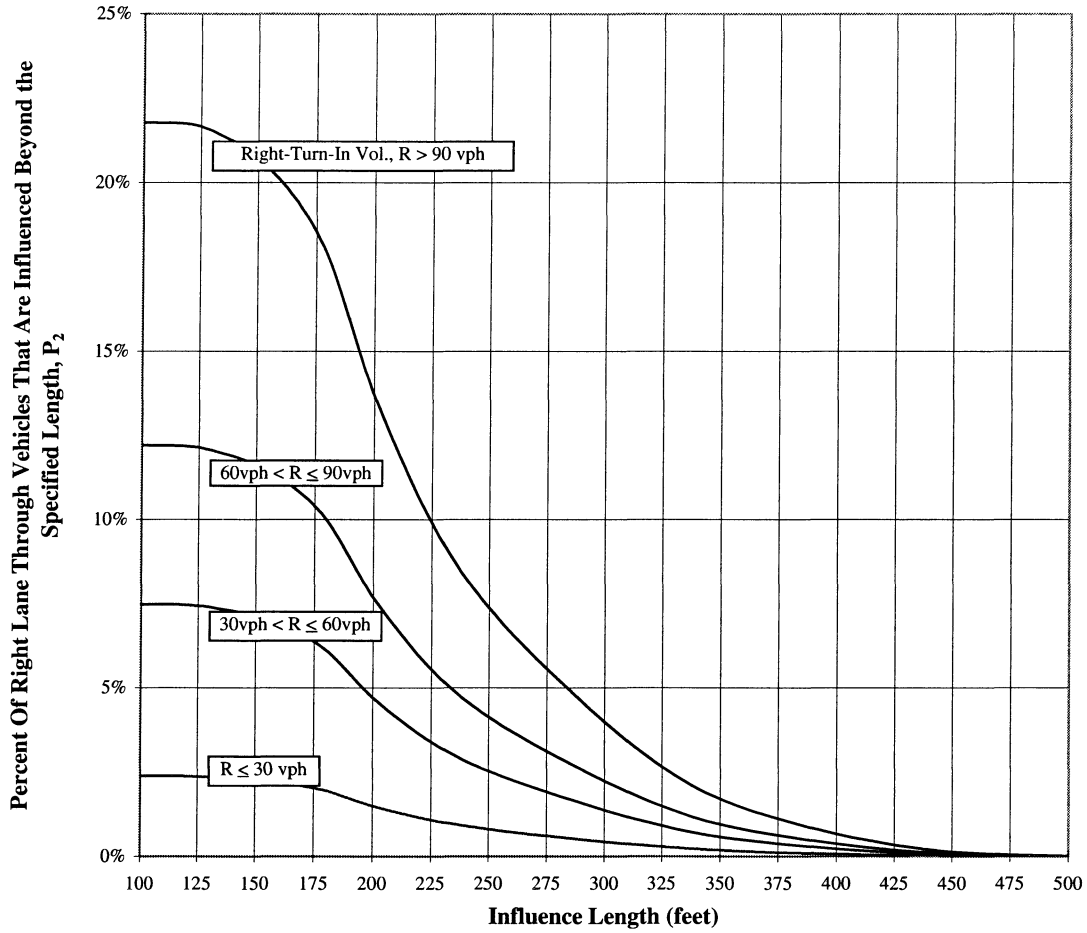
The probability of a right-lane through vehicle being influenced by right-turn-in at least once per quarter mile is $1-(1-P_2)^n$.

*Effects of Speed*

The influence distance increases as speed increases. This is because driver behavior is keyed to separation in time (as well as space) and because perception-reaction distance increases as speed increases. The analysis found that the impact length was related to speed and the distance from the upstream traffic signal.

(a) *Impact Length Changes.* The analysis established the following relationship between speed, distance from upstream traffic signal, and impact length.

$$L = 0.361[(s - 30)^2 + s] + 0.050d + 86.073 \qquad (R^2 = 0.778) \quad (3)$$




Note: Influence length is equal to the impact length plus the PIEV distance plus the car length.

**FIGURE 6 Single driveway case: Cumulative frequency distribution of influence lengths (posted speed = 30 mph).**

where:

$L$ = the mean impact length in feet.
$s$ = the running speed in mph ($s \geq 30$ mph).
$d$ = the distance in feet from the nearest upstream traffic signal.

This equation was used to convert the mean impact length for any percentile from a running speed of 30 mph to other speeds. The running and posted speeds were considered to be comparable for purposes of calculating impact lengths and influence areas.

Solving the equation for "d" yields a value of 1,142 feet. Substituting different speed values into the equation while holding "d" constant yields their corresponding mean impact lengths. Dividing these numbers by 154 feet, the mean impact length for a posted speed of 30 mph gives a factor for converting impact lengths at any percentile

**TABLE 1 Spillback Rates: Percentage of Right Lane Through Vehicles Influenced at or Beyond Another Driveway (Posted Speed = 30 mph)**

| D'way Spacing (ft) | No. of D'ways per 1/4 Mi., n | Right-Turn-In Volume per Driveway, R (vph) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | R ≤ 30 | | 30 < R ≤ 60 | | 60 < R ≤ 90 | | R > 90 | |
| | | Single D'way, $P_2$ | Multiple D'ways, At Least Once per 1/4 Mi., $1 - (1 - P_2)^n$ | Single D'way, $P_2$ | Multiple D'ways, At Least Once per 1/4 Mi., $1 - (1 - P_2)^n$ | Single D'way, $P_2$ | Multiple D'ways, At Least Once per 1/4 Mi., $1 - (1 - P_2)^n$ | Single D'way, $P_2$ | Multiple D'ways, At Least Once per 1/4 Mi., $1 - (1 - P_2)^n$ |
| 100 | 13.2 | 2.4% | 27.3% | 7.5% | 64.2% | 12.2% | 82.1% | 21.8% | 96.1% |
| 125 | 10.6 | 2.4% | 22.5% | 7.5% | 56.0% | 12.2% | 74.7% | 21.8% | 92.5% |
| 150 | 8.8 | 2.4% | 19.0% | 7.5% | 49.4% | 12.2% | 68.1% | 21.7% | 88.4% |
| 175 | 7.5 | 2.3% | 16.1% | 7.2% | 43.1% | 11.8% | 61.1% | 21.0% | 83.1% |
| 200 | 6.6 | 2.1% | 13.0% | 6.6% | 36.1% | 10.7% | 52.6% | 19.1% | 75.3% |
| 225 | 5.9 | 1.6% | 9.1% | 5.0% | 26.2% | 8.2% | 39.6% | 14.7% | 60.7% |
| 250 | 5.3 | 1.2% | 6.0% | 3.6% | 17.8% | 5.9% | 27.6% | 10.6% | 44.7% |
| 275 | 4.8 | 0.9% | 4.0% | 2.7% | 12.2% | 4.4% | 19.3% | 7.8% | 32.3% |
| 300 | 4.4 | 0.6% | 2.8% | 2.0% | 8.6% | 3.3% | 13.8% | 5.9% | 23.5% |
| 325 | 4.1 | 0.5% | 1.9% | 1.5% | 5.9% | 2.4% | 9.4% | 4.3% | 16.3% |
| 350 | 3.8 | 0.3% | 1.2% | 1.0% | 3.7% | 1.6% | 6.0% | 2.9% | 10.5% |
| 375 | 3.5 | 0.2% | 0.7% | 0.6% | 2.2% | 1.0% | 3.6% | 1.9% | 6.4% |
| 400 | 3.3 | 0.1% | 0.4% | 0.4% | 1.4% | 0.7% | 2.2% | 1.2% | 3.9% |
| 425 | 3.1 | 0.1% | 0.3% | 0.3% | 0.8% | 0.4% | 1.3% | 0.7% | 2.3% |
| 450 | 2.9 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

for a posted speed of 30 mph to impact lengths at the same percentile for any other speed. The results are shown below.

| *Posted Speed (mph)* | *Mean Impact Length (feet)* | *Factor* | *Speed Ratio* |
|---|---|---|---|
| 30 | 154 | 1.00 | 1.00 |
| 35 | 164 | 1.07 | 1.17 |
| 40 | 194 | 1.26 | 1.33 |
| 45 | 241 | 1.56 | 1.50 |
| 50 | 306 | 1.98 | 1.67 |
| 55 | 389 | 2.52 | 1.83 |

Thus, to transform the 30 mph impact length curve to that for any other speed, the impact length for each percentile should be multiplied by the factor given above. Alternatively, impact lengths could be estimated based on the ratio of the observed speed to 30 mph; these indices are also shown.

(b) *PIEV Distance and Car Length.* The car length remains constant, but the PIEV distances increase with speed. The resulting values are as follows:

| *Posted Speed (mph)* | *PIEV Distance* |
|---|---|
| 30 | 88 |
| 35 | 103 |
| 40 | 117 |
| 45 | 132 |
| 50 | 147 |
| 55 | 161 |

Accordingly, a series of tables were prepared that show the likelihood of spillback across driveways for various posted speeds, right-turn lane volumes and driveway spacings. These tables provide a means of assessing impacts where a driveway is added, closed, or consolidated. This involves comparing the percentages of vehicles extending across a driveway for speed and right-turn volumes for the before and after conditions. The information may be used to identify the cumulative impact of decisions concerning driveway location and unsignalized access spacing.

*Comparison of Results*

Table 2 gives unsignalized driveway spacings for various speeds, right-turn-in volumes, and "spillback" percentages. (Spillback is defined as the incidence of a right-lane through vehicle being influenced at or beyond the driveway upstream of the analysis driveway. It occurs when the influence length is greater than the driveway spacing minus the driveway width. The spillback rate represents the percentage of right-lane through vehicles that experience this occurrence.) The table also shows the New Jersey and Colorado access spacing standards for comparative purposes.

The more liberal the standard (i.e., the greater the percentage of vehicles influenced at or beyond another driveway), the shorter the required driveway spacing. Similarly, the lower the assumed right-turn volumes (average per driveway), the shorter the allowable spacing.

## APPLICATION OF FINDINGS

The preceding analyses can be used to establish guidelines for deceleration lanes and unsignalized access spacing.

### Deceleration Lanes

Right-turn deceleration lanes are desirable to remove turning vehicles from through travel lanes, thereby reducing speed differentials and minimizing delays to through vehicles.

## TABLE 2 Unsignalized Access Spacing Comparisons

| Posted Speed Limit (mph) | Existing Spacing Standards (ft) | | Possible Spacing Guideline Based Upon Maximum Allowable Spillback Rate | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2 % Allowed | | | | 5 % Allowed | | | |
| | New Jersey DOT | Colorado DOT | Right Turn In Vol. per D'way, R (vph) | | | | Right Turn In Vol. per D'way, R (vph) | | | |
| | | | R < 30 | 30<R<60 | 60<R<90 | R > 90 | R < 30 | 30<R<60 | 60<R<90 | R > 90 |
| 30 | 125 | 200 | 320 | 380 | 405 | 430 | 260 | 335 | 360 | 385 |
| 35 | 150 | 250 | 345 | 405 | 435 | 460 | 280 | 355 | 385 | 415 |
| 40 | 185 | 325 | 380 | 460 | 490 | 520 | 305 | 400 | 430 | 465 |
| 45 | 230 | 400 | 430 | 530 | 565 | 610 | 340 | 450 | 495 | 540 |
| 50 | 275 | 475 | 490 | 620 | 665 | 725 | 380 | 520 | 575 | 630 |
| 55 | 330 | 550 | 550 | 725 | 780 | 855 | 420 | 590 | 665 | 740 |

| Posted Speed Limit (mph) | Existing Spacing Standards (ft) | | Possible Spacing Guideline Based Upon Maximum Allowable Spillback Rate | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10 % Allowed | | | | 15 % Allowed | | | |
| | New Jersey DOT | Colorado DOT | Right Turn In Vol. per D'way, R (vph) | | | | Right Turn In Vol. per D'way, R (vph) | | | |
| | | | R < 30 | 30<R<60 | 60<R<90 | R > 90 | R < 30 | 30<R<60 | 60<R<90 | R > 90 |
| 30 | 125 | 200 | 220 | 290 | 320 | 355 | 185 | 260 | 295 | 320 |
| 35 | 150 | 250 | 235 | 310 | 345 | 380 | 190 | 280 | 315 | 355 |
| 40 | 185 | 325 | 250 | 340 | 380 | 420 | 195 | 305 | 345 | 390 |
| 45 | 230 | 400 | 270 | 380 | 430 | 485 | 195 | 340 | 385 | 445 |
| 50 | 275 | 475 | 285 | 425 | 490 | 560 | 195 | 380 | 435 | 510 |
| 55 | 330 | 550 | 290 | 480 | 550 | 645 | 195 | 420 | 490 | 580 |

| Posted Speed Limit (mph) | Existing Spacing Standards (ft) | | Possible Spacing Guideline Based Upon Maximum Allowable Spillback Rate | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 20 % Allowed | | | | 25 % Allowed | | | |
| | New Jersey DOT | Colorado DOT | Right Turn In Vol. per D'way, R (vph) | | | | Right Turn In Vol. per D'way, R (vph) | | | |
| | | | R < 30 | 30<R<60 | 60<R<90 | R > 90 | R < 30 | 30<R<60 | 60<R<90 | R > 90 |
| 30 | 125 | 200 | 140 | 245 | 270 | 310 | 110 | 230 | 255 | 295 |
| 35 | 150 | 250 | 140 | 260 | 290 | 330 | 110 | 245 | 275 | 315 |
| 40 | 185 | 325 | 140 | 285 | 320 | 370 | 110 | 265 | 300 | 345 |
| 45 | 230 | 400 | 140 | 315 | 355 | 410 | 110 | 290 | 335 | 385 |
| 50 | 275 | 475 | 140 | 345 | 400 | 470 | 110 | 315 | 370 | 435 |
| 55 | 330 | 550 | 140 | 380 | 445 | 530 | 110 | 330 | 415 | 495 |

The percentage of through vehicles in the right lane that must slow down or change lanes provides one possible basis for establishing the need for right-turn lanes.

For arterial right-lane volumes of 250 to 800 vph, the percentage of through vehicles impacted was about 0.18 times the right-turn volume. This results in the following impacts that can provide a basis for providing right turn lanes.

| *% Right-Lane Through Vehicles Impacted* | *Right-Turn-In Volume vph (Approximate)* |
|---|---|
| 0% | 0 |
| 2% | 10 |
| 5% | 30 |
| 10% | 60 |
| 15% | 85 |
| 20% | 110 |

A criterion of 2 percent impacted suggests a minimum right-turn volume of 10 vph, and may be applicable in certain rural settings. A criterion of 10 percent impacted suggests a minimum of approximately 60 vph. A criterion of 20 percent suggests a right-turn volume of 110 vph. The latter criterion may be applicable in certain urban areas. The length of the deceleration lane is a function of the impact length and storage requirements.

## Access Separation Distances

Both operational and safety considerations should govern unsignalized access spacing. A third consideration is the access classification of the roadways involved.

Figure 7 compares the access separation distances for a range of spillback rates with the standards for Colorado and New Jersey, and AASHTO standards. Except for posted speeds of less than 40 mph, the resulting values for spillback rates of 10 to 20 percent fall between the New Jersey and Colorado (AASHTO safe stopping sight distance) criteria.

Access separation distances, based on an average driveway volume of 30 to 60 vph, are shown in Table 3 for spillback rates of 5, 10, 15, and 20 percent. For the lower speeds of 30 and 35 mph, the access separation distance shown is based on the safety considerations—major roadways should not have more than 20 to 30 connections per mile (both directions). For a posted speed of 40 mph, the access spacing would range from 285 feet to 400 feet depending upon which spillback rate was selected. For a posted speed of 50 mph, the access spacing would range from 520 feet to 345 feet depending on the spillback rate.

## Policy Guidelines

Access separation distances should be established as part of access management programs, route retrofit plans, and community zoning ordinances. Ideally, direct property access from strategic and principal arterials should be provided only where reasonable access cannot be provided from other roadways. Whenever access is provided, spacing should be adequate to maintain safety and minimize impacts. The separation distances set forth in this paper can provide guidance in this effort.

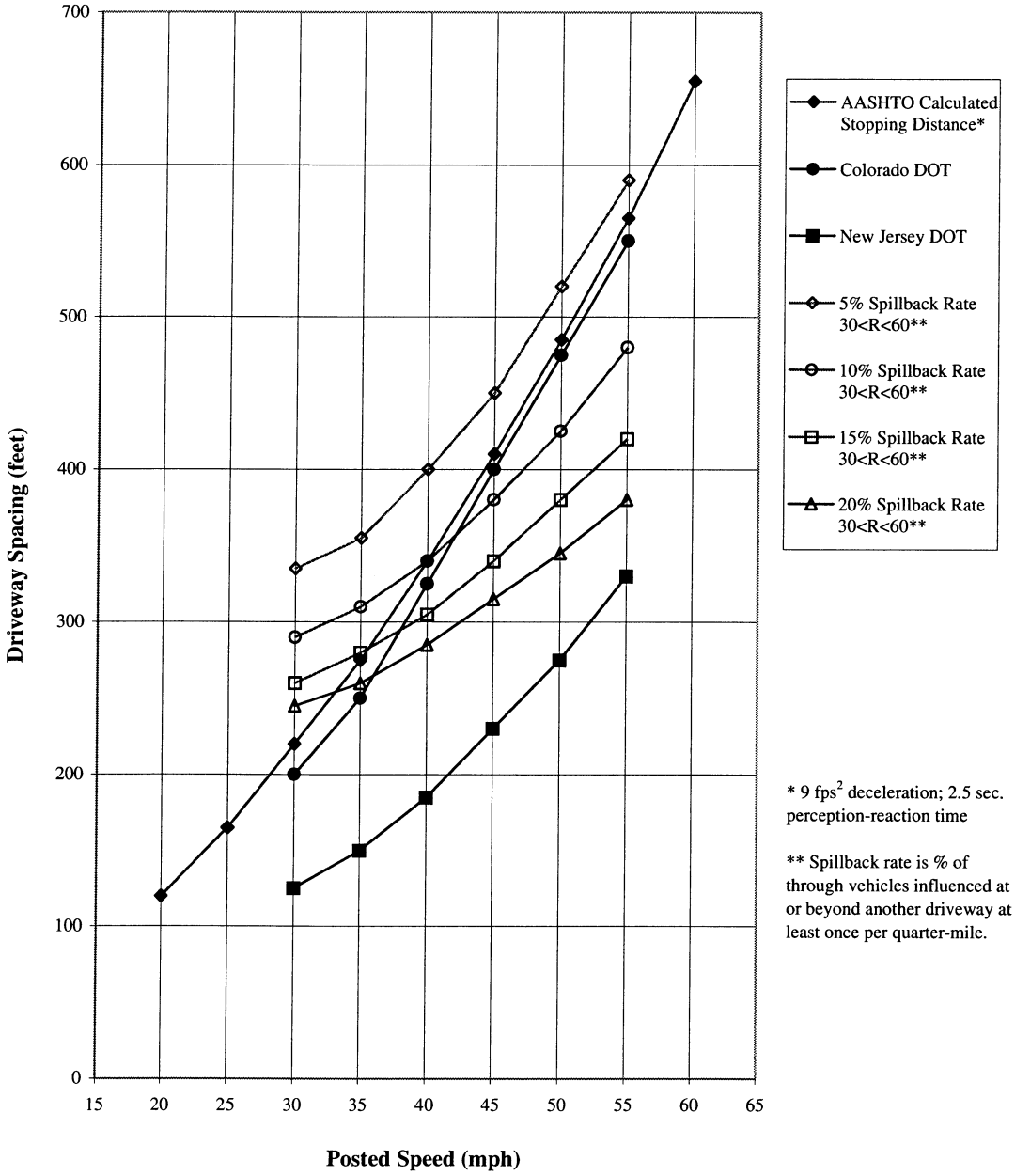



**FIGURE 7 Comparison of access separation criteria.**

**TABLE 3 Access Separation Distances (Feet) Based on Spillback Rate***

| Posted Speed(mph) | SPILLBACK RATE** | | | |
|---|---|---|---|---|
| | 5% | 10% | 15% | 20% |
| 30 | 335 | 265 (a) | 210 (b) | 175 (c) |
| 35 | 355 | 265 (a) | 210 (b) | 175 (c) |
| 40 | 400 | 340 | 305 | 285 |
| 45 | 450 | 380 | 340 | 315 |
| 50 | 520 | 425 | 380 | 345 |
| 55 | 590 | 480 | 420 | 380 |

(a) Based on 20 driveways per mile.

(b) Based on 25 driveways per mile.

(c) Based on 30 driveways per mile.

*Based on an average of 30 to 60 right turns per driveway.

**Spillback occurs when a right-lane through vehicle is influenced by right-turn-in to or beyond a driveway upstream of the analysis driveway. The spillback rate represents the percentage of right-lane through vehicles experiencing this occurrence.

## ACKNOWLEDGMENTS

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# APPENDIX L

## PEAK HOUR SIGNAL WARRANT ANALYSIS

## EXCERPTS FROM 2003 MUTCD – WARRANT 3

CivTech

Guidance:

The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

**Standard:**

**The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:**

**A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and**

**B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.**

**These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.**

Option:

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 70 km/h or exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

## Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:

The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

**Standard:**

**The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

Option:

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 70 km/h or exceeds 40 mph or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

## Section 4C.04 Warrant 3, Peak Hour

Support:

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

**Standard:**

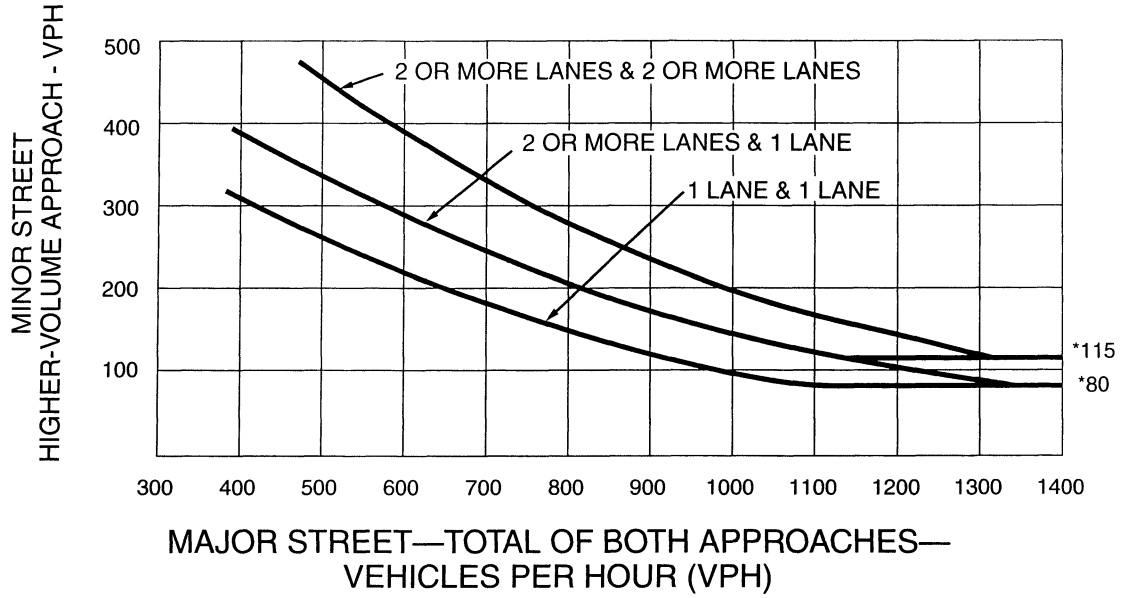
**This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**

**The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**

**A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:**

**1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and**

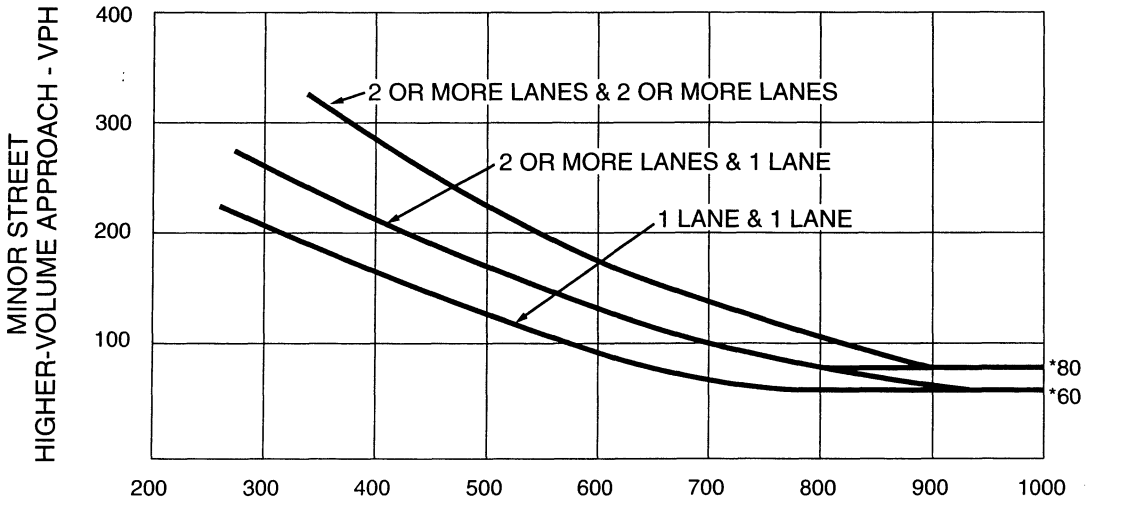
## *Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume*




*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

## *Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)*

**(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)**




*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

2. **The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and**
3. **The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.**

B. **The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.**

Option:

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 70 km/h or exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to satisfy the criteria in the second category of the Standard.

## Section 4C.05 Warrant 4, Pedestrian Volume

Support:

The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

**Standard:**

**The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that both of the following criteria are met:**

A. **The pedestrian volume crossing the major street at an intersection or midblock location during an average day is 100 or more for each of any 4 hours or 190 or more during any 1 hour; and**
B. **There are fewer than 60 gaps per hour in the traffic stream of adequate length to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic.**

**The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 90 m (300 ft), unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

**If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads conforming to requirements set forth in Chapter 4E.**

Guidance:

If this warrant is met and a traffic control signal is justified by an engineering study, then:

A. If at an intersection, the traffic control signal should be traffic-actuated and should include pedestrian detectors.
B. If at a nonintersection crossing, the traffic control signal should be pedestrian-actuated, parking and other sight obstructions should be prohibited for at least 30 m (100 ft) in advance of and at least 6.1 m (20 ft) beyond the crosswalk, and the installation should include suitable standard signs and pavement markings.
C. Furthermore, if installed within a signal system, the traffic control signal should be coordinated.

Option:

The criterion for the pedestrian volume crossing the major roadway may be reduced as much as 50 percent if the average crossing speed of pedestrians is less than 1.2 m/sec (4 ft/sec).

A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street, even if the rate of gap occurrence is less than one per minute.

## Section 4C.06 Warrant 5, School Crossing

Support:

The School Crossing signal warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.